Riverside Insights®

CogAT®



Companion Resources and Instructional Strategies Toolkit

A practical guide to help educators connect ability profile data to instruction, planning, and student support.

Led by product strategist and educator Monica Simonds, this collection brings together content-area companions, learner support resources, MTSS and PLC tools, and instructional strategies in one easy-to-use booklet. Click into a section or scroll through the guide to find resources that help make CogAT data more actionable, accessible, and useful in everyday educational practice.

Riverside Insights®

Table of Contents

Content-Area Companion Resources

The content-area companion resources help educators connect *CogAT®* Ability Profile insights to instruction in English language arts, math, science, and social studies. These resources include planning guides, implementation and use guides, and subject-specific companion materials designed to help teachers identify how students' reasoning strengths may show up in different academic contexts.

Use these resources when planning lessons, differentiating instruction, or helping teams think more deeply about how students approach learning across content areas.

04	ELAR Companion
13	Blog ELAR and the Ability Profiles
15	ELAR Companion Planning Guide
17	Implementation and Use Guide for the ELAR Companion
21	Math Companion
31	Math Companion Overview
33	Math Companion Planning Guide
35	Implementation and Use Guide for the Math Companion
39	Science Companion
48	Blog Science and the Ability Profiles
50	Science Companion Planning Guide
54	Social Studies Companion
63	Blog Social Studies and the Ability Profiles
65	Social Studies Companion Planning Guide
67	Implementation and Use Guide for the Social Studies Companion

Specialized Learner Support Companions

These companion resources focus on supporting specific learner groups, including multilingual learners, students receiving special education or 504 support, twice-exceptional learners, economically disadvantaged learners, and students who may benefit from acceleration.

These tools are designed to help educators use CogAT® data with greater context and care, supporting more equitable conversations about student needs, strengths, and opportunities for growth.

71	Acceleration Companion
78	Economically Disadvantaged Learners and CogAT
80	Using the Multilingual Learner Companion to Meet Student Needs
82	SPED 504 Companion
90	Twice-Exceptional Learners Companion Part 1 of 2
96	Twice-Exceptional Learners Companion Part 2 of 2
102	Special Education and the CogAT Ability Profiles
104	SPED 504 Companion Planning Guide
106	Implementation and Use Guide for SPED 504 Companion
110	Implementation and Use Guide for the Twice-Exceptional Companion

Riverside Insights®

Click on a resource to jump to that page.

Table of Contents

MTSS and PLC Resources

The MTSS and PLC companion resources help educators bring CogAT® insights into collaborative planning, intervention conversations, and professional learning communities. This section includes a blog resource, overview planning guide, and implementation guide focused on using ability data within multi-tiered systems of support and team-based decision-making.

Use these resources to guide data conversations, support instructional planning, and help teams connect student ability patterns to meaningful next steps.

114	MTSS PLC Companion
124	Blog Multi-Tiered Support Systems and Professional Learning Communities
126	PLC Companion Overview Planning Guide
127	Implementation and Use Guide for the PLC Companion
131	Multilingual Companion Part 1 of 2
134	Multilingual Companion Part 2 of 2

Instructional Strategies Toolkit

The Instructional Strategies Toolkit provides practical classroom strategies aligned to verbal, quantitative, and nonverbal strengths. Resources include exit tickets, conversational roundtables, inquiry learning tools, CAP activities, graphic organizers, iconic prompts, differentiation supports, and deeper dives into strength types.

This section is designed for educators who are ready to move from understanding ability profiles to applying them through flexible, student-centered instructional practices.

145	Overview of Instructional Strategies Toolkit
148	3 2 1 Exit Ticket V+
150	3 2 1 Exit Ticket Q+
152	3 2 1 Exit Ticket NV+
154	Conversational Roundtable V+
157	Conversational Roundtable Q+
160	Conversational Roundtable NV+
163	Inquiry Learning V+
166	Inquiry Learning Q+
169	Inquiry Learning NV+
172	CAP Activities
176	Details Deep Dive for All Strength Types
180	Iconic Prompts Intersections and Pathways
182	Graphic Organizers for All Strengths Types
186	Special Applications Differentiation

Riverside Insights®

Click on a resource to jump to that page.

CogAT® Riverside Insights®

English Language Arts and Reading Companion



Introduction

Utilizing *Ability Profiles* can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong **Verbal reasoning (V+)** tend to do well in ELAR classes, educators can't neglect the other two *Ability Profiles* that are most definitely in your classes: **Nonverbal (NV+)** and **Quantitative (Q+)**. There are ways to use the strengths of each profile to guide students toward success in ELAR. This requires effective differentiation in lesson design and conscientious planning. Each lesson sample provided offers differentiation approaches that will utilize all three *Ability Profiles* so you can reach and grow all students.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *Cognitive Abilities Test*™ (*CogAT*®) data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms?

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson —if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8 (ELAR)

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner's Multiple Intelligences; scaffolding/ personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make *Ability Profiles* from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: Is there a lesson plan template they can follow? A decision guide?

> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind.

Q: How does this work within our existing curriculum? (Which parts are nonnegotiable, and where do teachers have creative license?)

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. **Verbal (V+)**, **Nonverbal (NV+)**, and **Quantitative (Q+)** thinking skills are universally applicable and will work embedded in all content areas. For language arts, you will use the curriculum scope and sequence you already use but may find you make adjustments to specific lesson designs based on these *Ability Profile* options. You can use any of the common core or TEKS objectives to build *Ability Profile*–informed lessons. The chart on page 4 shares some content specific application ideas to use in your existing curriculum.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart below shows you some of the vertical alignment you can find in these resources. For example, in the **Q+ Strength** column, the "Right or Wrong?" Graphic Organizer is listed for all age groups, from K-2 up through 9-12. The organizer remains about the same, but increased in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What does this mean for ELAR?

A: As the learning strategies from the toolkit (see chart) increase in sophistication, so will the complexity of the content you are teaching, making it an appropriate and consistently enhanced cognitive challenge for all learners. A creative, analytical, practical (CAP) activity for 1st Grade might involve the most basic elements of plot structure, where a CAP activity for 8th Grade can still address plot structure, but will be looking at climax, conflicts, and nonlinear structure like *in medias res* or an epistolary approach. The Conversational Roundtable for a 2nd Grade class could be about genres of literature, while the Conversational Roundtable for 7th Grade could be about genres of literature as well, but using more iconic combinations, and the Conversational Roundtable for 10th Grade could address genres in rhetoric and utilize more complicated iconic pathways.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

Q: How will this help with PLC questions 3 and 4?

A: Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS (multi-tiered system of supports), re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.

Sometimes, students who are struggling are supported through Individualized Education Programs (IEPs) or Section 504 accommodations and modifications, but often they are not. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is the educator's job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.

For PLC Question 4, there are resources embedded and strategies shared in each lesson that offer guidance for increasing the cognitive challenges for students who are ready for the challenge. You will see more complicated iconic intersections and pathways as well as opportunities for unique and innovative approaches through Inquiry Learning, Think Like a Disciplinarian, and CAP Activities. Essentially, any activity you use can be enhanced to satisfy the PLC Question 4 if you plan for it in advance and use these resources strategically.

PLC Questions:

1. What do I want students to learn?
2. How will I know they learned it?
3. What will I do if they don't learn it?
4. What will I do if they already know it?

©2024 Riverside Assessments, LLC. All rights reserved.

English Language Arts and Reading Teaching Applications



Application	Sample Uses/Strategic Implementation
Conversational Roundtables Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles	• Learning new terms/major concepts ◦ Literary devices (personification, metaphor, hyperbole) ◦ Plot elements (foreshadowing, conflict/resolution, setting) ◦ Character development (dialogue, descriptions) ◦ Genres (fairy tales, fiction, nonfiction) ◦ Grammar (syntax, parts of speech, punctuation) • Posing an essential question ◦ Is power a corruptive force? ◦ Why should we be good citizens? ◦ Are we naturally good? ◦ Why do people fear change? • Promoting academic dialogue about a controversial or definitive statement ◦ Public transportation should be free. ◦ The death penalty is wrong, always. ◦ Courage can be taught/learned. ◦ Healthcare should be free.
Inquiry Learning Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Readiness Levels • Student Interests	• When presenting a new term or concept (commas, conflict, metaphors vs. similes, sentence structures, rhetorical appeals) • When offering research presentations or essay-writing tasks (students choose questions to tackle, pose an essential question they need to address, etc.) • Hook students in to new literature through an engaging dive into related topic ◦ A tattooist in the Holocaust before reading *The Diary of Anne Frank* ◦ Nature vs. nurture in preparation for a reading of *Frankenstein* ◦ What is a bully? (in preparation for reading *The New Kid on the Block* by Jack Prelutsky)

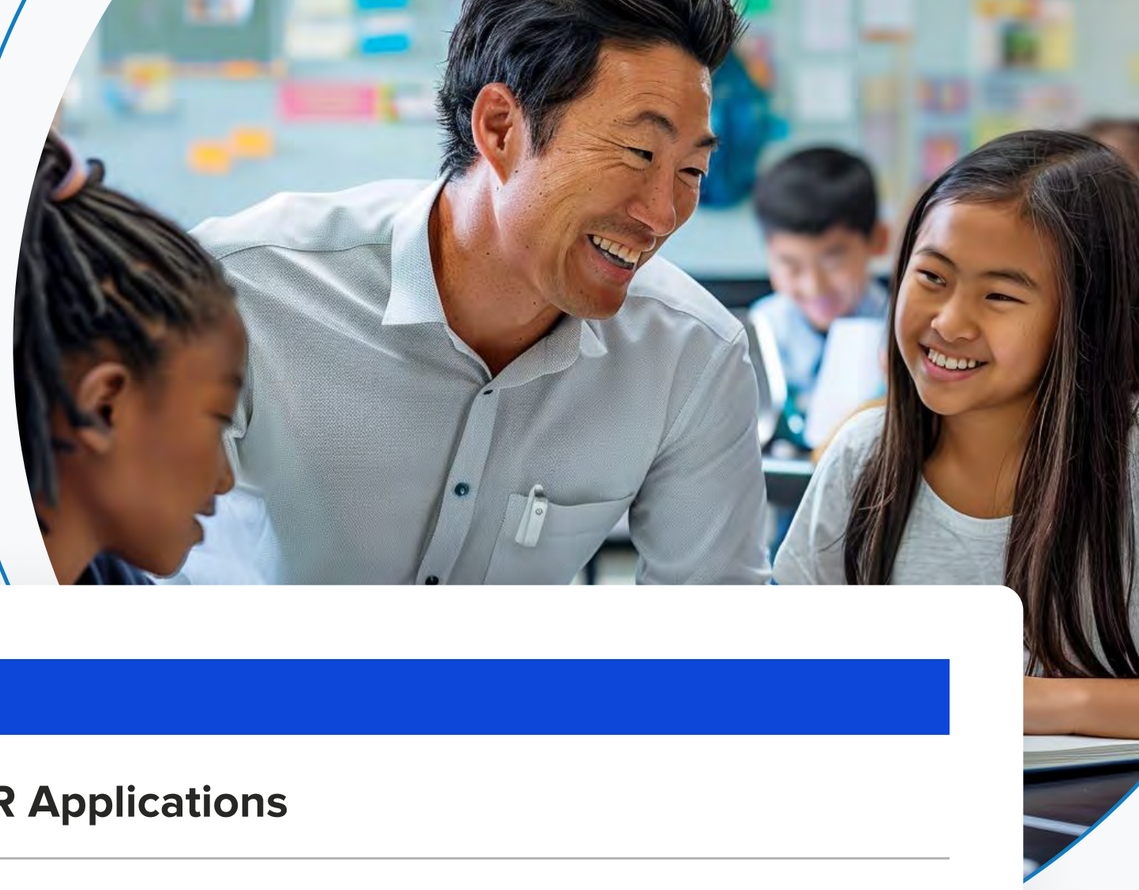
©2024 Riverside Assessments, LLC. All rights reserved.

Application	Sample Uses/Strategic Implementation
3-2-1 Exit Ticket Differentiation Type • Product Differentiation Approach • Learning Profiles	• Conclusion of any lesson or reading ◦ Key points in expository writing ◦ Important concepts from an informational video (author bio, context) ◦ Different kinds of sentences ◦ Rules for writing poetry (acrostics, lyrics, haiku) ◦ Literary analysis elements ◦ Parts of a book (table of contents, title page, author and illustrator, etc.)
CAP Activity Differentiation Type • Process Differentiation Approach • Learning Profiles	• Choose topics that are revisited in curriculum to enhance retention, avoid reteaching of topic ◦ Vocabulary terms ◦ Rhetorical appeals, logical fallacies ◦ Genre features (different kinds of poetry, types of text) ◦ Capitalization rules
Graphic Organizers and **Details Deep Dive** Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Readiness Levels • Student Interests	*Graphic Organizers* • Guide student discussions and help organize ideas • See bigger-picture connections • Work for essentially any topic you are teaching • Allow students with visual strengths to take appropriate notes *Details Deep Dive* • Text evidence to support character assessment, inferences about plot, development of theme • Any time you are working on inference, the details deep dive can help students see why they make certain inferences



©2024 Riverside Assessments, LLC. All rights reserved.

Teaching Tools for ELAR and *Ability Profiles*



Q+

Characteristics, Relative Strengths, Instruction

- Exhibit abstract thinking at an early age
- Score higher than expected on math and language (skilled at pattern recognition)
- Computation
- ***Identify patterns and reason with abstraction***
- ***Computer skills*** (organizing data, creating graphs, using computational logic in robotics)
- ***Strong grammar knowledge***
- Enjoy math puzzles and challenges
- Present math solutions or data interpretations verbally
- Collaborative projects (using statistics, exploring evidence and claims)
- Provide opportunities for these students to contribute at high levels to group projects that require math skills

ELAR Applications

- Encourage students to see patterns in text, like character behaviors, setting changes, dialogue patterns, etc. Why are these patterns present? What do they mean?
- Use graphic organizers to show plot structures or sequences that will support inference.
- Utilize pattern strengths and organizational skills in grammar instruction: How do you see commas being used in these sentences and why? What role can sentence structure play in how we pose an argument?
- Utilize brain teasers that play with verbal concepts (puns, new terms, semantics) to entice their critical thinking skills.
- Develop projects or group tasks where they can work in both ELAR and mathematics (statistics, trends, patterns, etc.).

Possible Challenges

- May struggle with divergent thinking tasks or open-ended questions
- May not be particularly expressive in writing, sound almost robotic
- May not be enticed to debate about characters, opinions, or anything that isn't factual
- May not respond well to hypothetical situations
- May not enjoy tasks of a creative domain variety, preferring to solve problems that have correct and justifiable answers
- May not enjoy interdisciplinary tasks

ELAR Applications

- Offer guidance and sequences of thinking tasks for open-ended prompts and questions.
- Try to connect fictional elements to real-world situations to promote relevance and meaningful study.
- When possible, offer connections to mathematics and other Q+ reasoning courses.

©2024 Riverside Assessments, LLC. All rights reserved.

V+

Characteristics, Relative Strengths, Instruction	ELAR Applications
• Strong in all academic areas except math computation • Perform well when asked to write or discuss ideas • Good memories for arbitrary sequences (sounds, letters, words, and events) • Excels in spelling; knowledge of syntax and grammar; learning other languages; and remembering dialogue, prose, and poetry • Challenge with special “higher demand” reading/writing assignments • ***Use verbal reasoning in math*** • ***Restate and explain math expressions*** • ***Explain errors in incorrect answers*** • Easier to memorize formulas than build more abstract conceptual systems (abstract leads to transferring math knowledge to unfamiliar domains)	• Offer regular discussion opportunities and/or reflection tasks (journals, responses). • Incorporate multi-genre reading and writing when possible, and if aiming for GT/HiCAP, intensify the reading/writing demand. (rigid requirements for a poem like iambic pentameter, or read a text with more nuance and subtlety). • If answering a question with a “right” or “wrong” answer, allow students to justify their thinking (think multiple-choice tests, quizzes). • Utilize acronyms to help students memorize parts of speech, approaches to writing, poetic analysis (FANBOYS for conjunctions). • Offer extensions for increased challenge: when teaching metaphors, offer these students the opportunity to work with extended metaphors.
Possible Challenges	**ELAR Applications**
• May struggle with calculations and math computation • May feel frustrated by questions with a single correct answer • May not enjoy concrete problem solving • May not respond well to limitations/ requirements • May not succeed in offering details or facts to support contentions	• Allow students to talk through misunderstandings, or write about them as part of the post-assessment reflection. • On multiple-choice assessments, consider offering a space for explanation for how they arrived at the answer chosen. • When possible, make assignments that are open with few limitations to promote free thinking.

©2024 Riverside Assessments, LLC. All rights reserved.

NV+

Characteristics, Relative Strengths, Instruction	ELAR Applications
• Good at reasoning with spatial representations • Effectively solve new problems • Excel at drawing and sculpting (visual arts) • Prefer visual mental models (with connecting concepts) • Graphics and maps • Concrete application • Prefer detailed illustrations for unfamiliar content • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • ***Create drawings when solving math problems*** • Concept maps for note taking • ***Create mental models during reading*** • Hands-on learning, physical application for problem solving • ***Descriptive (rather than narrative prose) for teaching writing, illustrate scene*** • Skilled in visual arts	• Incorporate visual representations of concepts, terms, characters, plot sequences, as often as possible, and encourage students to create their own visual representations as well through storyboards, comic strips, sketches in a reflection notebook, etc. • Have notes taken as storyboards in class, or allow graphic organizers for images that support notes. • Consider a graphic novel as an acceptable outside or independent reading choice. • Offer opportunities for business writing, informative texts, blogs in place of storytelling assignments when possible to engage technical writing capacity. • As often as possible, allow scaffolding through interdisciplinary connections that the students generate surrounding an essential question, a theme, or a conflict. • Give them real-world hypothetical scenarios to put to use their problem-solving skills within the world of ELAR. (For example, a passage with no punctuation and have them fill it in. What if we couldn't understand literary devices and read only as literalists? How could this persuasive text be more effective?)
Possible Challenges	**ELAR Applications**
• May find frustration with highly analytical tasks that do not incorporate open-ended thinking • May struggle with structured notes or note taking, outlining • May feel challenged by creative writing or open prompts • May not learn well by reading alone • Spelling and verbal fluency are challenging	• Try to avoid arbitrary limitations on tasks. • Use technical and business writing to avoid creativity blocks. • Attempt to offer visuals in instructions rather than only text instructions. • Avoid heavy penalties for spelling and fluency when possible.

Note: Items in bold italics are crossover skills that lend to interdisciplinary strengths and applications.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

ELAR Companion Overview



What are the *Ability Profiles*?

Ability Profiles as identified by *Cognitive Abilities Test*™ (*CogAT*®) are the relative strengths and weaknesses of learners: Verbal (V+), Quantitative (Q+), and Nonverbal (NV+). We can use this data to drive our decision making and differentiation implementation to yield improvement in performance in any English Language Arts and Reading (ELAR) course from kindergarten to seniors taking Advanced Placement® (AP) or International Baccalaureate® (IB) classes.

Why use the *Ability Profiles*?

Utilizing *Ability Profiles* can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong Verbal reasoning tend to do well in ELAR classes, educators can't neglect the other two *Ability Profiles* that are most definitely in your classes: Nonverbal and Quantitative. There are ways to use the strengths of each profile to guide students toward success in ELAR. This requires effective differentiation in lesson design and conscientious planning.

When we employ the relative strengths and weaknesses identified in the batteries, we can eliminate unintended barriers to learning and isolate the new content more effectively. Additionally, because we can work in a "strengthen and stretch" approach, we can facilitate improved *thinking*. Critical thinking is such an important part of our lives in every facet. We use critical thinking every day to guide our actions, decisions, morals, and beliefs. When our courses encourage and improve critical thinking, we prepare students for any life path they may choose.

©2024 Riverside Assessments, LLC. All rights reserved.

Can you give me some examples?

For example, if you are teaching poetry, and you have students in your classroom who are Q+, you can expect them to struggle a bit with nuance and possibly artistic expression, but to excel in the meter, rhythm, rhyme scheme, and other such technical elements of poetry that better align with their thinking strengths. You can use those to strengthen and then stretch their appreciation for the art. Additionally, these learners respond well to graphic organizers to categorize learning and pattern recognition, such as character behaviors or choices in a story or novel.

In another example, if you are teaching a lesson on punctuation, and you have NV+ students in your classroom, give them real-world hypothetical scenarios to put to use their problem-solving skills within the world of ELAR (e.g., provide a passage with no punctuation and have them fill it in, or give them a piece of poetry and ask them to punctuate it to change the meaning). NV+ learners are strong in the technical elements of language but may struggle more in the expressive components. NV+ learners also benefit from interdisciplinary opportunities to create unique and meaningful scaffolds for new learning.

Summary

- We have all three *Ability Profiles* in all our classes and should know which students have which strengths and weaknesses.
- We can use these *Ability Profiles* to make strategic decisions about differentiation and increase our effectiveness in lessons.
- We can use these *Ability Profiles* to eliminate unintended barriers to learning and increase the students' abilities to think critically.

Additional Resource

The Thinking Student's Guide to College



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

ELAR Companion Planning Guide



Objective

To leverage *CogAT Ability Profiles* to provide differentiated English Language Arts instruction that meets the diverse needs of all students.

Step-by-Step Planning Process:

To effectively integrate *CogAT Ability Profiles* into social studies instruction, ensuring that all students are engaged and challenged according to their cognitive strengths.

1. Review and Analyze *Ability Profiles*:

a. Determine students' strengths in Verbal, Nonverbal, and Quantitative reasoning.
b. Use this data to plan instructional strategies and support.

2. Design Differentiated Instructional Units:

a. **Content Differentiation:**
   i. Choose diverse texts that cater to various *ability profiles* (e.g., complex novels for Verbal learners, graphic novels for Nonverbal learners).

b. **Process Differentiation:**
   i. Plan activities like literature circles, visual storytelling, or argumentative writing based on students' strengths.

c. **Product Differentiation:**
   Offer choices for final projects, such as creating a digital story, writing a critical essay, or developing a multimedia presentation.

3. Plan for Vertical Alignment:

a. Design units that build upon previous knowledge and prepare students for more complex texts and tasks in higher grades.

4. Implement Flexible Grouping:

a. Group students strategically for activities like peer editing or group discussions, balancing their strengths to maximize learning.

©2024 Riverside Assessments, LLC. All rights reserved.

5. Assessment Planning:

a. Develop assessments that include varied response options like oral presentations, visual projects, and written responses to assess understanding.

6. Ongoing Reflection and Adjustment:

a. Use student feedback and assessment data to refine instructional approaches and groupings.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the ELAR Insights Companion



1. *School Leaders/Administrators*

Implementation: Administrators can use the ELAR Companion document to guide teachers in differentiating instruction based on students' cognitive abilities and learning profiles (Verbal, Nonverbal, Quantitative). This helps ensure that all students have access to appropriately challenging and supportive learning experiences in English Language Arts and Reading (ELAR).

How to Use:

- **Professional Development:** Conduct training sessions to familiarize teachers with the *Ability Profiles* (Verbal, Nonverbal, Quantitative) and how to integrate these profiles into lesson planning. For example, focus on using Verbal reasoning for literature analysis, Nonverbal reasoning for visual storytelling, and Quantitative reasoning for logical organization of arguments and essay structures (ELAR Companion).
- **Classroom Observations:** Utilize the *CogAT* Informed Differentiation Walkthrough Form to observe classrooms and provide feedback. Look for evidence of differentiation, such as teachers using various modes of instruction (e.g., visual aids, graphic organizers) and strategic groupings based on student profiles (e.g., pairing a strong Verbal learner with a Nonverbal learner for a group discussion on character analysis) (ELAR Companion).
- **PLC Guidance:** Facilitate discussions in PLCs around the application of differentiation strategies. Encourage teachers to explore how to respond when students struggle (e.g., by offering re-teaching with scaffolds like graphic organizers for Nonverbal learners) or excel (e.g., providing advanced literature circles for strong Verbal learners) (ELAR Companion).

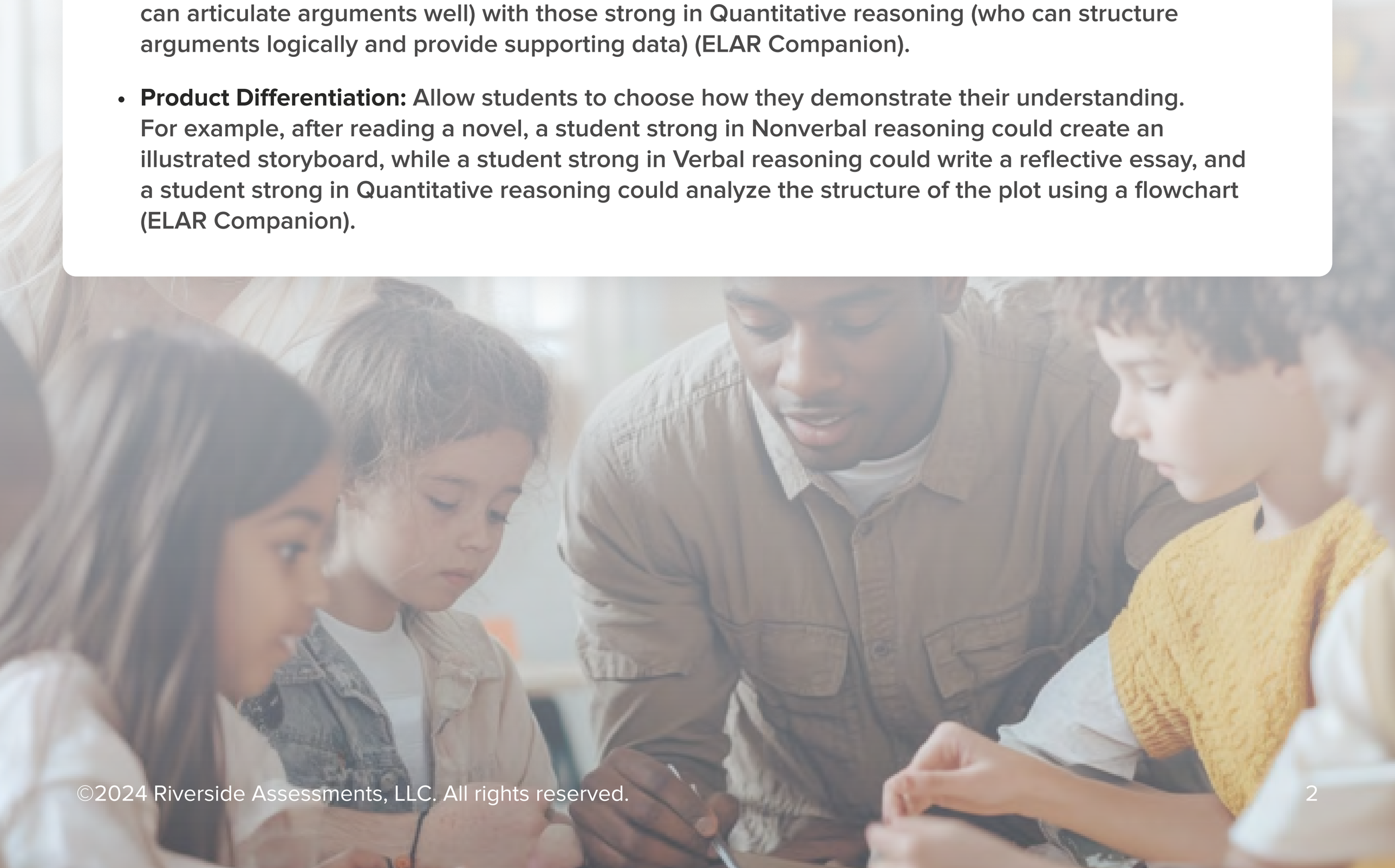
©2024 Riverside Assessments, LLC. All rights reserved.

2. *ELAR Teachers*

Implementation: Teachers can use the *ability profiles* to differentiate instruction across content, process, and product, ensuring that all students are engaged and challenged according to their cognitive strengths.

How to Use:

- **Content Differentiation:**
  - For **Verbal Learners (V+):** Offer more opportunities for discussion, debate, and written expression. Use complex texts for in-depth analysis and encourage students to explore themes, characters, and literary devices through reflective journals and Socratic seminars (ELAR Companion).
  - For **Nonverbal Learners (NV+):** Incorporate visual elements such as graphic organizers, storyboards, and visual metaphors. For example, when teaching plot structure, have these students create a visual timeline or comic strip that illustrates the main events of a story (ELAR Companion).
  - For **Quantitative Learners (Q+):** Emphasize logical structures and patterns in texts, such as identifying recurring themes or analyzing the structure of arguments in persuasive texts. Provide opportunities to create charts or diagrams that break down the logical flow of a narrative or argument (ELAR Companion).
- **Process Differentiation:** Use strategic grouping to leverage the strengths of different learners. For example, during a project on persuasive writing, pair students strong in Verbal reasoning (who can articulate arguments well) with those strong in Quantitative reasoning (who can structure arguments logically and provide supporting data) (ELAR Companion).
- **Product Differentiation:** Allow students to choose how they demonstrate their understanding. For example, after reading a novel, a student strong in Nonverbal reasoning could create an illustrated storyboard, while a student strong in Verbal reasoning could write a reflective essay, and a student strong in Quantitative reasoning could analyze the structure of the plot using a flowchart (ELAR Companion).



©2024 Riverside Assessments, LLC. All rights reserved.

3. *Curriculum Designers*

Implementation: Design ELAR curriculum units that are differentiated by incorporating varied activities and assessments that align with students' cognitive profiles. Ensure that the curriculum is vertically aligned, with increasing complexity as students advance through grades.

How to Use:

- **Vertical Alignment:** Develop activities that become progressively more complex. For instance, for teaching plot structure:
  - **Elementary Level:** Focus on basic plot elements (beginning, middle, end) with simple stories.
  - **Middle School:** Introduce more complex elements like climax and conflict, using texts with deeper themes.
  - **High School:** Analyze nonlinear plot structures and advanced literary techniques like in medias res or epistolary formats (ELAR Companion).
- **Inquiry Learning and CAP Activities:** Include activities that encourage creative, analytical, and practical thinking. For example, have students engage in an inquiry-based project where they research a controversial issue in literature (e.g., censorship) and present their findings in a format of their choice (debate, written report, or multimedia presentation) (ELAR Companion).
- **Interdisciplinary Connections:** Incorporate cross-curricular activities that connect ELAR with other subjects. For example, a unit on dystopian literature could include connections to social studies (historical contexts of censorship and totalitarian regimes) and science (ethical implications of technology and surveillance) (ELAR Companion).

4. *Special Education Teachers*

Implementation: Use the document’s differentiation strategies to provide targeted support for students with diverse learning needs by adapting instruction to align with their cognitive strengths and areas of need.

How to Use:

- **Tiered Instruction:** Offer tiered versions of assignments to match student ability levels. For example, when working on a character analysis, provide a basic graphic organizer with prompts for struggling students, while allowing advanced students to write a detailed character essay with minimal guidance (ELAR Companion).
- **Scaffolding:** Use visual supports, like story maps or character charts, for Nonverbal learners who may struggle with abstract concepts. For students with IEPs or 504 plans, adapt the content by simplifying language or providing step-by-step instructions for complex assignments (ELAR Companion).
- **Flexible Assessments:** Use alternative assessments that cater to students’ strengths. For instance, allow students to demonstrate understanding through multimedia presentations, visual art, or recorded explanations rather than traditional essays or tests (ELAR Companion).

©2024 Riverside Assessments, LLC. All rights reserved.

5. *Gifted and Talented Coordinators*

Implementation: Develop advanced coursework and enrichment opportunities that challenge gifted students by leveraging their cognitive strengths, promoting deeper exploration, and encouraging independent learning.

How to Use:

- **Advanced CAP Activities:** Create complex, interdisciplinary projects that require students to think creatively, analytically, and practically. For example, have students compare the rhetorical strategies used in different types of texts (e.g., political speeches, advertisements, literature) and present their findings through a multimedia presentation (ELAR Companion).
- **High-Level Inquiry Tasks:** Design inquiry-based projects that allow students to explore advanced literary theories or controversial topics in literature, such as exploring the role of dystopian fiction in critiquing society. Provide opportunities for independent research and encourage presentations in diverse formats, such as TED-style talks or research papers (ELAR Companion).
- **Extended Literary Analysis:** Offer opportunities for students to engage in extended analysis of complex texts. For example, while studying Shakespeare, students could explore different interpretations of a play across time periods and cultures, and then write or present a comparative analysis (ELAR Companion).

By leveraging the differentiation strategies, *ability profile* data, and a variety of instructional tools provided in the **ELAR Companion**, educators can create engaging, supportive, and challenging learning environments that meet the diverse needs of their students. This ensures a more personalized approach to teaching ELAR, promoting both academic growth and a deeper appreciation for literature and language.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Mathematics Companion



Introduction

Utilizing *Ability Profiles* can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong **Quantitative reasoning (Q+)** tend to do well in mathematics classes, educators can't neglect the other two *Ability Profiles* that are most definitely in your classes: **Verbal (V+)** and **Nonverbal (NV+)**. There are ways to use the strengths of each profile to guide students toward success in mathematics. This requires effective differentiation in lesson design and conscientious planning. Each lesson sample provided offers differentiation approaches that will utilize all three *Ability Profiles* so you can reach and grow all students.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *Cognitive Abilities Test*™ (*CogAT*®) data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms?

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson —if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8 (Mathematics)

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner's Multiple Intelligences; scaffolding/ personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make *Ability Profiles* from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: Is there a lesson plan template they can follow? A decision guide?

> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind.

Q: How does this work within our existing curriculum? (Which parts are nonnegotiable, and where do teachers have creative license?)

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. **Verbal (V+)**, **Nonverbal (NV+)**, and **Quantitative (Q+)** thinking skills are universally applicable and will work embedded in all content areas. For mathematics, you will utilize the curriculum scope and sequence you already use but may find you make adjustments to specific lesson designs based on these *Ability Profile* options. You can use any of the Common Core or Texas Essential Knowledge and Skills (TEKS) objectives to build *Ability Profile* informed lessons. The chart on page 4 shares some content specific application ideas to use in your existing curriculum.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart below shows you some of the vertical alignment you can find in these resources. For example, in the **Q+ Strength** column, the "Right or Wrong?" Graphic Organizer is listed for all age groups, from K-2 up through 9–12. The organizer remains about the same, but increased in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What does this mean for mathematics?

A: As the learning strategies from the toolkit (see chart) increase in sophistication, so will the complexity of the content you are teaching, making it an appropriate and consistently enhanced cognitive challenge for all learners. A creative, analytical, practical (CAP) activity for 1st Grade might involve using one of the basic four math operations (addition, subtraction, multiplication, and division) with whole numbers, where a CAP activity for 8th Grade can still address the four basic operations, but will include both rational and irrational numbers with an emphasis on value and estimation. The Conversational Roundtable for a 2nd Grade class could be about fractions, while the Conversational Roundtable for 7th Grade could be about fractions as well, but using more iconic combinations, and the Conversational Roundtable for 11th Grade could address rational functions as fractions and utilize more complicated iconic pathways.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

Q: How will this help with PLC questions 3 and 4?

A: Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS (multi-tiered system of supports), re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.

Sometimes, students who are struggling are supported through Individualized Education Programs (IEPs) or Section 504 accommodations and modifications, but often they are not. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is the educator's job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.

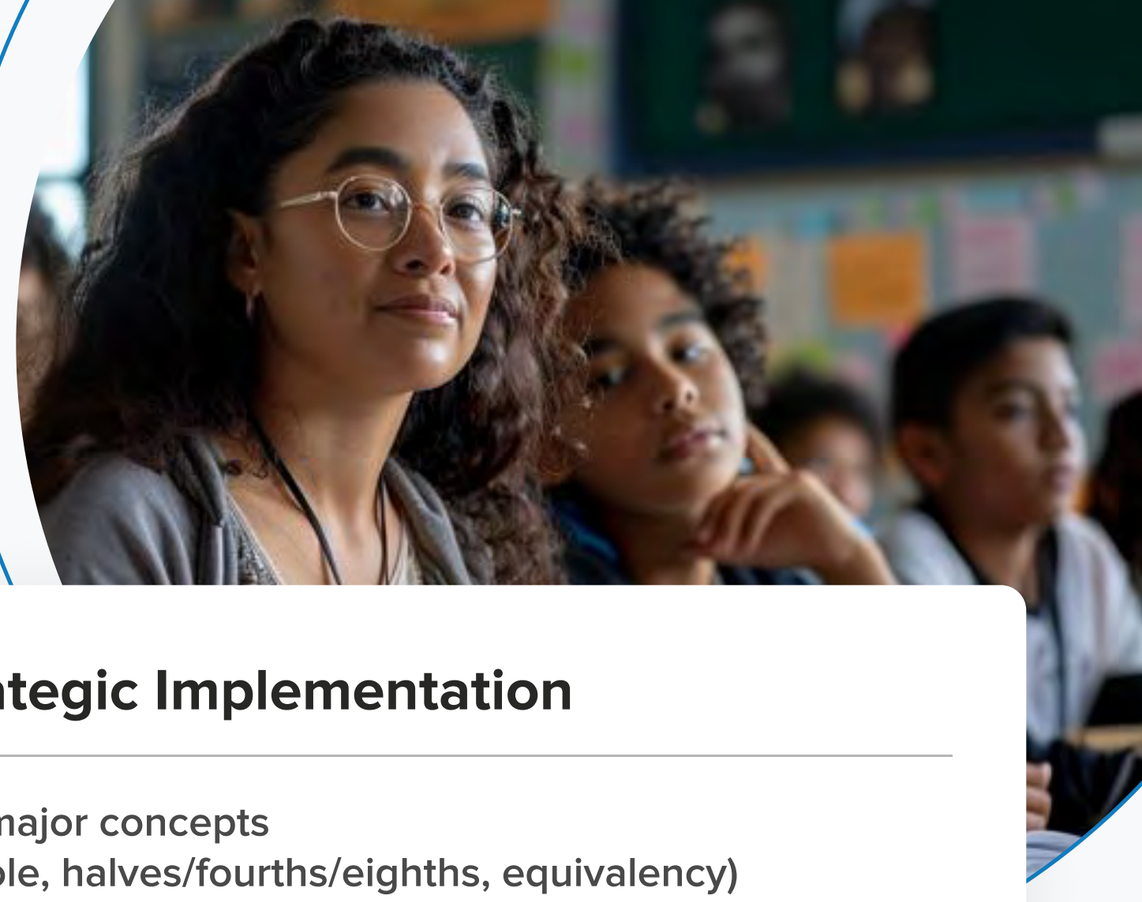
For PLC Question 4, there are resources embedded and strategies shared in each lesson that offer guidance for increasing the cognitive challenges for students who are ready for the challenge. You will see more complicated iconic intersections and pathways as well as opportunities for unique and innovative approaches through Inquiry Learning, Think Like a Disciplinarian, and CAP Activities. Essentially, any activity you use can be enhanced to satisfy the PLC Question 4 if you plan for it in advance and use these resources strategically.

PLC Questions:

1. What do I want students to learn?
2. How will I know they learned it?
3. What will I do if they don't learn it?
4. What will I do if they already know it?

©2024 Riverside Assessments, LLC. All rights reserved.

Mathematics Teaching Applications



Application	Sample Uses/Strategic Implementation
Conversational Roundtables Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles	• Learning new terms/major concepts ◦ Fractions (part, whole, halves/fourths/eighths, equivalency) ◦ Rational numbers (natural numbers, whole numbers, integers) ◦ Measurement (units, perimeter, area, unit rates, proportions) ◦ Functions (linear/quadratic/exponential, domain, range, rate of change) ◦ Data analysis (bar graphs, dot plots, circle graphs, measures of center) • Posing an essential question ◦ How do we interact with fractions in our daily lives? ◦ How does the type of data presented influence the way data is displayed? ◦ How are verbal ideas translated into mathematics? ◦ Was mathematics invented or discovered? • Promoting academic dialogue about a controversial or definitive statement ◦ Squares are always rectangles. ◦ It is more likely for a person to be involved in a car crash than a plane crash. ◦ A negative number never has a positive cube root. ◦ Calculators are always the easiest way to solve a math problem.
Inquiry Learning Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Readiness Levels • Student Interests	• When presenting a new term or concept (negative numbers, similar shapes, transformations, Pythagorean Theorem, sequences and series) • When offering projects (students choose questions to tackle, pose an essential question they need to address, etc.) • When introducing a new concept, hook students through an engaging dive into a related topic ◦ Watching mathematical card tricks before solving equations ◦ Fastest roller coasters in the world in preparation for learning about derivatives ◦ Would you rather have a penny that doubles each day for a month or 1 million dollars? (in preparation for learning about interest)

©2024 Riverside Assessments, LLC. All rights reserved.

Application	Sample Uses/Strategic Implementation
3-2-1 Exit Ticket Differentiation Type • Product Differentiation Approach • Learning Profiles	• Conclusion of any lesson ◦ Important concepts from an exploratory math activity ◦ Process for solving for an unknown quantity ◦ Methods for calculating slope (from a table, graph, ordered pairs) ◦ Rules for writing an equation (from a verbal description, of a line, etc.) ◦ Characteristics of functions ◦ Classifying geometric shapes (polygons, quadrilaterals, etc.)
CAP Activity Differentiation Type • Process Differentiation Approach • Learning Profiles	• Choose topics that are revisited in curriculum to enhance retention; avoid reteaching of topic ◦ Vocabulary terms ◦ Order of operations ◦ Solving one-variable equations (one-step, two-step, multi-step) ◦ Properties of exponents
Graphic Organizers and **Details Deep Dive** Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Readiness Levels • Student Interests	*Graphic Organizers* • Guide student discussions and help organize ideas • See bigger-picture connections • Work for essentially any topic you are teaching • Allow students with visual strengths to take appropriate notes *Details Deep Dive* • Classifying quadrilaterals using key features of the sides, angles, and diagonals (What can we infer if a quadrilateral has 4 equal sides, 4 equal angles, and diagonals that bisect each other?) • Any time you are working on inference, the details deep dive can help students see why they make certain inferences



©2024 Riverside Assessments, LLC. All rights reserved.

Teaching Tools for Mathematics and *Ability Profiles*



Q+

Characteristics, Relative Strengths, Instruction	Mathematics Applications
• Exhibit abstract thinking at an early age • Score higher than expected on math and language (skilled at pattern recognition) • Computation • ***Identify patterns and reason with abstraction*** • ***Computer skills*** (organizing data, creating graphs, using computational logic in robotics) • ***Strong grammar knowledge*** • Enjoy math puzzles and challenges • Present math solutions or data interpretations verbally • Collaborative projects (using statistics, exploring evidence and claims) • Provide opportunities for these students to contribute at high levels to group projects that require math skills	• Encourage students to discuss and write about patterns in numbers, expressions and equations. What patterns are present, and why do they exist? Where do we encounter similar patterns in mathematics and other content areas? How would you write an equation to represent the situation? • Incorporate finding multiple ways to solve problems. What is another method to solve that problem? How could the situation be represented in another way? Would it be best to use a table, a graph, or an equation to represent the data in this scenario? You solved the problem by changing the percent to a decimal and multiplying; what is another approach you could have taken? • Include real-world scenarios and opportunities for students to demonstrate understanding of topics (calculating sales tax when multiplying decimals, which shipping container would be best for packaging popcorn—bag, box, or cone—when learning about volume, etc.) • Utilize math and logic problems to entice critical-thinking skills (logic grid puzzles, word and number challenges, number sentences without operation symbols or equality symbols, etc.) • Develop projects or group tasks where students present their mathematical thinking using technology or other visual aids.

©2024 Riverside Assessments, LLC. All rights reserved.

Q+

Possible Challenges	Mathematics Applications
• May struggle with divergent thinking tasks or open-ended questions • May not be particularly expressive in writing, sound almost robotic • May not be enticed to debate about characters, opinions, or anything that isn't factual • May not respond well to hypothetical situations • May not enjoy tasks of a creative domain variety, preferring to solve problems that have correct and justifiable answers • May not enjoy interdisciplinary tasks	• Offer sequences of thinking tasks or scaffolding for open-ended questions. • Utilize familiar content when presenting hypothetical situations, and ensure that expectations are clearly stated. • Assign interdisciplinary tasks where students can naturally connect mathematics with other content areas (personal financial literacy, statistics, science investigations, etc.)



©2024 Riverside Assessments, LLC. All rights reserved.

V+

Characteristics, Relative Strengths, Instruction	Mathematics Applications
• Strong in all academic areas except math computation • Perform well when asked to write or discuss ideas • Good memories for arbitrary sequences (sounds, letters, words, and events) • Excels in spelling; knowledge of syntax and grammar; learning other languages; and remembering dialogue, prose, and poetry • Challenge with special “higher demand” reading/writing assignments • ***Use verbal reasoning in math*** • ***Restate and explain math expressions*** • ***Explain errors in incorrect answers*** • Easier to memorize formulas than build more abstract conceptual systems (abstract leads to transferring math knowledge to unfamiliar domains)	• Offer regular reflection tasks and/or discussion opportunities (math journal, open-ended response questions, etc.) • Allow students to justify their thinking when working problems with a “correct” or “incorrect” answer. (For example, when answering a multiple-choice question, provide space for students to explain their thought process for arriving at their answer.) • Include frequent opportunities for students to discuss and/or journal about connections between common English words and their meanings in mathematics (“is” often means “equal,” “of” often means “multiply,” etc.) and how this is used to directly translate word problems into expressions or equations (e.g., Jane wants to know what number is 30% of 100. In math this means, $x = 0.30 \times 100$.) • Provide logic problems and word challenges to enhance problem-solving and critical-thinking skills. • Incorporate error analysis opportunities where students must spot, explain, and correct errors in completed math problems. • Utilize acronyms and mnemonics to help students memorize mathematical sequences and approaches to solving specific problems (PEMDAS for order of operations, FOIL for multiplying binomials, SOH-CAH-TOA for trigonometric ratios, etc.)
Possible Challenges	**Mathematics Applications**
• May struggle with calculations and math computation • May feel frustrated by questions with a single correct answer • May not enjoy concrete problem solving • May not respond well to limitations/ requirements • May not succeed in offering details or facts to support contentions	• Allow students to talk through misconceptions or write about them as a reflection in their math journal. • Consider offering space for students to explain their thought process for arriving at answers on multiple-choice assessments. • When possible, create assignments that include open-ended responses to promote free thinking. (For example, ask questions that have more than one correct answer, or provide students with an answer and have them come up with a question, etc.)

©2024 Riverside Assessments, LLC. All rights reserved.

NV+

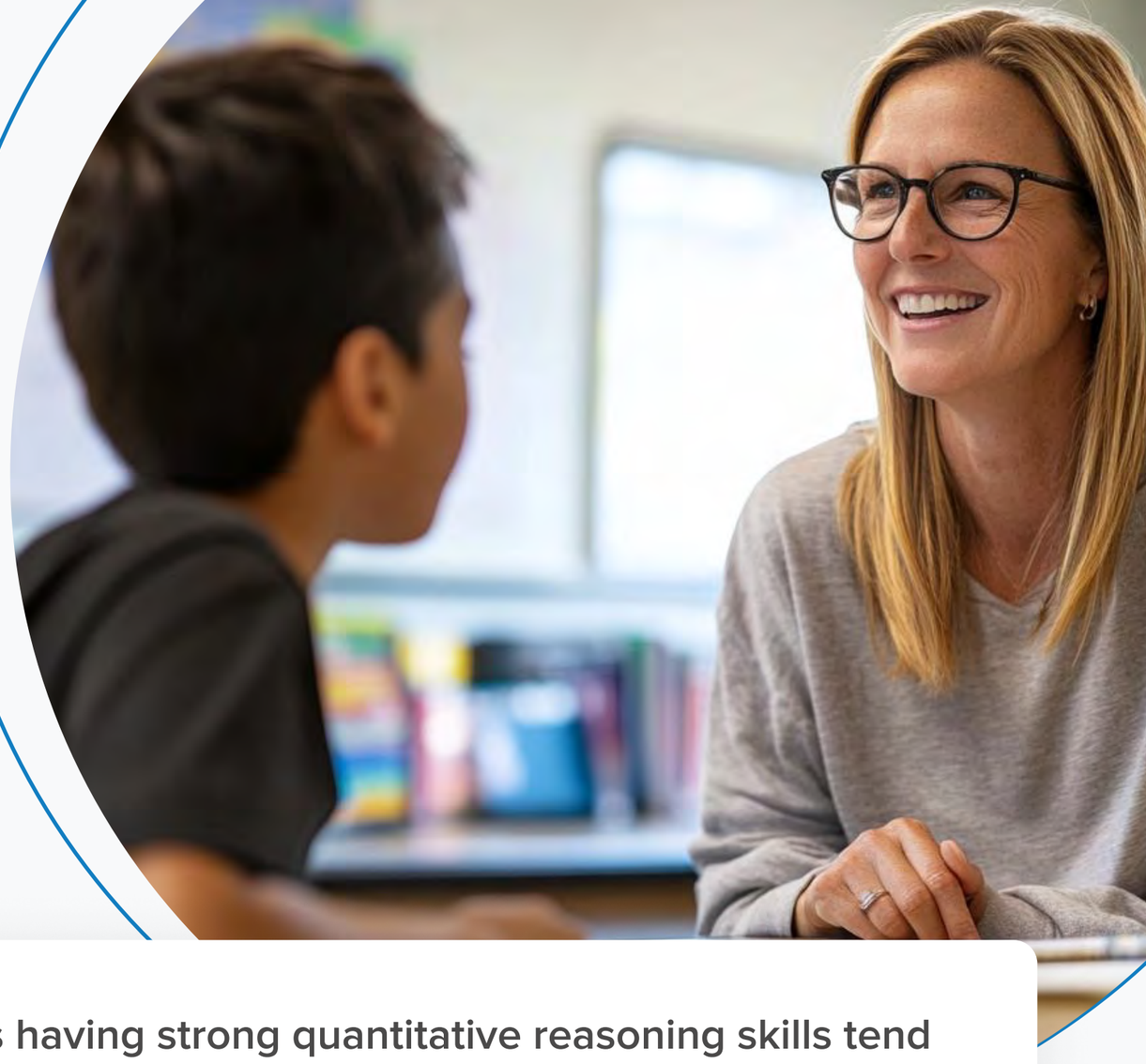
Characteristics, Relative Strengths, Instruction	Mathematics Applications
• Good at reasoning with spatial representations • Effectively solve new problems • Excel at drawing and sculpting (visual arts) • Prefer visual mental models (with connecting concepts) • Graphics and maps • Concrete application • Prefer detailed illustrations for unfamiliar content • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • ***Create drawings when solving math problems*** • Concept maps for note taking • ***Create mental models during reading*** • Hands-on learning, physical application for problem solving • ***Descriptive (rather than narrative prose) for teaching writing, illustrate scene*** • Skilled in visual arts	• Incorporate visual representations of math concepts and vocabulary (anchor charts, concept maps, etc.) as often as possible. • Provide concept maps for note-taking and encourage students to create graphics in their math notebook to organize their thoughts around a new topic. • Include frequent opportunities for students to create or complete analogies about the content (Inverse operations: addition is to multiplication as subtraction is to _____; measurement: 12 inches are to 1 foot as 36 inches are to _____, etc.) • For real-world examples, encourage students to begin by creating a sketch. If the problem mentions multiplication, the student could draw an array. If the problem mentions a right triangle, the student could draw a right triangle and label the parts with any information given in the problem. • Offer opportunities for alternative assignments that incorporate the visual arts (create a graphic or comic strip about a topic that includes at least one detailed example in lieu of completing 10 practice problems, create a scale model of something in lieu of taking a formal assessment, etc.) • Utilize interactive tools to help connect and solidify abstract ideas (manipulatives, graphing calculators, etc.)
Possible Challenges	**Mathematics Applications**
• May find frustration with highly analytical tasks that do not incorporate open-ended thinking • May struggle with structured notes or note taking, outlining • May feel challenged by creative writing or open prompts • May not learn well by reading alone • Spelling and verbal fluency are challenging	• Try to avoid assignments involving only computational math problems. • Allow for open-ended note-taking, where students can choose to copy exactly what the teacher writes or have the flexibility to create their own format. • Attempt to offer visuals or worked examples in instructions rather than only text instructions. • Avoid heavy penalties for spelling and fluency.

Note: Items in bold italics are crossover skills that lend to interdisciplinary strengths and applications.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Math Companion Overview



It is commonly known that students who are assessed as having strong quantitative reasoning skills tend to perform well in math classes, while students who are assessed as having strong verbal and nonverbal reasoning skills may struggle with traditional math teaching methods. As educators, we must strive to level the playing field, so all students are able to experience success and growth in the math classroom.

The Math Insights Companion is a resource designed to help educators make math accessible to all students by capitalizing on unique student strengths and challenges. This resource focuses on the three *Ability Profiles*: Quantitative (Q+), Verbal (V+), and Nonverbal (NV+), and exists to assist educators in lesson design and differentiation in the math classroom. By focusing on the preidentified strengths and challenges of each individual *Ability Profile*, instructional leaders and educators can provide experiences resulting in growth and success for all math learners.



Catering to each individual *Ability Profile* requires effective differentiation in lesson design and conscientious planning. As a support, the Math Insights Companion provides specific math teaching applications and tools to be used with each of the three *Ability Profiles*. The information in this resource is helpful for both leading conversations within professional learning teams and for teachers to use as a direct resource during lesson design.

The Math Insights Companion includes applications designed to guide teachers in using their students' strengths to support and challenge them in the classroom. Teachers will choose applications and differentiate the content, process, and/or product according to student strengths and potential challenges. By utilizing *Ability Profiles*, students who think alike will have opportunities to work together, creating more effective academic collaboration.

©2024 Riverside Assessments, LLC. All rights reserved.

Additionally, the Math Insights Companion includes specific teaching tools for math instruction. These tools are linked to individual student strengths based on the *Ability Profiles*, but they also include tools to help support possible challenges students tend to face in their ability areas. The information is used by teachers to create unique learning opportunities. For example, students with strong NV+ reasoning skills may initially struggle with highly analytical tasks. The Math Insights Companion offers tools to help teachers navigate analytical tasks so that they are more accessible to these learners. For this scenario, instead of moving straight into setting up proportions to solve measurement problems, it is suggested for students to explore measurement problems through analogies first. Or, instead of moving directly into solving one-variable equation problems using traditional methods of solving, the Math Insights Companion suggests first providing an opportunity for students with a NV+ strength to create a visual representation of the topic, such as an anchor chart or concept map.

Instructional leaders and teachers often need support in meeting the needs of diverse learners and stretching student thinking. The Math Insights Companion is a great resource for experienced and inexperienced educators, as the information included provides foundational supports to help teachers differentiate lessons for students with varying strengths and challenges. Utilizing the teaching applications and tools in this resource will produce authentic academic experiences that result in growth and success for all math students.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Math Companion Planning Guide



Objective

To use *CogAT Ability Profiles* to create a math curriculum that is accessible, challenging, and engaging for all students, while supporting diverse learning needs.

Step-by-Step Planning Process:

To effectively integrate *CogAT Ability Profiles* into social studies instruction, ensuring that all students are engaged and challenged according to their cognitive strengths.

1. Analyze *Ability Profiles*:

a. Examine student data to understand their strengths in Quantitative, Verbal, and Nonverbal reasoning.
b. Use this data to identify areas for support and enrichment.

2. Plan Tiered Math Activities:

a. **Tier 1 (Core Instruction):**
   i. Design standard math lessons that integrate visual, verbal, and quantitative strategies.

b. **Tier 2 (Small Group Instruction):**
   i. Develop targeted activities for students who need extra support, such as guided problem-solving sessions or visual aids.

c. **Tier 3 (Individualized Support):**
   Plan intensive, one-on-one instruction for students with significant learning gaps.

3. Develop Differentiated Lesson Plans:

a. Incorporate visual representations, hands-on activities, and real-world applications to cater to different profiles.
b. Plan lessons with multiple entry points to ensure accessibility for all students.

4. Create Flexible Assessments:

a. Design tiered assessments that allow students to demonstrate understanding in various ways, such as oral explanations, visual models, or traditional tests.

©2024 Riverside Assessments, LLC. All rights reserved.

5. Implement Strategic Grouping:

a. Use *ability profiles* to form groups for collaborative problem-solving, ensuring balanced groups with complementary strengths.

6. Monitor Student Progress:

a. Use formative assessments and observations to track progress and make instructional adjustments as needed.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the Mathematics Insights Companion



1. *School Leaders/Administrators*

Implementation: Administrators can use this document to promote data-driven instruction in mathematics by helping teachers utilize *CogAT Ability Profiles* (Quantitative, Verbal, Nonverbal) to inform their teaching practices.

How to Use:

- **Professional Learning Communities (PLCs):** Guide PLCs to use the differentiation strategies outlined in the document to answer questions such as "What will we do if students don't learn?" or "What will we do if they already know the material?" Administrators can facilitate sessions where teachers collaborate on creating intervention plans using the suggested strategies like RTI, flexible grouping, and re-teaching (Math Companion).
- **Walkthrough Observations:** Use the ***CogAT* Informed Differentiation Walkthrough Form** to assess how well teachers are applying differentiation strategies. During observations, look for evidence of strategic student groupings based on *ability profiles*, the use of multiple instructional modes, and tasks designed for students' cognitive strengths (e.g., using pattern-based tasks for Quantitative learners, visual aids for Nonverbal learners) (Math Companion).
- **Data Analysis:** Lead discussions on how to use *CogAT* data to identify trends and areas for improvement in mathematics instruction. For example, analyze whether students with strong Nonverbal skills but weak Quantitative skills are struggling with certain types of math problems and provide targeted support.

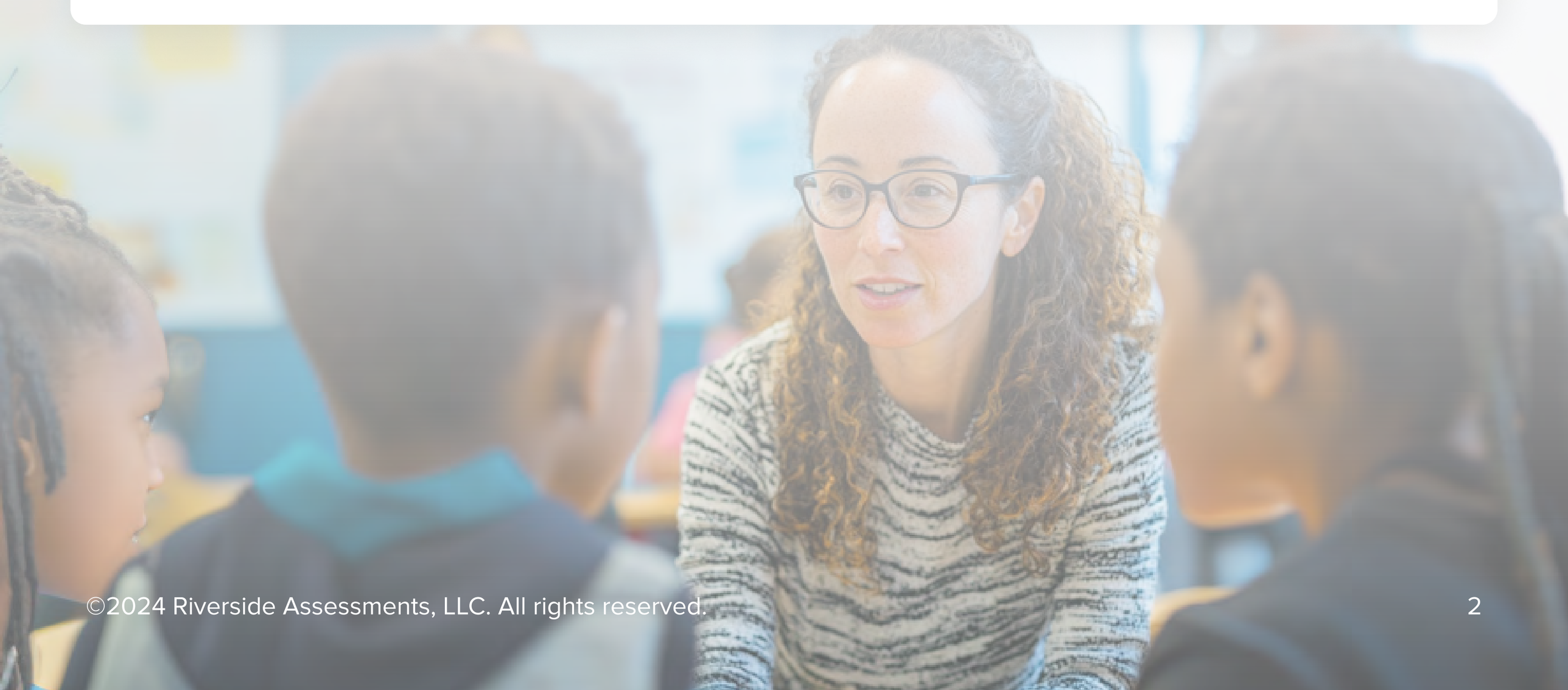
©2024 Riverside Assessments, LLC. All rights reserved.

2. *Math Teachers*

Implementation: Teachers can use the *ability profile* data to differentiate instruction for students based on their cognitive strengths. This approach helps meet students at their current level of understanding and promotes growth.

How to Use:

- **Content Differentiation:**
  - For **Quantitative Learners (Q+):** Present them with abstract problems that require pattern recognition and logical reasoning. For example, during a unit on algebra, challenge these students to identify patterns in equations and explore multiple methods for solving them, such as graphing, using a table of values, or algebraic manipulation (Math Companion).
  - For **Verbal Learners (V+):** Integrate more verbal reasoning into math lessons, such as word problems that require translation into mathematical expressions. Offer opportunities for these students to explain their thought process verbally or in writing, like justifying their solution methods during problem-solving exercises (Math Companion).
  - For **Nonverbal Learners (NV+):** Use visual tools like graphs, charts, and diagrams to teach new concepts. Allow these students to create visual representations of mathematical problems, such as drawing geometric shapes to understand properties or sketching models to solve word problems (Math Companion).
- **Process Differentiation:** Use strategic groupings to pair students with different strengths. For example, in a project on geometry, a student with strong Nonverbal skills can work on constructing models, while a Quantitative learner can focus on calculating measurements, and a Verbal learner can present the group's findings (Math Companion).
- **Assessment Differentiation:** Develop tiered assessments with varying levels of difficulty or offer choice in how students demonstrate their understanding. For example, offer multiple formats for a final project, such as creating a video tutorial, writing a detailed explanation, or building a physical model of a mathematical concept (Math Companion).



©2024 Riverside Assessments, LLC. All rights reserved.

3. *Curriculum Designers*

Implementation: Design math curriculum units and activities that cater to various *ability profiles* and include differentiated options for content, process, and product.

How to Use:

- **Vertical Alignment:** Create lessons that increase in cognitive complexity as students progress through grade levels. For example, the document suggests that a 1st-grade activity might involve basic arithmetic operations, while an 8th-grade activity could involve operations with both rational and irrational numbers, focusing on value and estimation (Math Companion).
- **Inquiry-Based Learning:** Incorporate inquiry-based learning activities that allow for exploration and creativity. For example, during a unit on probability, design an activity where students investigate real-world data, such as comparing the likelihood of various outcomes in games of chance, and then present their findings in a format of their choice (e.g., report, presentation, or infographic) (Math Companion).
- **Interdisciplinary Connections:** Include interdisciplinary projects that connect math to other subjects. For example, a project on geometry could be linked with art (creating geometric patterns), science (measuring angles in physical objects), and history (studying the use of geometry in ancient architecture) (Math Companion).

4. *Special Education Teachers*

Implementation: Use the document's differentiation strategies to support students with diverse learning needs by providing scaffolds and alternative modes of instruction that align with their cognitive strengths.

How to Use:

- **Tiered Tasks:** For students struggling with mathematical concepts, offer tiered tasks that reduce the complexity without changing the core content. For instance, when teaching fractions, provide concrete manipulatives like fraction tiles for tactile learners, while allowing advanced students to work on complex fraction problems involving mixed numbers and improper fractions (Math Companion).
- **Individualized Support:** Implement interventions like personalized anchor charts, concept maps, and visual aids for Nonverbal learners who struggle with traditional instruction. For students with IEPs or 504 plans, adapt the content to ensure it is accessible while still challenging, such as using simplified language in word problems or providing step-by-step guides (Math Companion).
- **Flexible Assessments:** Offer assessments that allow for multiple means of expression. For example, students could demonstrate understanding of geometric shapes by building models or using a digital drawing tool to illustrate properties of shapes, instead of taking a written test (Math Companion).

©2024 Riverside Assessments, LLC. All rights reserved.

5. *Gifted and Talented Coordinators*

Implementation: Utilize the CAP activities and other advanced strategies to extend learning for gifted students, ensuring that they remain challenged and engaged.

How to Use:

- **Advanced CAP Activities:** For gifted learners, design activities that encourage creative, analytical, and practical thinking. For example, in a unit on calculus, students could investigate the mathematical principles behind the fastest roller coasters and create models predicting the speed and force of different designs (Math Companion).
- **Complex Problem Solving:** Provide opportunities for advanced students to engage in high-level problem solving that connects mathematical theories with real-world applications. For instance, pose an essential question such as, "Was mathematics invented or discovered?" and have students explore this question through research and debate, culminating in a presentation or written paper (Math Companion).
- **Differentiated Project Options:** Offer project-based learning opportunities that allow gifted students to choose from a variety of complex problems or create their own, such as developing a new mathematical model to solve a contemporary issue, or creating a simulation to demonstrate an advanced mathematical concept (Math Companion).

By leveraging the differentiation strategies, *ability profile* data, and various instructional tools provided in the **Mathematics Companion**, educators can enhance mathematics instruction to better meet the diverse needs of their students, providing targeted support and extending learning opportunities for all learners.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Science Companion



Introduction

Utilizing ability profiles can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong **Quantitative (Q+)** and **Nonverbal (NV+)** reasoning tend to do well in science classes, educators can't neglect the other ability profile that is most definitely in your classes: **Verbal (V+)**. There are ways to use the strengths of each profile to guide students toward success in Science. This requires effective differentiation in lesson design and conscientious planning. Each lesson sample provided offers differentiation approaches that will utilize all three ability profiles so you can reach and grow all students.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *Cognitive Abilities Test*™ (*CogAT*®) data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms? (walkthrough form below)

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson—if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.

©2024 Riverside Assessments, LLC. All rights reserved.

NV+

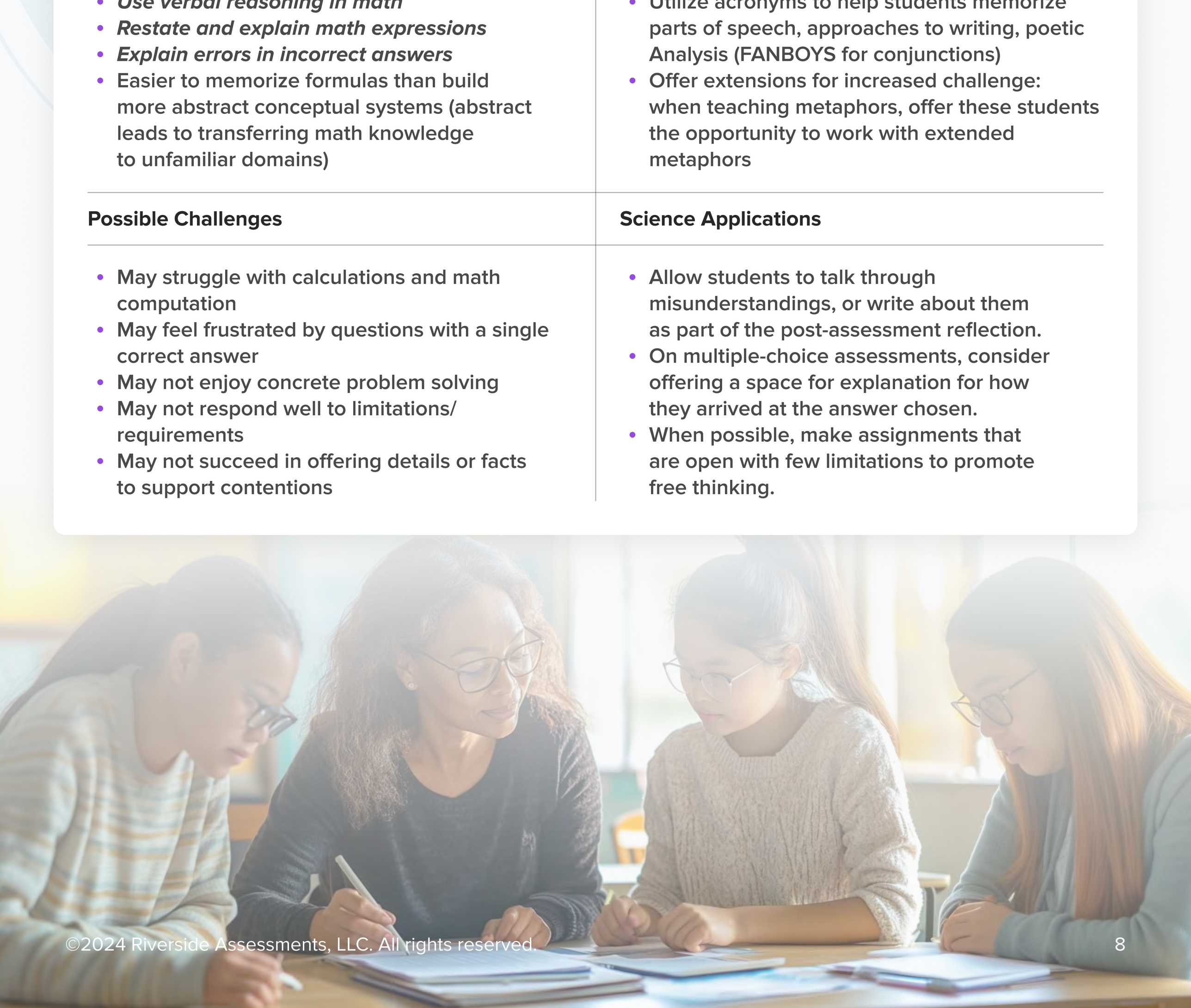
Characteristics, Relative Strengths, Instruction	Science Applications
• Good at reasoning with spatial representations • Effectively solve new problems • Excel at drawing and sculpting (visual arts) • Prefer visual mental models (with connecting concepts) • Graphics and maps • Concrete application • Prefer detailed illustrations for unfamiliar content • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • ***Create drawings when solving math problems*** • Concept maps for note taking • ***Create mental models during reading*** • Hands-on learning, physical application for problem solving • ***Descriptive (rather than narrative prose) for teaching writing, illustrate scene*** • Skilled in visual arts	• Incorporate visual representations of concepts, terms, characters, plot sequences, as often as possible, and encourage students to create their own visual representations as well through storyboards, comic strips, sketches in a reflection notebook, etc. • Have notes taken as storyboards in class, or allow graphic organizers for images that support notes. • Consider a graphic novel as an acceptable outside or independent reading choice. • Offer opportunities for business writing, informative texts, blogs in place of storytelling assignments when possible to engage technical writing capacity. • As often as possible, allow scaffolding through interdisciplinary connections that the students generate surrounding an essential question, a theme, or a conflict. • Give them real-world hypothetical scenarios to put to use their problem-solving skills within the world of ELAR. (For example, a passage with no punctuation and have them fill it in. What if we couldn't understand literary devices and read only as literalists? How could this persuasive text be more effective?)
Possible Challenges	**Science Applications**
• May find frustration with highly analytical tasks that do not incorporate open-ended thinking • May struggle with structured notes or note taking, outlining • May feel challenged by creative writing or open prompts • May not learn well by reading alone • Spelling and verbal fluency are challenging	• Try to avoid arbitrary limitations on tasks. • Use technical and business writing to avoid creativity blocks. • Attempt to offer visuals in instructions rather than only text instructions. • Avoid heavy penalties for spelling and fluency when possible.

Note: Items in bold italics are crossover skills that lend to interdisciplinary strengths and applications.

©2024 Riverside Assessments, LLC. All rights reserved.

V+

Characteristics, Relative Strengths, Instruction	Science Applications
• Strong in all academic areas except math computation • Perform well when asked to write or discuss ideas • Good memories for arbitrary sequences (sounds, letters, words, and events) • Excels in spelling; knowledge of syntax and grammar; learning other languages; and remembering dialogue, prose, and poetry • Challenge with special “higher demand” reading/writing assignments • ***Use verbal reasoning in math*** • ***Restate and explain math expressions*** • ***Explain errors in incorrect answers*** • Easier to memorize formulas than build more abstract conceptual systems (abstract leads to transferring math knowledge to unfamiliar domains)	• Offer regular discussion opportunities and/or reflection tasks (journals, responses). • Incorporate multi-genre reading and writing when possible, and if aiming for GT/HiCAP, intensify the reading/writing demand. (rigid requirements for a poem like iambic pentameter, or read a text with more nuance and subtlety) • If answering a question with a “right” or “wrong” answer, allow students to justify their Thinking. (think multiple choice tests, quizzes) • Utilize acronyms to help students memorize parts of speech, approaches to writing, poetic Analysis (FANBOYS for conjunctions) • Offer extensions for increased challenge: when teaching metaphors, offer these students the opportunity to work with extended metaphors
Possible Challenges	**Science Applications**
• May struggle with calculations and math computation • May feel frustrated by questions with a single correct answer • May not enjoy concrete problem solving • May not respond well to limitations/ requirements • May not succeed in offering details or facts to support contentions	• Allow students to talk through misunderstandings, or write about them as part of the post-assessment reflection. • On multiple-choice assessments, consider offering a space for explanation for how they arrived at the answer chosen. • When possible, make assignments that are open with few limitations to promote free thinking.



©2024 Riverside Assessments, LLC. All rights reserved.

Teaching Tools for Science and *Ability Profiles*



Q+

Characteristics, Relative Strengths, Instruction	Science Applications
• Exhibit abstract thinking at an early age • Score higher than expected on math and language (skilled at pattern recognition) • Computation • ***Identify patterns and reason with abstraction*** • ***Computer skills*** (organizing data, creating graphs, using computational logic in robotics) • ***Strong grammar knowledge*** • Enjoy math puzzles and challenges • Present math solutions or data interpretations verbally • Collaborative projects (using statistics, exploring evidence and claims) • Provide opportunities for these students to contribute at high levels to group projects that require math skills.	• Encourage students to see patterns in text, like character behaviors, setting changes, dialogue patterns, etc. and Why are these patterns present? What do they mean? • Use graphic organizers to show plot structures or sequences that will support inference. • Utilize pattern strengths and organizational skills in grammar instruction: How do you see commas being used in these sentences and why? What role can sentence structure play in how we pose an argument? • Utilize brain teasers that play with verbal concepts (puns, new terms, semantics) to entice their critical thinking skills. • Develop projects or group tasks where they can work in both ELAR and mathematics (statistics, trends, patterns, etc.)
Possible Challenges	**Science Applications**
• May struggle with divergent thinking tasks or open-ended questions • May not be particularly expressive in writing, sound almost robotic • May not be enticed to debate about characters, opinions, or anything that isn't factual • May not respond well to hypothetical situations • May not enjoy tasks of a creative domain variety, preferring to solve problems that have correct and justifiable answers • May not enjoy interdisciplinary tasks	• Offer guidance and sequences of thinking tasks for open-ended prompts and questions. • Try to connect fictional elements to real-world situations to promote relevance and meaningful study. • When possible, offer connections to mathematics and other Q+ reasoning courses.

©2024 Riverside Assessments, LLC. All rights reserved.

Q: What does this mean for Science?

A: As the learning strategies from the toolkit (see chart) increase in sophistication, so will the complexity of the content you are teaching, making it an appropriate and consistently enhanced cognitive challenge for all learners. A creative, analytical, practical (CAP) activity for 1st Grade might involve the most basic elements of the types of matter, where a CAP activity for 8th Grade can still address matter, but will be looking at physical or chemical changes, or defining the distinctions between physical and chemical changes. The Conversational Roundtable for a 2nd Grade class could be about weather patterns and terms, while the conversational roundtable for 7th Grade could be about weather patterns and terms as well, but using more iconic combinations, and the conversational roundtable for 10th Grade could address weather patterns and the role geography plays, along with more sophisticated vocabulary and more complicated iconic pathways.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

Q: How will this help with professional learning community (PLC) questions 3 and 4?

A: Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS (multi-tiered system of supports), re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.

Sometimes, students who are struggling are supported through Individualized Education Programs (IEPs) or Section 504 accommodations and modifications, but often they are not. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is the educator's job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.

For PLC Question 4, there are resources embedded and strategies shared in each lesson that offer guidance for increasing the cognitive challenges for students who are ready for the challenge. You will see more complicated iconic intersections and pathways as well as opportunities for unique and innovative approaches through Inquiry Learning, Think Like a Disciplinarian, and CAP Activities. Essentially, any activity you use can be enhanced to satisfy the PLC Question 4 if you plan for it in advance and use these resources strategically.

©2024 Riverside Assessments, LLC. All rights reserved.

Q: What support will my teachers need to make ability profiles from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: Is there a lesson plan template they can follow? A decision guide?

> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind.

Q: How does this work within our existing curriculum? (Which parts are nonnegotiable, and where do teachers have creative license?)

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. Verbal (V+), Nonverbal (NV+), and Quantitative (Q+) thinking skills are universally applicable and will work embedded in all content areas. For science courses or instruction, you will utilize the curriculum scope and sequence you already use but may find you make adjustments to specific lesson designs based on these *Ability Profile* options. You can use any of the Common Core or Texas Essential Knowledge and Skills (TEKS) objectives to build ability profile informed lessons. The chart on page 4 shares some content specific application ideas to use in your existing curriculum.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart on page 4 shows you some of the vertical alignment you can find in these resources. For example, in the Q+ Strength column, you will see the "Right or Wrong?" Graphic Organizer box checked in all age groups from K–2 all the way through 9–12. The organizer remains about the same, but increases in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

CogAT Informed Differentiation Walkthrough Form K–8

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner; scaffolding/personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

NV+

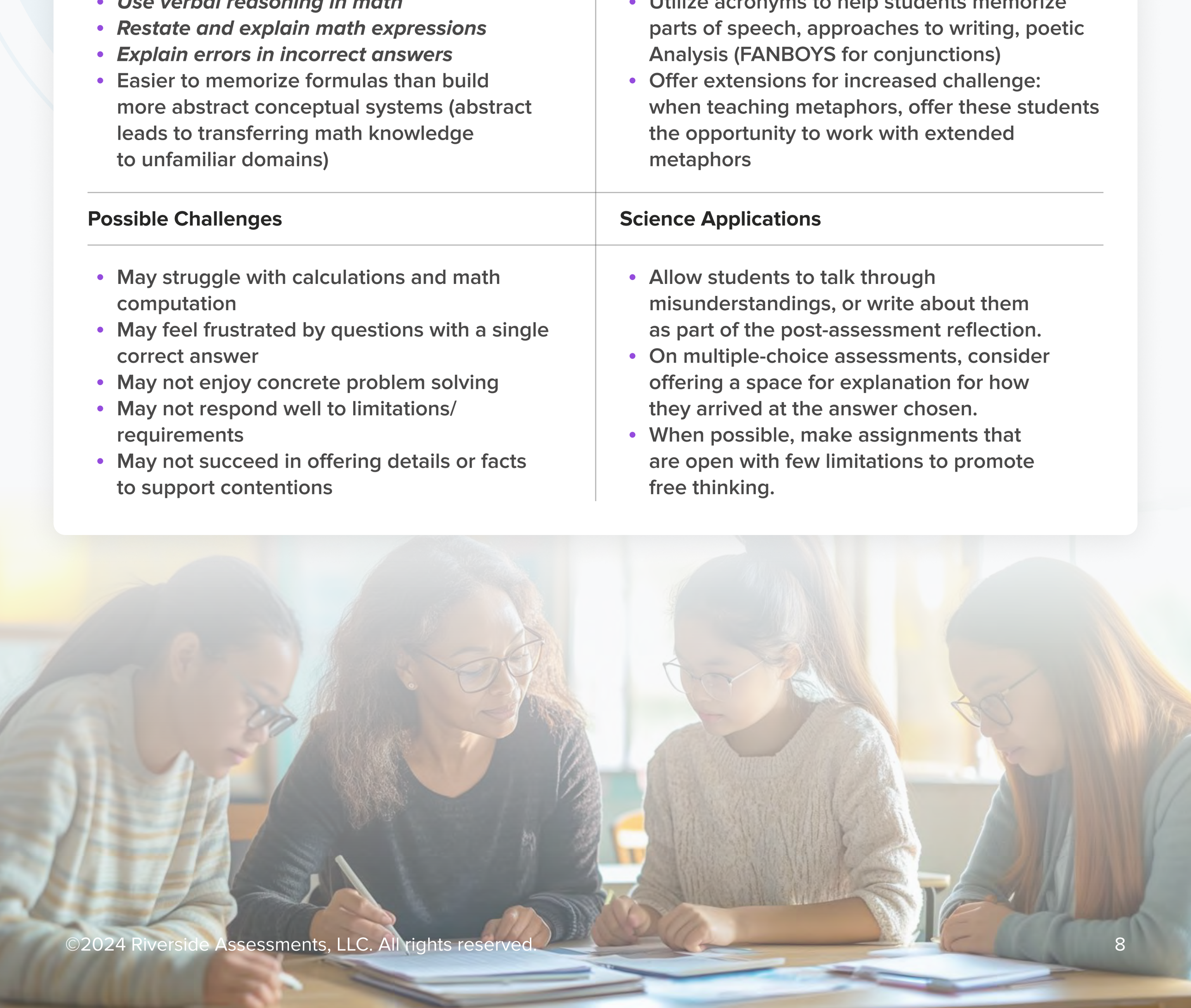
Characteristics, Relative Strengths, Instruction	Science Applications
• Good at reasoning with spatial representations • Effectively solve new problems • Excel at drawing and sculpting (visual arts) • Prefer visual mental models (with connecting concepts) • Graphics and maps • Concrete application • Prefer detailed illustrations for unfamiliar content • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • ***Create drawings when solving math problems*** • Concept maps for note taking • ***Create mental models during reading*** • Hands-on learning, physical application for problem solving • ***Descriptive (rather than narrative prose) for teaching writing, illustrate scene*** • Skilled in visual arts	• Incorporate visual representations of concepts, terms, characters, plot sequences, as often as possible, and encourage students to create their own visual representations as well through storyboards, comic strips, sketches in a reflection notebook, etc. • Have notes taken as storyboards in class, or allow graphic organizers for images that support notes. • Consider a graphic novel as an acceptable outside or independent reading choice. • Offer opportunities for business writing, informative texts, blogs in place of storytelling assignments when possible to engage technical writing capacity. • As often as possible, allow scaffolding through interdisciplinary connections that the students generate surrounding an essential question, a theme, or a conflict. • Give them real-world hypothetical scenarios to put to use their problem-solving skills within the world of ELAR. (For example, a passage with no punctuation and have them fill it in. What if we couldn't understand literary devices and read only as literalists? How could this persuasive text be more effective?)
Possible Challenges	**Science Applications**
• May find frustration with highly analytical tasks that do not incorporate open-ended thinking • May struggle with structured notes or note taking, outlining • May feel challenged by creative writing or open prompts • May not learn well by reading alone • Spelling and verbal fluency are challenging	• Try to avoid arbitrary limitations on tasks. • Use technical and business writing to avoid creativity blocks. • Attempt to offer visuals in instructions rather than only text instructions. • Avoid heavy penalties for spelling and fluency when possible.

Note: Items in bold italics are crossover skills that lend to interdisciplinary strengths and applications.

©2024 Riverside Assessments, LLC. All rights reserved.

V+

Characteristics, Relative Strengths, Instruction	Science Applications
• Strong in all academic areas except math computation • Perform well when asked to write or discuss ideas • Good memories for arbitrary sequences (sounds, letters, words, and events) • Excels in spelling; knowledge of syntax and grammar; learning other languages; and remembering dialogue, prose, and poetry • Challenge with special “higher demand” reading/writing assignments • ***Use verbal reasoning in math*** • ***Restate and explain math expressions*** • ***Explain errors in incorrect answers*** • Easier to memorize formulas than build more abstract conceptual systems (abstract leads to transferring math knowledge to unfamiliar domains)	• Offer regular discussion opportunities and/or reflection tasks (journals, responses). • Incorporate multi-genre reading and writing when possible, and if aiming for GT/HiCAP, intensify the reading/writing demand. (rigid requirements for a poem like iambic pentameter, or read a text with more nuance and subtlety) • If answering a question with a “right” or “wrong” answer, allow students to justify their Thinking. (think multiple choice tests, quizzes) • Utilize acronyms to help students memorize parts of speech, approaches to writing, poetic Analysis (FANBOYS for conjunctions) • Offer extensions for increased challenge: when teaching metaphors, offer these students the opportunity to work with extended metaphors
Possible Challenges	**Science Applications**
• May struggle with calculations and math computation • May feel frustrated by questions with a single correct answer • May not enjoy concrete problem solving • May not respond well to limitations/ requirements • May not succeed in offering details or facts to support contentions	• Allow students to talk through misunderstandings, or write about them as part of the post-assessment reflection. • On multiple-choice assessments, consider offering a space for explanation for how they arrived at the answer chosen. • When possible, make assignments that are open with few limitations to promote free thinking.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Science and the *Ability Profiles*



What are the Ability Profiles?

Ability Profiles as identified by *CogAT* are the relative strengths and weaknesses of learners: **Verbal (V+)** , **Quantitative (Q+)** , and **Nonverbal (NV+)** . We can use this data to drive our decision making and differentiation implementation to yield improvement in performance in any Science course or content from elementary level to high school seniors taking AP or IB classes.

Teachers Questions to Address

Q: Why use the *Ability Profiles*?

> **A:** Utilizing *Ability Profiles* can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong Quantitative reasoning tend to do well in most Science classes, educators can't neglect the other two *Ability Profiles* that are most definitely in your classes: **Verbal** and **Nonverbal** . There are ways to use the strengths of each profile to guide students toward success in Science. This requires effective differentiation in lesson design and conscientious planning.
>
> When we employ the relative strengths and weaknesses identified in the batteries, we can eliminate unintended barriers to learning and isolate the new content more effectively. Additionally, because we can work in a "strengthen and stretch" approach, we can facilitate improved *thinking*.
>
> Critical thinking is such an important part of our lives in every facet. We use critical thinking every day to guide our actions, decision making, morals, and beliefs (Roberts, 2010). When our courses encourage and improve critical thinking, we are preparing students for any life path they may choose.

Q: Can you give me some examples?

> **A:** For example, if you are teaching a lesson on the solar system, you can expect a student who is **Q+** to understand this well and to recognize the patterns, sequence, and structure of the solar system (at least to the degree it is being taught). To engage other learners, you might pose an ethical question about whether we should be trying to get to Mars and what might be great about that and what might go wrong with it. You could allow **V+** students to offer explanations if you are asking questions that have specific correct answers.
>
> In another example, if you are teaching a biology course and addressing cells, the **Q+** learner will likely be able to grasp the concepts fairly easily, but you may need to offer some other approaches for your **NV+** and **V+** learners. You might ask them if cloning cells is ethical and have them explain their thinking. You could include journals for reflection both about the process of the learning and about the specific content. You could even allow students to create storyboards that explain the mitotic cycle to help them understand the sequence of the stages a cell goes through to divide and create two daughter cells.

©2025 Riverside Assessments, LLC. All rights reserved.

In sum:

- We have all three *Ability Profiles* in all of our classes, and we should know which students have which relative strengths and weaknesses.
- We can use these *Ability Profiles* to make strategic decisions about differentiation and increase our effectiveness in lessons.
- We can use these *Ability Profiles* to eliminate unintended barriers to learning and increase the students' abilities to think critically.

Reference

Roberts, A. (2010). The thinking student's guide to college. University of Chicago Press.



©2025 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

CogAT® Riverside Insights®

Implementation and Use Guide for the Science Companion Document



1. School Leaders/Administrators

Implementation: Administrators can use the Science Companion document to guide teachers in differentiating science instruction based on students' cognitive abilities and learning profiles (Verbal, Nonverbal, Quantitative). This ensures that all students have access to appropriately challenging and supportive learning experiences in science.

How to Use:

- **Professional Development:** Conduct training sessions to familiarize teachers with the *Ability Profile*s (Verbal, Nonverbal, Quantitative) and how to integrate these profiles into lesson planning. For example, focus on using Verbal reasoning for explaining scientific concepts, Nonverbal reasoning for interpreting data and visual models, and Quantitative reasoning for conducting experiments and analyzing results.
- **Classroom Observations:** Utilize the *CogAT* Informed Differentiation Walkthrough Form to observe science classrooms and provide feedback. Look for evidence of differentiation, such as teachers using various instructional methods (e.g., lab experiments, visual aids, data analysis) and strategic groupings based on student profiles (e.g., pairing a strong Nonverbal learner with a Quantitative learner for a lab experiment).
- **PLC Guidance:** Facilitate discussions in PLCs around the application of differentiation strategies. Encourage teachers to explore how to respond when students struggle (e.g., by offering additional visual aids and hands-on experiments for Nonverbal learners) or excel (e.g., providing advanced problem-solving tasks for Quantitative learners).

©2024 Riverside Assessments, LLC. All rights reserved.

2. Science Teachers

Implementation: Teachers can use the *ability profiles* to differentiate science instruction across content, process, and product, ensuring that all students are engaged and challenged according to their cognitive strengths.

How to Use:

- **Content Differentiation:**
  - For **Verbal Learners (V+):** Offer more opportunities for discussion and explanation of scientific concepts. Use detailed written and spoken explanations, and encourage students to articulate their understanding through discussions, reports, and presentations.
  - For **Nonverbal Learners (NV+):** Incorporate visual elements such as diagrams, models, and concept maps. For example, when teaching about the cell structure, have these students create detailed diagrams or 3D models to represent different cell components.
  - For **Quantitative Learners (Q+):** Emphasize data analysis and pattern recognition in scientific experiments. Provide opportunities for these students to work on complex calculations, design experiments, and interpret data through charts and graphs.
- **Process Differentiation:** Use strategic grouping to leverage the strengths of different learners. For example, during a group lab activity on chemical reactions, pair a student strong in Nonverbal reasoning (who can visualize the process) with a student strong in Quantitative reasoning (who can handle the calculations).
- **Product Differentiation:** Allow students to choose how they demonstrate their understanding. For example, after a unit on ecosystems, a Nonverbal learner could create a detailed infographic, a Verbal learner could write an explanatory essay, and a Quantitative learner could analyze the population data of a specific ecosystem and present their findings.



©2024 Riverside Assessments, LLC. All rights reserved.

3. Curriculum Designers

Implementation: Design science curriculum units that are differentiated by incorporating varied activities and assessments that align with students' *cognitive profiles*. Ensure that the curriculum is vertically aligned, with increasing complexity as students advance through grades.

How to Use:

- **Vertical Alignment:**
  - Develop activities that increase in complexity. For example, for teaching the scientific method:
    - **Elementary Level:** Focus on basic steps of the scientific method using simple experiments.
    - **Middle School:** Introduce more complex variables and controls, encouraging students to design their own experiments.
    - **High School:** Engage students in advanced experimentation and analysis, such as conducting independent research projects with complex data interpretation.
- **Inquiry Learning and CAP Activities:** Include activities that encourage creative, analytical, and practical thinking. For example, have students engage in an inquiry-based project where they investigate a scientific phenomenon and present their findings through a medium of their choice, such as a research paper, presentation, or video demonstration.
- **Interdisciplinary Connections:** Incorporate cross-curricular activities that connect science with other subjects. For example, a unit on climate change could include connections to social studies (impact on human societies) and math (statistical analysis of climate data).



©2024 Riverside Assessments, LLC. All rights reserved.

4. Special Education Teachers

Implementation: Use the document's differentiation strategies to provide targeted support for students with diverse learning needs by adapting instruction to align with their cognitive strengths and areas of need.

How to Use:

- **Tiered Instruction:** Offer tiered versions of assignments to match student ability levels. For example, when teaching the periodic table, provide a simplified chart with fewer elements for struggling students, while allowing advanced students to explore complex properties and trends across the table.
- **Scaffolding:** Use visual supports like diagrams and flowcharts to help Nonverbal learners grasp abstract scientific concepts. For students with IEPs or 504 plans, adapt the content by breaking down complex processes into smaller, more manageable steps, and using clear, simplified language.
- **Flexible Assessments:** Use alternative assessments that cater to students' strengths. For instance, allow students to demonstrate understanding through hands-on projects, visual representations, or oral explanations instead of traditional tests.

5. Gifted and Talented Coordinators

Implementation: Develop advanced coursework and enrichment opportunities that challenge gifted students by leveraging their cognitive strengths, promoting deeper exploration, and encouraging independent learning.

How to Use:

- **Advanced CAP Activities:** Create complex, interdisciplinary projects that require students to think creatively, analytically, and practically. For example, have students design an experiment to test a scientific hypothesis, analyze the data, and present their findings through a multimedia presentation.
- **High-Level Inquiry Tasks:** Design inquiry-based projects that allow students to explore advanced scientific theories or controversial topics in science, such as the ethical implications of genetic engineering. Provide opportunities for independent research and encourage presentations in diverse formats, such as TED-style talks or scientific posters.
- **Extended Scientific Analysis:** Offer opportunities for students to engage in extended analysis of complex scientific concepts. For example, during a unit on physics, students could explore different interpretations of quantum mechanics and then write or present a comparative analysis.

By leveraging the differentiation strategies, *ability profile* data, and a variety of instructional tools provided in the Science Companion, educators can create engaging, supportive, and challenging learning environments that meet the diverse needs of their students. This ensures a more personalized approach to teaching science, promoting both academic growth and a deeper understanding of scientific principles.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Social Studies Companion



Introduction

Utilizing ability profiles can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong **Quantitative (Q+)** and **Nonverbal (NV+)** reasoning tend to do well in science classes, educators can't neglect the other ability profile that is most definitely in your classes: **Verbal (V+)**. There are ways to use the strengths of each profile to guide students toward success in Social Studies. This requires effective differentiation in lesson design and conscientious planning. Each lesson sample provided offers differentiation approaches that will utilize all three ability profiles so you can reach and grow all students.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *Cognitive Abilities Test*™ (*CogAT*®) data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms? (walkthrough form below)

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson—if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8 (Social Studies)

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner; scaffolding/personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make ability profiles from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: Is there a lesson plan template they can follow? A decision guide?

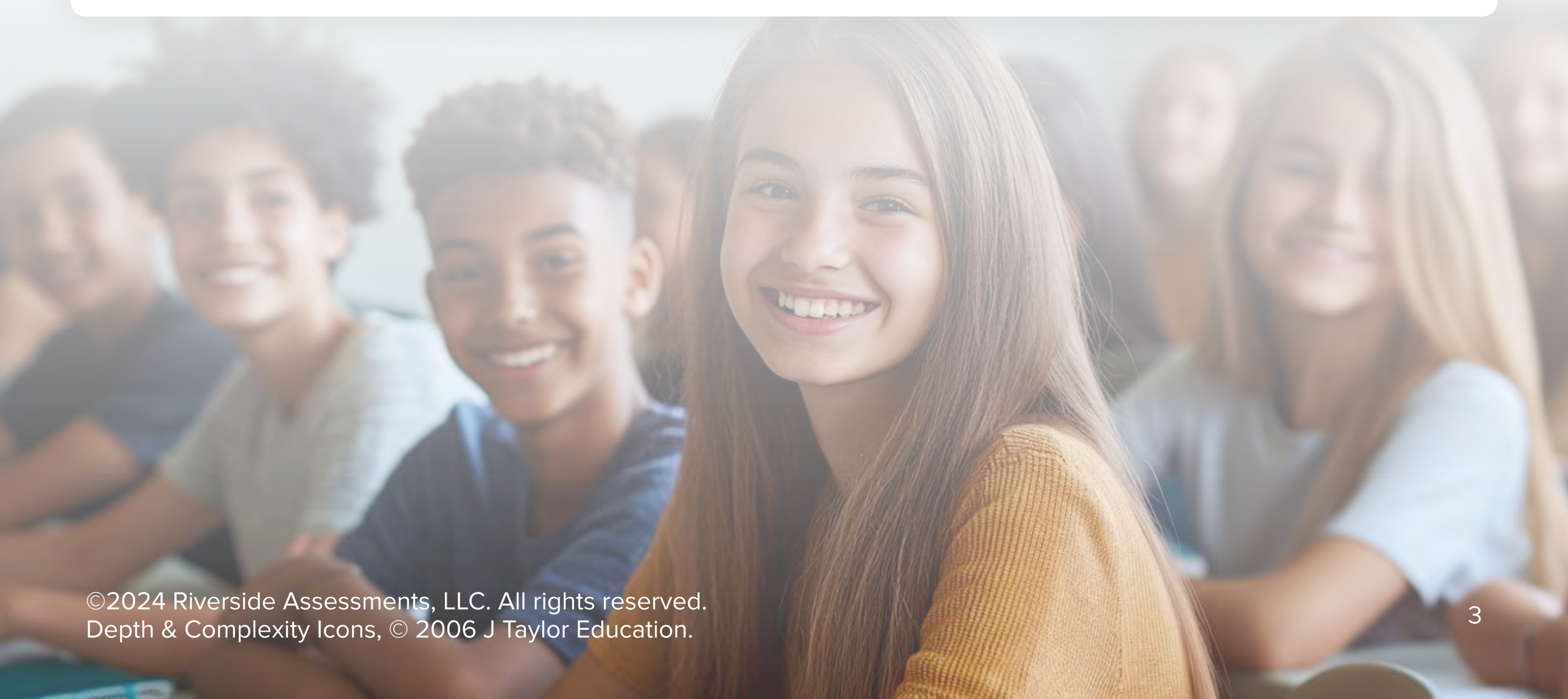
> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind.

Q: How does this work within our existing curriculum? (Which parts are nonnegotiable, and where do teachers have creative license?)

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. Verbal (V+), Nonverbal (NV+), and Quantitative (Q+) thinking skills are universally applicable and will work embedded in all content areas. For social studies courses or instruction, you will utilize the curriculum scope and sequence you already use but may find you make adjustments to specific lesson designs based on these *Ability Profile* options. You can use any of the Common Core or Texas Essential Knowledge and Skills (TEKS) objectives to build ability profile informed lessons. The chart below shares some content specific application ideas to use in your existing curriculum.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart on page 4 shows you some of the vertical alignment you can find in these resources. For example, in the Q+ Strength column, you will see the "Right or Wrong?" Graphic Organizer box checked in all age groups from K–2 all the way through 9–12. The organizer remains about the same, but increases in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What does this mean for Social Studies?

> **A:** As the learning strategies from the toolkit (see chart) increase in sophistication, so will the complexity of the content you are teaching, making it an appropriate and consistently enhanced cognitive challenge for all learners. A CAP activity for 1st grade might involve the most basic elements of government, where a CAP activity for 8th grade can still address government, but will be looking at types of government, social contracts, and benefits to both. The Conversational Roundtable for a 2nd grade class could be about the American Revolution while the conversational roundtable for 7th grade could be about the American Revolution as well, but using more iconic combinations and more focused specific events within the revolution, and the conversational roundtable for 10th grade could address the American Revolution, controversies in our perception of this history, contrary viewpoints, and utilize more complicated iconic pathways.

Q: How will this help with professional learning community (PLC) questions 3 and 4?

> **A:** Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS (multi-tiered system of supports), re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.
>
> Sometimes, students who are struggling are supported through Individualized Education Programs (IEPs) or Section 504 accommodations and modifications, but often they are not. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is the educator's job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

> For PLC Question 4, there are resources embedded and strategies shared in each lesson that offer guidance for increasing the cognitive challenges for students who are ready for the challenge. You will see more complicated iconic intersections and pathways as well as opportunities for unique and innovative approaches through Inquiry Learning, Think Like a Disciplinarian, and CAP Activities. Essentially, any activity you use can be enhanced to satisfy the PLC Question 4 if you plan for it in advance and use these resources strategically.

©2024 Riverside Assessments, LLC. All rights reserved.

Social Studies Teaching Applications



Application	Sample Uses/Strategic Implementation
Conversational Roundtables Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles	• Learning new terms/major concepts: ◦ Culture (norms, structures, social classes) ◦ Civics (citizenship, rules, values, ideals) ◦ Institutions (politics, government, economics) ◦ Geography (locations, types, impacts on culture, cities) ◦ Time (continuity and change, eras/periods, major events in global history) • Posing an essential question ◦ Is power a corruptive force? ◦ Why should we be good citizens? ◦ Are people born inherently flawed? ◦ Could a society exist without rules or government? • Promote academic dialogue about a controversial or definitive statement ◦ Christopher Columbus is not an American hero who should be celebrated. ◦ The atomic bomb was a great feat of science and ingenuity. ◦ The Electoral College is no longer necessary in the United States. ◦ Slavery is an historically necessary part of cultural development.
Inquiry Learning Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Readiness Levels • Student Interests	• When presenting a new term or concept (justice, democracy, voting, electoral college, civil conflict vs. civil war, citizenship) • When offering research presentations or essay writing tasks (students choose questions to tackle, pose an essential question they need to address, etc.) • Hook students in to new concepts through an engaging dive into related topics ◦ A tattooist in the Holocaust before reading an article about the Holocaust or viewing a documentary ◦ Nature vs. nurture in preparation for studying social contracts ◦ What is a leader? (in preparation for studying any of the notable leaders in history, from Hitler to Lincoln to Machiavelli to Obama)

©2024 Riverside Assessments, LLC. All rights reserved.

Application	Sample Uses/Strategic Implementation
Think Like a Disciplinarian Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Student Interests	• In-depth historical figures and context considerations, discussions to build empathy ◦ From these different professions, consider the actions of this leader: lawyer, reporter, artist, a minority ◦ After reading this article, consider the implications for: an economist, a teacher, a police officer • Make meaningful connection to essential questions/enduring understandings ◦ Are we born good? (or, Babies are evil.): a sociologist, a scientist, an author, a politician
3-2-1 Exit Ticket Differentiation Type • Product Differentiation Approach • Learning Profiles	• Conclusion of any lesson, lecture, documentary, or reading ◦ Key points in this historical event ◦ Important concepts from an informational video ◦ Different kinds of conflicts ◦ Rules for researching from primary and secondary sources ◦ Parts of a conflict (disagreement, communication, beliefs, dilemmas, oppression, human rights)
CAP Activity Differentiation Type • Process Differentiation Approach • Learning Profiles	• Choose topics that are revisited in curriculum to enhance retention, avoid reteaching of topic ◦ Vocabulary terms ◦ Impactful people, events, dates, movements ◦ Parts of government (branches, checks and balances, elections) ◦ Conflicts (causes, justification, goals)
Graphic Organizers and **Details Deep Dive** Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Readiness Levels • Student Interests	*Graphic Organizers* • Guide student discussions and help organize ideas • See bigger-picture connections • Work for essentially any topic you are teaching • Allow students with visual strengths to take appropriate notes *Details Deep Dive* • Text evidence to support assertions or ideas, inferences about future events, development of global connections • Any time you are working on inference, the details deep dive can help students see why they make certain inferences

©2024 Riverside Assessments, LLC. All rights reserved.

Teaching Tools for Social Studies and *Ability Profiles*



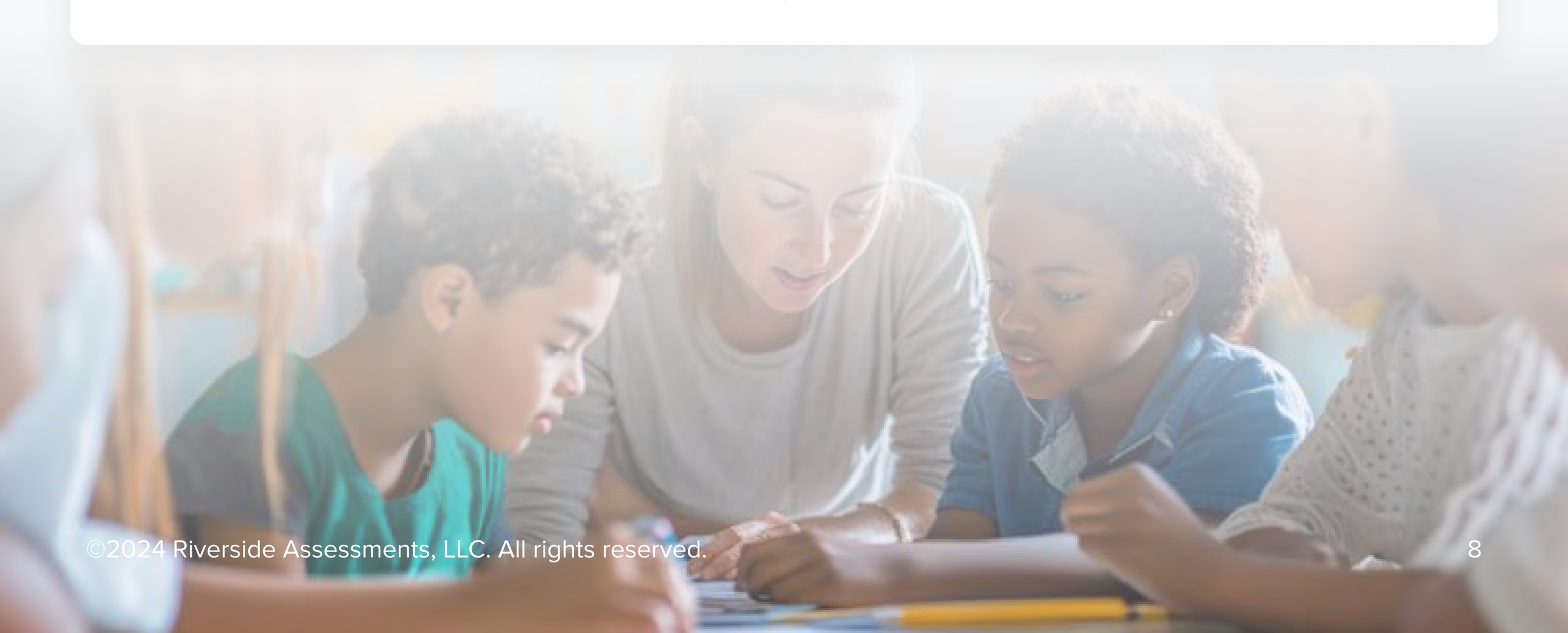
Q+

Characteristics, Relative Strengths, Instruction	Social Studies Applications
• Exhibit abstract thinking at an early age • Score higher than expected on math and language (skilled at pattern recognition) • Computation • ***Identify patterns and reason with abstraction*** • ***Computer skills*** (organizing data, creating graphs, using computational logic in robotics) • ***Strong grammar knowledge*** • Enjoy math puzzles and challenges • Present math solutions or data interpretations verbally • Collaborative projects (using statistics, exploring evidence and claims) • Provide opportunities for these students to contribute at high levels to group projects that require math skills.	• Encourage students to see patterns in history like leader behaviors, causes of conflicts, consistent discord in certain regions, etc. Why are these patterns present? What do they mean? • Use graphic organizers to show time lines or sequences that will support inference. • Utilize pattern strengths and organizational skills in research instruction: How do you see bias being demonstrated in this source and why? What role can bias play in how we pose an argument? • Utilize brain teasers that play with historical concepts (bias, assumption, appropriation) to entice their critical thinking skills. • Develop projects or group tasks where they can work in both Social Studies and other content areas.
Possible Challenges	**Social Studies Applications**
• May struggle with divergent thinking tasks or open-ended questions • May not be particularly expressive in writing, sound almost robotic • May not be enticed to debate about characters, opinions, or anything that isn't factual • May not respond well to hypothetical situations • May not enjoy tasks of a creative domain variety, preferring to solve problems that have correct and justifiable answers • May not enjoy interdisciplinary tasks	• Offer guidance and sequences of thinking tasks for open-ended prompts and questions. • Try to connect historical elements to real-world situations to promote relevance and meaningful study. • When possible, offer connections to mathematics and other Q+ reasoning courses.

©2024 Riverside Assessments, LLC. All rights reserved.

V+

Characteristics, Relative Strengths, Instruction	Social Studies Applications
• Strong in all academic areas except math computation • Perform well when asked to write or discuss ideas • Good memories for arbitrary sequences (sounds, letters, words, and events) • Excels in spelling; knowledge of syntax and grammar; learning other languages; and remembering dialogue, prose, and poetry • Challenge with special “higher demand” reading/writing assignments • ***Use verbal reasoning in math*** • ***Restate and explain math expressions*** • ***Explain errors in incorrect answers*** • Easier to memorize formulas than build more abstract conceptual systems (abstract leads to transferring math knowledge to unfamiliar domains)	• Offer regular discussion opportunities and/or reflection tasks (journals, responses). • Incorporate multi-genre reading and writing when possible, and if aiming for GT/HiCAP, intensify the reading/writing demand (rigid requirements for primary or secondary sources). • If answering a question with a “right” or “wrong” answer, allow students to justify their thinking (multiple-choice tests, quizzes). • Utilize acronyms or mnemonics to help students memorize people, places, events, policies (e.g., MAIN = Militarism, Alliance System, Imperialism, Nationalism) • Offer extensions of the content for increased depth and understanding (e.g., when studying the Boston Tea Party, add an article about what the wives felt as their husbands committed these crimes).
Possible Challenges	**Social Studies Applications**
• May struggle with calculations and math computation • May feel frustrated by questions with a single correct answer • May not enjoy concrete problem solving • May not respond well to limitations/ requirements • May not succeed in offering details or facts to support contentions	• Allow students to talk through misunderstandings, or write about them as part of the post-assessment reflection. • On multiple-choice assessments, consider offering a space for explanation for how they arrived at the answer chosen. • When possible, make assignments that are open with few limitations to promote free thinking.



©2024 Riverside Assessments, LLC. All rights reserved.

NV+

Characteristics, Relative Strengths, Instruction	Social Studies Applications
• Good at reasoning with spatial representations • Effectively solve new problems • Excel at drawing and sculpting (visual arts) • Prefer visual mental models (with connecting concepts) • Graphics and maps • Concrete application • Prefer detailed illustrations for unfamiliar content • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • ***Create drawings when solving math problems*** • Concept maps for note taking • ***Create mental models during reading*** • Hands-on learning, physical application for problem solving • ***Descriptive (rather than narrative prose) for teaching writing, illustrate scene*** • Skilled in visual arts	• Incorporate visual representations of concepts, terms, people, event sequences, as often as possible, and encourage students to create their own visual representations as well through storyboards, comic strips, sketches in a reflection notebook, etc. • Have notes taken as storyboards in class or allow graphic organizers for images that support notes. • Consider a graphic novel as an acceptable source as long as it is accurate in content. • Offer opportunities for research writing, informative texts, and blogs when possible to engage technical writing capacity. • As often as possible, allow scaffolding through interdisciplinary connections that the students generate surrounding an essential question or a conflict. • Give them real-world hypothetical scenarios to put to use their problem-solving skills within the world of Social Studies. (How different would the US be if we lost the war with England? Could we have become the United States? How different would/could our society be now as a result of this loss?)
Possible Challenges	**Social Studies Applications**
• May find frustration with highly analytical tasks that do not incorporate open-ended thinking • May struggle with structured notes or note taking, outlining • May feel challenged by creative writing or open prompts • May not learn well by reading alone • Spelling and verbal fluency are challenging	• Try to avoid arbitrary limitations on tasks. • Use technical and business writing to avoid creativity blocks. • Attempt to offer visuals in instructions rather than only text instructions. • Avoid heavy penalties for spelling and fluency when possible (focus on content and not writing technique).

Note: Items in bold italics are crossover skills that lend to interdisciplinary strengths and applications.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Social Studies and the *Ability Profiles*



What are the Ability Profiles?

Ability Profiles as identified by *CogAT* are the relative strengths and weaknesses of learners: **Verbal (V+)** , **Quantitative (Q+)** , and **Nonverbal (NV+)** . We can use this data to drive our decision making and differentiation implementation to yield improvement in performance in any Social Studies course or content from elementary level to high school seniors taking AP or IB classes.

Teachers Questions to Address

Q: Why use the *Ability Profiles*?

> **A:** Utilizing *Ability Profiles* can help teachers make the best use of class time, lesson design, and differentiation. While students who are assessed as having strong **Verbal** and **Nonverbal** reasoning tend to do well in most Social Studies classes, educators can't neglect the other *Ability Profile* that is most definitely in your classes: **Quantitative** . There are ways to use the strengths of each profile to guide students toward success in Social Studies. This requires effective differentiation in lesson design and conscientious planning.
>
> When we employ the relative strengths and weaknesses identified in the batteries, we can eliminate unintended barriers to learning and isolate the new content more effectively. Additionally, because we can work in a "strengthen and stretch" approach, we can facilitate improved *thinking*.
>
> Critical thinking is such an important part of our lives in every facet. We use critical thinking every day to guide our actions, decision making, morals, and beliefs (Roberts, 2010). When our courses encourage and improve critical thinking, we are preparing students for any life path they may choose.

Q: Can you give me some examples?

> For example, if you are teaching a lesson on the Boston Tea Party, your **NV+** and **Q+** students will respond well to graphic organizers to structure the events, context, and sequence of actions taken. The **V+** student in your class may not respond as well to that and may need to read narrative stories that help them understand the context and relevant details. Share articles that are first-person accounts as well as historical accounts told like stories. This will engage the **V+** learner and help them achieve the same learning objective as the rest of the class.
>
> In another example, if you are teaching a lesson on the three branches of government, your **Q+** students will likely benefit from creating a table that offers distinctions between the role of each as well as any overlaps that may exist (Venn Diagram). Your **NV+** students may benefit from a mnemonic device (LEJ: Laws Encourage Justice). Your **V+** students may find it beneficial to write a story from the perspective of each branch of government, personifying them and developing narratives about how each one works and how they work together.

©2025 Riverside Assessments, LLC. All rights reserved.

In sum:

- We have all three *Ability Profiles* in all of our classes, and we should know which students have which relative strengths and weaknesses.
- We can use these *Ability Profiles* to make strategic decisions about differentiation and increase our effectiveness in lessons.
- We can use these *Ability Profiles* to eliminate unintended barriers to learning and increase the students' abilities to think critically.

Reference

Roberts, A. (2010). The thinking student's guide to college. University of Chicago Press.



©2025 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

CogAT® Riverside Insights®

Social Studies Companion Planning Guide



Objective

To effectively integrate *CogAT Ability Profiles* into social studies instruction, ensuring that all students are engaged and challenged according to their cognitive strengths.

Step-by-Step Planning Process:

To effectively integrate *CogAT Ability Profiles* into social studies instruction, ensuring that all students are engaged and challenged according to their cognitive strengths.

1. Review *Ability Profiles*:

a. Analyze student *CogAT* profiles in Verbal, Nonverbal, Quantitative to identify strengths and weaknesses.
b. Group students based on their cognitive profiles to better tailor instruction.

2. Develop Differentiated Lesson Plans:

a. **Content Differentiation:**
   i. Create varied materials for different profiles. For example, use primary source analysis for Verbal learners, map studies for Nonverbal learners, and data interpretation for Quantitative learners.

b. **Process Differentiation:**
   i. Plan activities that cater to different learning profiles, such as debates, model building, or research projects.

c. **Product Differentiation:**
   Allow students to choose how they demonstrate understanding, such as through essays, visual presentations, or data-driven reports.

3. Incorporate Vertical Alignment:

a. Plan lessons that build on skills from previous grades and prepare students for future grades, increasing complexity as appropriate.

©2024 Riverside Assessments, LLC. All rights reserved.

4. Implement Strategic Grouping:

a. Use flexible grouping strategies for collaborative projects, ensuring diverse profiles are represented in each group for peer learning

5. Assessment Planning:

a. Create tiered assessments that challenge all students while providing the necessary support for those who need it.

6. Monitor and Adjust:

a. Regularly review student progress and adjust grouping, instruction, and assessments as needed.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the *Social Studies Insights Companion*



1. School Leaders/Administrators

Implementation: Train teachers to integrate student *ability profiles* (Verbal, Nonverbal, Quantitative) into their instruction. Administrators can oversee classroom implementation by conducting walkthroughs and providing targeted feedback.

How to Use:

- **Professional Development:** Organize workshops to help teachers understand how to interpret *CogAT* data and apply it to lesson planning. For example, training could focus on how to tailor instructional strategies for a student strong in verbal reasoning but weak in quantitative reasoning.
- **Walkthrough Observations:** Use the ***CogAT* Informed Differentiation Walkthrough Form** to evaluate teachers' use of *ability profiles* in their lessons. During classroom observations, look for clear differentiation, such as teachers using a mix of visual aids (for nonverbal learners), discussion opportunities (for verbal learners), or pattern-based tasks (for quantitative learners) (Social Studies Companion).
- **Instructional Rounds:** Administrators can use PLC-driven questions to encourage reflection on classroom practices. For instance, in response to PLC Question 3 (how to address student difficulties), administrators can observe and provide feedback on strategies like flexible grouping, tiered tasks, and scaffolding (Social Studies Companion).

©2024 Riverside Assessments, LLC. All rights reserved.

2. Social Studies Teachers

Implementation: Teachers can integrate *ability profile* data into every phase of instruction: content delivery, classroom activities, assessments, and grouping strategies.

How to Use:

- **Lesson Differentiation:** A teacher instructing a 7th-grade class about the American Revolution can create different tasks for students based on their *ability profiles*:
  - **Verbal learners (V+)** might write essays or participate in debates about the revolution's causes.
  - **Nonverbal learners (NV+)** could create a timeline or visual map showing key events leading to the revolution.
  - **Quantitative learners (Q+)** might explore patterns in historical conflicts and create data-driven presentations comparing the revolution to other wars (Social Studies Companion).
- **Flexible Grouping:** Use student *CogAT profiles* to form strategic groups. For example, during a group project about the formation of the U.S. Constitution, pair students who excel in nonverbal tasks (map making) with those who excel in verbal reasoning (writing speeches or arguments) (Social Studies Companion).
- **Assessment and Homework Differentiation:** Teachers can offer tiered assessments. For example, after a unit on World War II, students strong in verbal reasoning might be asked to write essays analyzing the speeches of Churchill or Roosevelt, while nonverbal learners could create visual timelines or infographics illustrating the major events (Social Studies Companion).



©2024 Riverside Assessments, LLC. All rights reserved.

3. Curriculum Designers

Implementation: Curriculum designers should incorporate differentiated tasks within units of study to ensure that students with varying cognitive strengths are equally challenged and supported.

How to Use:

- **Vertical Alignment:**
  - **Inquiry Learning and CAP Activities:** When designing inquiry-based lessons, provide options for students to explore topics using their cognitive strengths. For example, in a unit on Ancient Civilizations:
    - **Verbal learners** could analyze ancient texts, laws, and stories to explore cultural values.
    - **Nonverbal learners** could create 3D models or maps of ancient cities.
    - **Quantitative learners** could research the trade systems, economy, or population data of the civilization and use graphs or charts to present findings (Social Studies Companion).
  - **Vertical Alignment in Social Studies:** Ensure that activities are scalable from elementary through high school. For example, when designing lessons on government:
    - At the K-2 level, students might complete basic tasks like identifying leaders in their community.
    - By middle school, students could engage in debates about types of government.
    - In high school, students could tackle more complex issues, such as analyzing different social contracts or engaging in simulations of government decision-making processes (Social Studies Companion) (Social Studies Companion).



©2024 Riverside Assessments, LLC. All rights reserved.

4. Special Education Teachers

Implementation: Special education teachers can implement tailored interventions based on *ability profiles*, using a mix of scaffolding, multimodal instruction, and assistive technology to address diverse learning needs.

How to Use:

- **Tiered Instruction:** In a unit on U.S. history, provide iconic prompts at different levels to help students access the material:
  - For students with verbal strengths, include detailed discussion prompts and writing assignments.
  - For nonverbal learners, offer graphic organizers and maps to help break down key events visually (Social Studies Companion).
  - Use RTI or MTSS strategies to regularly monitor student progress and adjust the level of cognitive challenge when needed (Social Studies Companion).
- **Individualized Plans:** For students with IEPs or 504 plans, create assignments that leverage their strengths and accommodate their weaknesses. For example, a student who struggles with written expression might complete assessments orally, while a student strong in nonverbal reasoning might be allowed to use diagrams or illustrations to explain historical events (Social Studies Companion).

5. Gifted and Talented Coordinators

Implementation: GT coordinators can develop advanced coursework and activities using the document's CAP and inquiry-based strategies to challenge students and stretch their cognitive abilities.

How to Use:

- **High-Level Inquiry Tasks:** Design projects for gifted learners that challenge them to think critically about historical controversies. For instance:
  - **Inquiry Learning:** A 10th-grade GT student could be asked to investigate the ethical implications of the atomic bomb or debate controversial perspectives on historical events like the Civil Rights Movement (Social Studies Companion).
- **CAP Activities for Advanced Learners:** For example, in a project on government systems, a CAP task might require students to analyze the U.S. Constitution from the perspective of different disciplines—such as a historian, a political scientist, or a lawyer. This helps students apply their cognitive strengths (Verbal, Nonverbal, or Quantitative) to complex, interdisciplinary problems (Social Studies Companion).

In these ways, the **Social Studies Companion** provides structured, differentiated strategies to cater to different learning profiles across diverse roles in education. By leveraging this document, educators can implement more effective, data-driven instruction and better meet the individual needs of all students.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Acceleration Companion



Introduction

Students of all learning capacities and intellectual challenges and gifts use the cognitive domains assessed in *Cognitive Abilities Test*™ (*CogAT*®). For this reason, it is logical to apply those relative strengths (Verbal [V+], Nonverbal [NV+], and Quantitative [Q+]) to the way we teach students.

When teachers use ability profile data to differentiate, offer strategic flexible grouping, and build in tiered supports, students are being invited to learn in modes most comfortable to them, promoting their best learning.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize CogAT data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How do I know what to look for in the classroom as an observer that will help me ensure ability profiles are being used as part of the acceleration programming?

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson—if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.
>
> When observing for effective acceleration practice within a classroom, you will likely be seeking a demonstration of differentiation according to readiness, as this will be where you see the preparedness levels of a student being addressed. Tiered assignments, tutors, distance learning, and more can be demonstrations of differentiation for acceleration.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Preparation for/Response to Student Needs						
Evidence of advanced preparation for a variety of students, efficiency in addressing needs						
PLC Questions 3 and 4 are clearly addressed in teaching and/or grouping methods						
Scaffolding is promoted through strategic use of *Ability Profiles*						
VI. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner; scaffolding/personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make ability profiles from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: How does this work within our existing curriculum? (Which parts are nonnegotiable, and where do teachers have creative license?)

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. **Verbal (V+)**, **Nonverbal (NV+)**, and **Quantitative (Q+)** thinking skills are universally applicable and will work embedded in any curriculum you support.

Q: What is the vertical alignment?

> **A:** In acceleration, the curriculum is not changed or modified. It is just accelerated, or completed faster. The vertical alignment that has been determined does not change, but you will find teachers needing to collaborate to ensure alignment and appropriate instruction.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Application	Differentiation Strategies	Justification
Conversational Roundtables	Differentiation Type • Content • Process • Product Differentiation Approach • Readiness Levels Conversational Roundtables make it easy for students to have focused and academic discussions while exploring new topics or concepts. They can be used for engaging introverted learners, as well as leveling the playing field for students who may have an age gap due to accelerated programming.	**Curriculum Compacting:** The curriculum is adjusted so the student's instruction entails reduced amounts of introductory activities, drill, and practice. Instructional experiences may also be based on relatively fewer instructional objectives compared to the general curriculum. The time saved may be used for more advanced content instruction or to participate in enrichment activities. Instructional goals should be selected on the basis of careful analysis of their roles in the content and hierarchies of curricula. The parsing of activities and goals should be based on pre-instructional assessment. Often the pre-assessment is accomplished through individual unit testing, followed by advanced activities for students who score near the Ceiling. Appendix A: Definitions of Acceleration Interventions
Inquiry Learning	Differentiation Type • Content • Process • Product Differentiation Approach • Readiness Levels Inquiry Learning fosters the ability to ask questions and dig for answers, enticing all gifted students and/or those in accelerated programming to make new meanings, anticipate concepts, and elevate their own critical thinking skills.	**Continuous Progress:** The student is given content progressively as prior content is completed and mastered. The practice is accelerative when the student's progress exceeds the performance of chronological peers in rate and level. Appendix A: Definitions of Acceleration Interventions



©2024 Riverside Assessments, LLC. All rights reserved.

Application	Differentiation Strategies	Justification
Think Like a Disciplinarian	Differentiation Type • Content • Process • Product Differentiation Approach • Learning Profiles • Student Interests Think Like a Disciplinarian allows students to take on the roles of professionals in varying fields of study. This practice builds empathy, which can be an incredibly important life skill not only for the student in the accelerated programming, but the students around the accelerated student as well.	**Curriculum Compacting:** The curriculum is adjusted so the student's instruction entails reduced amounts of introductory activities, drill, and practice. Instructional experiences may also be based on relatively fewer instructional objectives compared to the general curriculum. The time saved may be used for more advanced content instruction or to participate in enrichment activities. Instructional goals should be selected on the basis of careful analyses for their roles in the content and hierarchies of curricula. The parsing of activities and goals should be based on pre-instructional assessment. Often the pre-assessment is accomplished through individual unit testing, followed by advanced activities for students who score near the Ceiling. **Appendix A: Definitions of Acceleration Interventions**
3-2-1 Exit Ticket	Differentiation Type • Product Differentiation Approach • Learning Profiles Exit Tickets provide an easy, high-order thinking method for conducting formative assessment to facilitate respectful tasks (activities that are designed to grow the students from where they are without assumptions of prior knowledge or skills).	**Formative Assessment:** It is important to think about formative assessments as not just those formalized pencil-and-paper forms, but all of the strategies that teachers employ in the classroom to understand, in the moment, what students want to do, what they're ready to work on next, and how to best provide them with the kinds of instruction or the approaches that will help get them there. Formative assessment is the linchpin of all that. This holds true both for accelerating learning and for learners in accelerated programming. **How to Use Formative Assessment to Accelerate Learning**
CAP Activity	Differentiation Type • Process Differentiation Approach • Learning Profiles CAP Activities, among many other benefits, link like-minded thinkers together. Students who are analytical in their dominant domain can work together on a task and find their common ground while also isolating the new learning from unintended barriers (like asking analytical students to do something highly creative in their thinking domain). This approach honors the students' natural thinking strengths and fosters effective collaboration.	**Curriculum Compacting:** The curriculum is adjusted so the student's instruction entails reduced amounts of introductory activities, drill, and practice. Instructional experiences may also be based on relatively fewer instructional objectives compared to the general curriculum. The time saved may be used for more advanced content instruction or to participate in enrichment activities. Instructional goals should be selected on the basis of careful analysis of their roles in the content and hierarchies of curricula. The parsing of activities and goals should be based on pre-instructional assessment. Often the pre-assessment is accomplished through individual unit testing, followed by advanced activities for students who score near the Ceiling. **Appendix A: Definitions of Acceleration Interventions**

©2024 Riverside Assessments, LLC. All rights reserved.

Application	Differentiation Strategies	Justification
Graphic Organizers/ Details Deep Dive	Differentiation Type • Content • Process • Product Differentiation Approach • Readiness Levels Graphic organizers can serve as ways of taking in and sorting new content, restructuring understandings and seeing bigger connections, or planning an argument or writing assignment. Additionally, they can serve as a method of formative assessment. Graphic organizers are appealing to all students, but students in acceleration programming may find the content overwhelming at times, and graphic organizers can help them simplify that content.	**Self-Paced Instruction:** With this option, the student proceeds through learning and instructional activities at a self-selected pace. Self-paced instruction is a subtype of continuous progress acceleration. Self-paced instruction is distinguishable from the more general continuous progress in that the student has control over all pacing decisions. Most self-paced instructional opportunities are provided within a larger instructional plan or Individualized Education Plan (IEP) for the younger student. Appendix A: Definitions of Acceleration Interventions

Ability Profiles can help you make decisions for appropriate instructional measures, such as the following:

Subject-Matter Acceleration/Partial Acceleration: Also known as content-based acceleration, this practice allows students to be placed in classes with older peers for a part of the day (or with materials from higher grade placements) in one or more content areas. Subject-matter acceleration may be accomplished by the student either physically moving to a higher-level class for instruction (e.g., a second-grade student going to a fifth-grade reading group) or using higher-level curricular or study materials while remaining in the original classroom. Subject-matter acceleration may also be accomplished outside of the general instructional schedule (e.g., summer school or after school) or by using higher-level instructional activities on a continuous progress basis without leaving the placement with chronological-age peers.

Often, content-based acceleration is accomplished by a whole class where the materials are deliberately advanced by one year. Honors classes at middle and early high school may choose to provide such advanced learning.

Grade-Skipping: A student is considered to have grade skipped if they are given a grade-level placement ahead of chronological-age peers. Grade-skipping may be done at the beginning of or during the school year. *Radical acceleration* is any whole-grade acceleration that is two (Stanley, 1976) or more (Gross, 2004) years above the student's grade based on chronological years.

Distance Learning Courses: The student enrolls in coursework offered by an outside-of-school organization. Traditionally called *correspondence courses* and offered by mail, courses are increasingly offered online by a number of university-based and for-profit entities. The student may work on the computer at home or during school time.

Local teachers are not responsible for instruction, although they may be responsible for supervising the students while they are working on the computer and are often responsible for assigning grades and assuring credit. Parents often pay for these courses, and the typical goal is for the student to earn advanced credit for the work completed.

©2024 Riverside Assessments, LLC. All rights reserved.

Extracurricular Programs: Students elect to enroll in coursework, after-school programs, or summer programs that confer advanced instruction and/or credit. Talent search programs are a good example of an extracurricular program offering accelerated classes during the summer. Most of these classes employ fast-paced learning and are content-based (Olszewski-Kubilius, 2015).

Concurrent/Dual Enrollment: The student takes a course at one level and receives concurrent credit for a parallel course at a higher level (e.g., taking algebra at the middle school level and receiving credit at both the middle school and the high school level). Another example of dual enrollment courses is provided by a College in High School program, where a high school student takes a class taught by a high school teacher who has been specially selected and trained by a local college or university; college credit is awarded to the student upon successful completion of the course. This option is most often used to compress high school and college coursework.

Advanced Placement (AP™): The student takes a course (usually while in high school) that may confer college credit or placement upon successful completion of a standardized examination (e.g., achieving a 3 or higher on a scale of 1 to 5). High school teachers receive specialized training before teaching AP courses. Students may take an AP examination without first taking the AP course at whatever age they wish as long as prerequisites have been met for math and science courses.

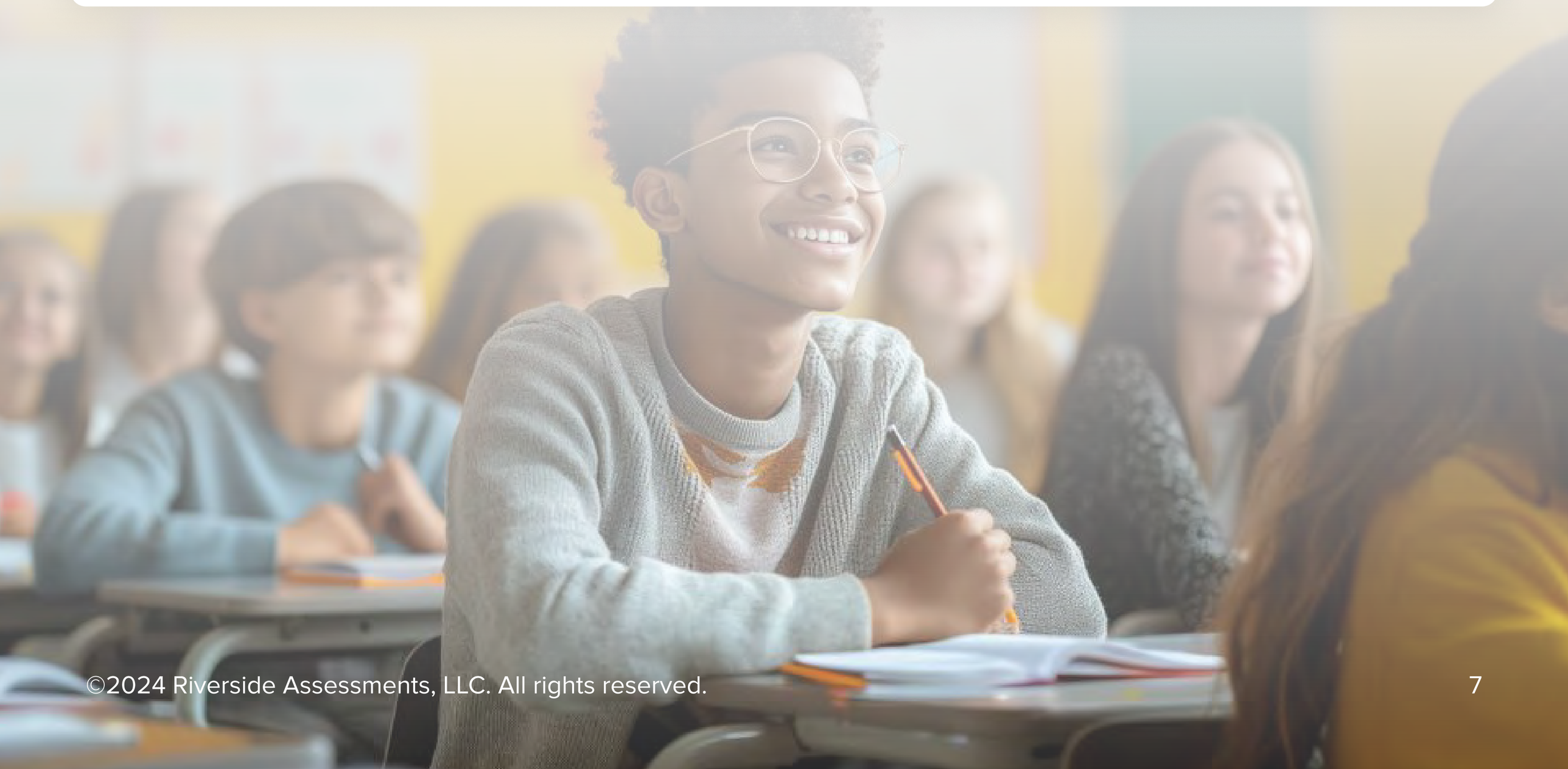
This is by no means a comprehensive list, but the Acceleration Institute offers more ideas and implementation practices.

References

Southern, W. T., & Jones, E. D. (2015). Types of acceleration: Dimensions and issues. In S.G. Assouline, N. Colangelo, J. VanTassel-Baska & A. Lupkowski-Shoplik (Eds.), A nation empowered: Evidence trumps the excuses holding back America's brightest students (Vol. 2, pp. 9–18). Belin-Blank Center, College of Education, University of Iowa.

Sparks, S. (2023). How to use formative text to accelerate learning. EducationWeek. https://www.edweek.org/teaching-learning/how-to-use-formative-assessment-to-accelerate-learning/2023/04

Acceleration Institute
Developing Academic Acceleration Policies (2018). Appendix A, pg 1-3. Adapted from Southern, W.T. & Jones, E.D. (2015). Types of acceleration: Dimensions and issues. In S.G.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Students Who Are Economically Disadvantaged and *CogAT*



Who are the students who are economically disadvantaged?

The number of students living in economically disadvantaged conditions is rising. According to *EducationWeek*, in 2023, almost 14% of children under the age of 18 in the United States lived in poverty, which is up from 2022 (Sparks, 2024). This means that a significant percentage of our student body is living in a situation that could be damaging to their physical health, their emotional well-being, and their intellectual development.

Houston Landing defines *economically disadvantaged* as follows:

> A student is considered economically disadvantaged—also referred to as ***educationally disadvantaged***—if they qualify to receive free or reduced-price lunch through the National School Lunch Program. The national guidelines for the program also include free or reduced lunches for families who receive federal assistance such as Supplemental Nutrition Assistance Program, as well as students who are homeless, migrant students, and students in foster care. (Perez, 2024)

There are certain challenges in education that accompany economic disadvantage. For example, these students are more likely to drop out of high school and less likely to graduate from high school on time. They may experience instability in their family life, housing, and/or finances, and they may live in neighborhoods with limited access to transportation and job opportunities.

How do we support students who are economically disadvantaged?

Meaningful relationships:
Teachers, counselors, and school staff can help build confidence and support students.

Wraparound support:
State and local leaders can provide referrals to health care, housing, transportation, and childcare assistance

Early childhood education:
This can equip students with the tools they need before entering public school.

Positive classroom culture
Teachers can create a classroom culture that encourages participation and success for all students.

©2025 Riverside Assessments, LLC. All rights reserved.

Some of this moves beyond the purview of the public educator, but we can absolutely create a positive classroom culture and foster meaningful relationships. When we do these things, we create a place where students feel safe and stable, comfortable to fail and make mistakes, likely to ask for help when needed, and willing to believe they can achieve great things.

How do the Ability Profiles relate to students who are economically disadvantaged?

Part of fostering a great relationship with a student is showing them you know who they are, how they learn, and that you ***believe*** they can learn. Utilizing the *Ability Profiles* is an excellent way to communicate this messaging to your students. You are using their unique strengths to grow them as learners and targeting their relative weaknesses to build a more balanced intellectual. It is this kind of tailored instruction that will yield the best results for the students and prepare them for the next steps in their lives.

In sum:

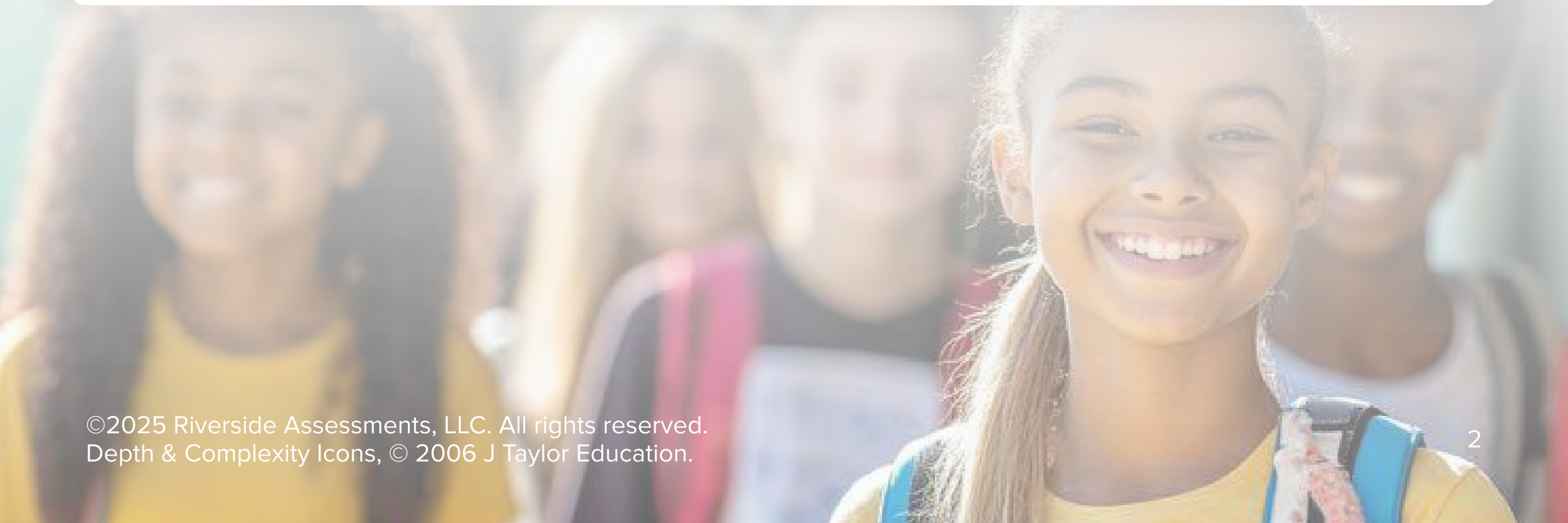
- Students who are economically disadvantaged are in all our classes, and they need us to foster a sense of community, belief, stability, and consistency.
- Through building positive relationships, we can improve the likelihood of student success for those who are economically disadvantaged.
- The *CogAT* batteries can help us show our students we are working to meet their specific needs and utilize their specific strengths for intellectual growth and development.

References

Perez, A. (2024). *What does it mean when a student is considered economically disadvantaged?* Houston Landing. https://tendingpaths.wordpress.com/2022/12/12/updated-autism-adhd-giftedness-venn-diagram/

Sparks, S. D. (2024). More children are living in poverty. What this means for schools. *EducationWeek*. https://www.edweek.org/leadership/more-children-are-living-in-poverty-what-this-means-for-schools/2024/09

Supporting Economically Disadvantaged Students. (n.d.). Illinois State University. https://icsps.illinoisstate.edu/ images/pdfs/CTE/Special_Populations_Resources/Super_Strategies/Economically_Disadvantaged_ISBE.pdf



©2025 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

CogAT® Riverside Insights®

Multilingual Learner Companion Overview



Ask educators what they most need, and many will agree that time is their most precious commodity. The Multilingual Learner Companion is designed to save time for educators who work with multilingual learners by providing resources they can use in creating targeted instruction that addresses these students' specific learning needs related to both ability and language. When teachers use *Ability Profile* data to differentiate, offer strategic flexible grouping, and build in language supports, students are being invited to learn in modes most comfortable to them, promoting their best learning. When administrators have tools to use in determining if this type of learning is occurring, they can better support best practices in instruction. The Multilingual Learner Companion is a handy, go-to resource for making this happen.



What makes the Multilingual Learner Companion unique is its guidance and resources for administrators and educators in addressing verbal, quantitative, and nonverbal ability as well as support for language development. A K–8 *Cognitive Abilities Test*™ (*CogAT*®) Informed Differentiation Walkthrough Form provides administrators specific guidance for observable evidence of differentiation, use of *CogAT Ability Profiles*, and language support. A chart relating *CogAT* profile areas with stages of language development provides educators with specific sheltered instruction strategies for six stages of language development categorized by verbal, quantitative, and nonverbal abilities. In addition, a chart of learning strategies shows teachers how they can differentiate sample instructional strategies for multilingual learners. Justification for each type of differentiation includes links to additional information/resources. A lesson planning template is also provided with considerations for multilingual learners. Finally, questions and answers throughout the document guide educators in this process of transforming their existing planning, curriculum, and instruction to better meet their specific needs and strengths of their multilingual learners.

©2024 Riverside Assessments, LLC. All rights reserved.

Teachers new to using the Multilingual Learner Companion may want to begin by using the *CogAT* profiles and student language proficiency levels to focus on student strengths in lesson planning within their existing curriculum. Reluctant learners are encouraged and motivated when they approach learning, especially areas of weakness, through their strengths. For example, students with nonverbal strengths might be given realia, manipulatives, or hands-on activities to help with making the content comprehensible. Students with quantitative strengths might find graphs, charts, and diagrams helpful. Students with verbal strengths might enjoy working with a partner to talk through the content or find a buddy-reading activity helpful. Teachers can use the chart provided to select the most effective sheltered instruction strategy related to both the student's stage of language acquisition and strength.

As teachers become comfortable in this level of planning, they can begin to use other parts of the Multilingual Learner Companion to incorporate instructional strategies differentiated for both profile strength and language ability and to create new lessons using all of the resources. They can also begin to use other resources in the Instructional Strategies Toolkit to find help in differentiating instructional strategies by profile strength and for help in creating instruction which requires students to think in more in-depth, complex ways. The Lesson Design Template also offers additional examples of lessons that incorporate all levels of differentiation.

In summary, using the Multilingual Learner Companion can help prevent hours spent in pulling together all of the resources needed to structure curriculum and instruction to address the strengths and meet the needs of multilingual learners. Once administrators and educators begin to explore its use and see the help it provides, this will truly become their go-to lesson planning companion.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

SPED 504 Companion



Introduction

Students of all learning capacities, intellectual challenges, and gifts use the cognitive domains assessed in the *Cognitive Abilities Test*™ (*CogAT*®). For this reason, it is logical to apply those relative strengths (verbal, nonverbal, and quantitative) to the way we teach students. This works for students in special student services.

When teachers use *Ability Profile* data to differentiate, offer strategic flexible grouping, and build in tiered supports, students are being invited to learn in modes most comfortable to them, promoting their best learning.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *CogAT* data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms?

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson —if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.
>
> This form has a section for meeting student needs specifically, including the application of Individualized Education Program (IEP) and Section 504 accommodations and modifications.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8 (Special Education/504)

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Preparation for/Response to Student Needs						
Evidence of advanced preparation for a variety of students, efficiency in addressing needs						
Evidence of IEPs and 504 accommodations and modifications in lesson						
VI. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilized thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilized Gardner's Multiple Intelligences; scaffolding/ personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make *Ability Profiles* from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: Is there a lesson plan template they can follow? A decision guide?

> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind.

Q: How does this work within our existing curriculum? Which parts are nonnegotiable, and where do teachers have creative license?

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. **Verbal (V+)**, **Nonverbal (NV+)**, and **Quantitative (Q+)** thinking skills are universally applicable and will work embedded in any curriculum you support. For the Special Education department, you likely already work to inject student accommodations and modifications into core curricular areas. This is simply enhancing that injection. You can use the lesson templates (and/or work with the general teachers) to improve learning experiences for your students within the existing curriculum. The only nonnegotiables are that you must use the *Ability Profile* data to inform decisions about instruction and continue to employ the required accommodations and modifications as stipulated in IEPs and 504 documents.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart below shows you some of the vertical alignment you can find in these resources. For example, in the **Q+ Strength** column, the "Right or Wrong?" Graphic Organizer is listed for all age groups, from K-2 up through 9-12. The organizer remains about the same, but increased in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: How will this help with professional learning community (PLC) question 3?

> **A:** Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS (multi-tiered system of supports), reteaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.
>
> Special Education serves PLC Question 3 as a foundation of its programming. Whether through RTI or establishing 504s and IEPs, Special Education tackles the issue of what to do if the students don't learn something, struggle to understand it, or simply don't have the foundation to receive the learning yet. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is our job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.

Q: Do you take into account twice-exceptional learners in this playlist/toolkit/system/approach?

> **A:** There is an entire section in the Differentiation Document and an Insights Companion for twice-exceptional learners.

Q: Do student modifications and accommodations fit into this instruction?

> **A:** Absolutely they do! We can utilize students' relative strengths regardless of stanine, so any student with **V+ relative strength** can benefit from these strategies, and so on. And you may even see more noticeable growth because you are offering learning in their relative strength.
>
> Instructional accommodations work well in any curriculum and at any grade level. They are sometimes affective/environmental measures to help students find success. Examples include headphones for students with attention deficit disorder (ADD), attention-deficit/hyperactivity disorder (ADHD), or Combination, or speech-to-text software for students with dyslexia. These measures can reduce unnecessary stress, preventing a fight-or-flight response, as well as offering the supports needed for the student to achieve the learning objective. Accommodations operate without changing the learning objectives and aim to offer necessary and specific supports to students to achieve the established learning objective of the lesson.
>
> Modifications make bigger changes to the content being learned or the extent of demonstration of learning, perhaps simplifying the learning process to achieve this. Here you see tiered lessons where there may be fewer questions for a student to address or the replacement of an iconic pathway with an iconic prompt to simplify the neurological task while still challenging the learner.
>
> Regardless of the need from a student, whether accommodation, modification, or both, all students have a relative strength that can be discovered through cognitive *Ability Profile* data and should be leveraged as often as possible to help the learner achieve their greatest individual growth.

©2024 Riverside Assessments, LLC. All rights reserved.

Novice

Teachers are just learning about *Ability Profiles*; most lessons will not yet use *Ability Profiles* for decision making, but occasional activities may address *Ability Profiles* for extension or enrichment

Emerging

Teachers are experimenting with new lessons and ideas based on *Ability Profiles*; some mistakes may be made, but efforts are clear to utilize *Ability Profiles* in thinking tasks, grouping mechanisms, assessments

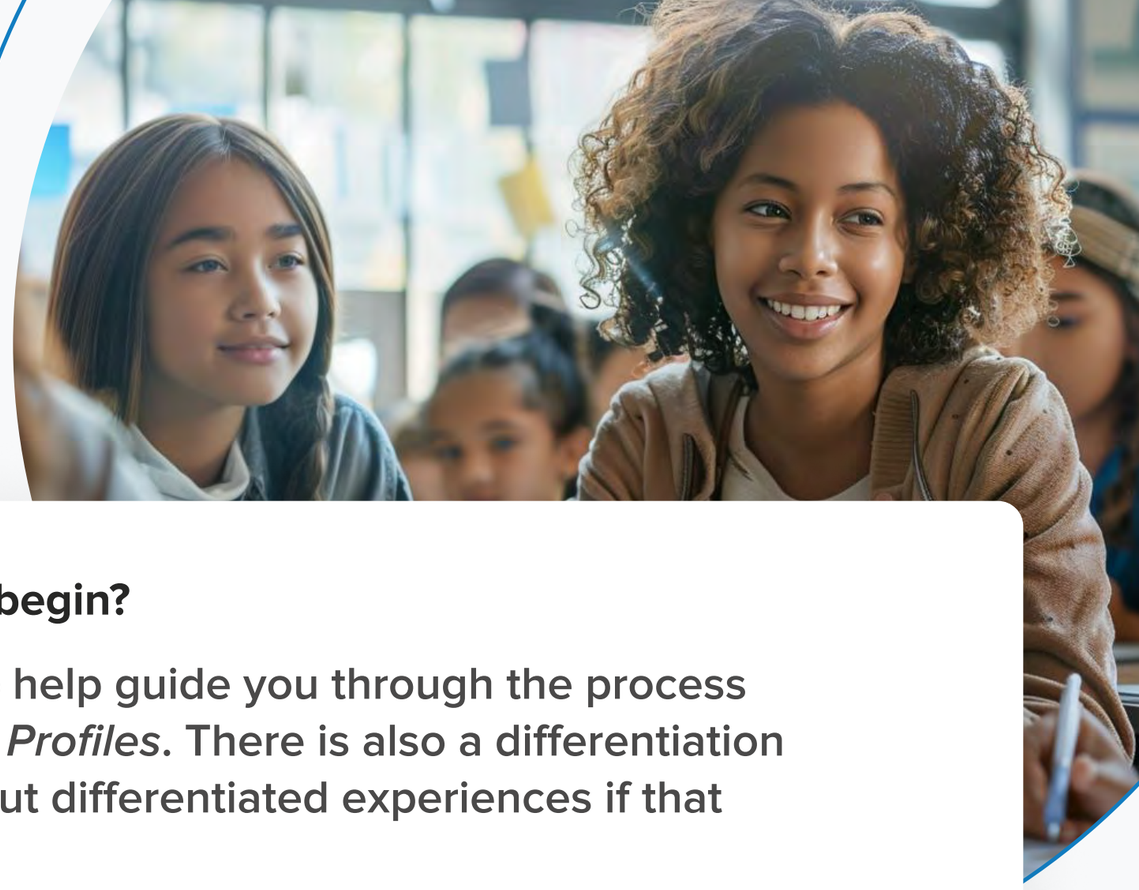
Effective

Teachers have been experimenting with *Ability Profiles* and understand how to use them to inform their instruction; lessons frequently and accurately reflect the *Ability Profile* data to offer best learning experiences for students



©2024 Riverside Assessments, LLC. All rights reserved.

Teacher Questions to Address



Q: How do I use *Ability Profiles* to differentiate? Where do I begin?

> **A:** The lesson template has many embedded questions to help guide you through the process of designing the learning experiences informed by *Ability Profiles*. There is also a differentiation resource document to help you with decision making about differentiated experiences if that is newer for you or the generalist you are supporting.

Q: Am I supposed to use these for every lesson every day?

> **A:** The short answer is no. It would be an unreasonable ask to expect any teacher to differentiate everything about their teaching all day long. These resources are here to help you see how helpful the data from *CogAT* can be in your teaching. Provided in these resources are lesson plans as well as links to support documents. Start using what makes the most sense to you in your established pedagogy, and then as you get comfortable, try new things and challenge yourself to include more and more differentiation by *Ability Profile*. You will find that including these resources in your teaching gets easier, and you will use them more strategically to promote student growth. And as you take this path toward using the *Ability Profiles* yourself, also guide your co-teacher or the generalists you support in the same way.

Q: Where can I get extra support with *CogAT,* Depth/Complexity Icons, Differentiation, etc.?

> **A:** The resources you need to use the toolkit live in Companion pieces and embedded links. Simply follow those links to read more about MTSS, SPED/504, 2e learners, differentiation in general, the Icons for Depth and Complexity, English Language Arts and Reading (ELAR), Mathematics, and anything else you may have questions about. Still can't find what you need? Visit CogAT.com for more resources including blogs and videos.

Q: Which elements are nonnegotiable, and where do I have creative leeway?

> **A:** The structure of lessons is guided in the lesson template, but you can use the lessons for anything you are teaching or helping another teacher teach, so this works within the curriculum you already have. You can be very creative in how you develop and design learning experiences, but make sure you are using the *Ability Profiles* as outlined in these resources to guide you as you work to meet students' needs and grow all your learners.

Q: How does this work with other instructional initiatives like PBL, PLCs, RTI, MTSS, Flexible Grouping, etc.?

> **A:** The lesson template is designed in such a way that this will work with any other initiative your school or district may be exploring. Lessons can be built into problem-based learning (PBL), and they are differentiated to work with PLC questions 3 and 4, as well as MTSS and RTI. The toolkit also utilizes so many approaches to grouping: groups by interests, by learning profiles (*Ability Profile* data), groups by readiness, in pairs, triads, groups of four, etc. Students will truly build a community when you create so many types of groups all with strategic purpose, and when you can work with your coteachers or classrooms with high concentrations of special needs learners, you can help close the gaps between all learners through these grouping mechanisms.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Subpopulation	Application	Differentiation Strategies	Justification
Special Education/504	**Conversational Roundtables**	Reduce the number of boxes the students are expected to discuss (two icons instead of four) and offer iconic prompts to further support their discussion (see example). This way they are getting a modified experience but still being challenged cognitively.	For students who need a reduced load, in addition to helping the student avoid fatigue and burnout, the point is to assess the student's knowledge, not the student's ability to do the same thing 20 times (Oettinger, 2023).
	Inquiry Learning	Reduce the number of tasks they are expected to complete as part of the discovery process. Also, build in tiered support so students don't feel overwhelmed by the self-direction of the inquiry learning task. Teachers can also work more directly with students needing extra support. This way they are getting a modified experience but still being challenged cognitively.	For students who need a reduced load, in addition to helping the student avoid fatigue and burnout, the point is to assess the student's knowledge, not the student's ability to do the same thing 20 times (Oettinger, 2023). Tiered assignments are developed using varied levels of complexity of the task, depth, and abstractness for students who are ready for an additional "push," and various degrees of scaffolding or direction for students needing additional support (EL Education, n.d.).
	3-2-1 Exit Ticket	Reduce the number of boxes the students are expected to discuss (two icons instead of three, or one response per icon) and offer iconic prompts to further support their discussion. This way they are getting a modified experience but still being challenged cognitively.	Offering sentence stems can scaffold the students' learning by increasing the level of sentence stems based on student progress and need (Accommodation Central, n.d.-b). This offers the opportunity to build skills for students of all abilities.
	CAP Activity	These students may benefit from a terms list if they are being asked to use new vocabulary. You could allow them to offer visual representations of ideas to allow the brain work to happen but to keep it focused on the content and not the skills of reading or writing. Allow the student(s) to have the text read to them.	Developing resources for the student's use, such as clarifying vocabulary words, rewording complex questions, paraphrasing excerpts, and providing definitions, visual representations (e.g., pictures, photographs, animations), or prereading text prior to a selection can help isolate the learning happening without focusing on secondary challenges (Accommodation Central, n.d.-a).

©2024 Riverside Assessments, LLC. All rights reserved.

Subpopulation	Application	Differentiation Strategies	Justification
Special Education/504	**Graphic Organizer: Details Deep Dive**	Reduce the number of boxes/ icons/segments the students are expected to discuss (two icons instead of four) and offer iconic prompts to further support their discussion. This way they are getting a modified experience but still being challenged cognitively.	For students who need a reduced load, in addition to helping the student avoid fatigue and burnout, the point is to assess the student's knowledge, not the student's ability to do the same thing 20 times (Oettinger, 2023). Graphic organizers, sometimes called webs or concept maps, can help these students more easily process information. More specifically, these tools allow students to: • Organize information • See the relationships between ideas • More easily understand, remember, and apply information (IRIS Center, n.d.)

References

Accommodation Central. (n.d.-a). Content and language supports. https://acentral.education/accommodations/content-and-language-supports

Accommodation Central. (n.d.-b). Sentence stems. https://acentral.education/accommodations/sentence-stems

EL Education. (n.d.). Helping all learners: Tiering. https://eleducation.org/resources/helping-all-learners-tiering

IRIS Center. (n.d.). Executive functions (part 2): Strategies to improve students' academic performance. Vanderbilt University. https://iris.peabody.vanderbilt.edu/module/ef2/

Oettinger, C. (2023). Accommodation breakdown: Reduced load. Special Education Action. https://specialeducationaction.com/accommodation-breakdown-reduced-load

Penney, C. (2024). 8 reasons why one on one teaching benefits students. Proximity Learning. https://www.proxlearn.com/blog/8-reasons-why-one-on-one-teaching-benefits-students

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Twice-Exceptional (2E) Insights Companion



Introduction

When we speak about twice-exceptional (2e) learners, we are referring to “intellectually gifted children who have one or more learning disabilities such as dyslexia, attention-deficit/hyperactivity disorder (ADHD), or autism spectrum disorder (ASD)” (Davidson Institute, 2021). The 2e population is on the rise, despite it being “the most under-identified and underserved population in schools” (Davidson Institute, 2021). This population is notoriously difficult to identify, as they are often able to mask their disability with their giftedness, or vice versa. These students are often missing out on appropriate learning experiences and programming that would help them reach their highest potential.

The Davidson Institute suggests the following strategies for supporting 2e students:

- Develop and implement individualized education programs based on their interests and talents
- Accommodate both their academic strengths and academic weaknesses
- Utilize a ***strengths-based approach*** that considers the whole child

There are more suggestions provided through the Davidson Institute website, but for our purposes, we will focus on making the learning experience unique to the student and capitalizing on the learner’s strengths, while growing their academic weaknesses.

When teachers use *Ability Profile* data to differentiate, offer strategic flexible grouping, and build in tiered supports, students are being invited to learn in modes most comfortable to them, promoting their best learning. Each of the learning disabilities listed here (dyslexia, attention deficit disorder [ADD], ADHD, and ASD) carry both learning challenges and learning strengths. For example, a student with dyslexia may be challenged in reading comprehension, but may also be highly visual in their thinking, allowing them to see complex patterns most students cannot.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *Cognitive Abilities Test*™ (*CogAT*®) data in instruction, and how to verify that this is happening in classes.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Need-to-Know Info about 2e:

- These students often mask their struggles because of their giftedness.
- These students may need more processing time, but they will come up with innovative and compelling responses.
- These students can advocate for themselves and their needs.
- These students want to be challenged, so don't focus on their disability; rather, focus on strengthening their abilities.
- Students exhibit remarkable talents and disabling weaknesses.
- 2e learners are often misclassified, neglected, or receive inadequate intervention.
- ***Dyslexia***
  - Dyslexia is a specific learning disability that is neurobiological in origin.
  - It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.
- ***ASD***
  - ASD is a developmental disorder that affects communication and behavior.
  - It is characterized by restrictive or repetitive behaviors, struggles in social interaction, and challenges in general communication.
- ***ADD/ADHD***
  - People with ADHD show a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, and that impacts learning.
  - It is characterized by hyperactivity, inattentiveness, or a combination of both.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

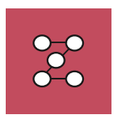
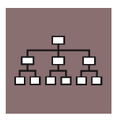
Strength, Stretch, Support



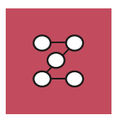
The following charts offer guidance on how to best use the neurological strengths and benefits that accompany the learning challenges for dyslexia, ASD, and ADD/ADHD. You want to utilize the strength(s) you can and then challenge the giftedness quality of the 2e learner through the Depth and Complexity Icons. Then, once you have determined the learning activity, make strategic choices for support to help the learner succeed.

Traits in Dyslexia (Strength)	D&C Icons (Stretch)	Dyslexia Accommodations (Support)
• Identify patterns and reason with abstraction • Creativity, out-of-the-box thinking • Computer skills (organizing data, creating graphs, using computational logic in robotics) • Storytelling • Perform well when asked to write or discuss ideas • Imaginative • Innovative problem-solving • Holistic point of view • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • Highly visual in thoughts • Insatiable curiosity • Experiential learning • Integration, not compartmentalization of new content • Critical thinking	 What biases and content gaps do you see? What might account for those?  Consider this idea from the opposite perspective—what changes and why?  Where can we see this topic/issue/idea in other areas of study?  How do these ideas all work to reinforce the theme?  What patterns do you observe, and why are they significant?	• Speech-to-text/text-to-speech software • Spelling/grammar check • Visuals/graphic organizers • Color-coding • Opportunity to retell right after learning • More time to complete • Preferential seating and groupings • Verbal instructions/Repetition of instructions • Larger print/Fewer Items per page Calculator

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Traits in ASD (Strength)	D&C Icons (Stretch)	Accommodations ASD (Support)
• Detail-oriented • Hyperlexia (decoding written language), strong grammar knowledge • Logical thinking that helps in decision making • Understanding rules and sequences (spelling, syntax, poetry) • Strong rote memory • Independent thinkers, not concerned with what others think • Unique insight from different worldly perspective • Incredible depth of knowledge on subjects of interest • Visual learners/thinkers • Honest/non-judgmental • Elevated math, musical, computer, artistic skills	 What questions do you still have about ____?  What terms might professionals in the field use to discuss this topic?  What trends can you identify, and why might those trends exist?  What patterns do you observe, and why are they significant?  How necessary are the rules or procedures, and why should we recognize those rules?  **What terms, facts, traits, and elements are specific to this topic of study?**	• Verbal instructions/repetition of instructions • Text/instructions in audio format • Choice boards to promote autonomy • Consistent patterns to reinforce expectations • Speech-to-text/text-to-speech software • Spelling/grammar check • Preferential seating and groupings • More time to complete • Visuals/graphic organizers • Color-coding • Computer use/assistive technology • Opportunity to retell right after learning, using pictures

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Traits in ADD/ADHD (Strength)	D&C Icons (Stretch)	ADD/ADHD Accommodations (Support)
• Innovative problem-solving • Recognizing patterns • Creativity, out-of-the-box thinking • Elevated sense of humor (particularly with puns or wordplay) • Highly visual in thoughts • Insatiable curiosity, willingness to try new things • Experiential learning • Integration, not compartmentalization of new content • Increased skills in music, computers, math • Physical abilities • Determination • Leadership abilities	 What do you want to know more about regarding this topic?  What changes over time can you identify as related to this topic?  How do these ideas all work to reinforce the theme?  What patterns do you observe, and why are they significant?  What ethical issues might arise related to this topic?  Where can we see this topic/ issue/idea in other areas of study?	• Verbal instructions/repetition of instructions • Highlight key points • Multi-sensory instruction • Encourage movement where appropriate • Guided collaborations with peers • Divide big assignments into smaller chunks, frequent check-ins • Short bursts of instruction • Preferential seating and groupings • More time to complete • Visuals/graphic organizers/Venn Diagrams • Time for reflection • Opportunity to retell right after learning

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

CogAT Informed Differentiation Walkthrough Form K–8

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Established clear learning goals (knowledge, understanding)						
Acknowledged/celebrated students' ideas						
Students are comfortable asking questions, taking risks, making mistakes						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)						
Used multiple modes of instruction, emphasis on *active* and *engaged* learning						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice						
Lesson focused on critical thinking, issues, or problems (transformational thinking)						
Evidence of Depth and Complexity (icons) in teaching						
V. Preparation for/Response to Student Needs						
Evidence of advanced preparation for a variety of students, efficiency in addressing needs						
Evidence of IEPs and 504 accommodations and modifications in lesson						
Evidence of appropriate challenge is demonstrated through student focus on task, questions, clear "stretch" happening						
VI. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner; scaffolding/personal connections, differing assessments, etc.					

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Director/Leadership Questions to Address



Q: What support will my teachers need to make *Ability Profiles* from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on the Riverside Insights® page and through the online community. There are documents offering guidance on differentiation, icons for depth and complexity, lesson plan templates, Q&A sections, sample lessons and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth, including for students who are 2e learners.

Q: Is there a lesson plan template they can follow? A decisions guide?

> **A:** There is! The Differentiation Document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *ability profiles* in mind. This will help clarify the approaches to supporting 2e learners and guide the decision making for how to best use the profile data and the particular strengths and challenges for each student.

Q: How does this work within our existing curriculum? (Which parts are nonnegotiable, and where do teachers have creative license?)

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. **Verbal (V+),** **Nonverbal (NV+),** and **Quantitative (Q+)** thinking skills are universally applicable and will work embedded in all content areas. For 2e learners, you can support any curricular area at any level of instruction, K–12. You can use the lesson templates (and/or work with the general teachers) to improve learning experiences for your students within the existing curriculum. The only nonnegotiable is that you must use the *Ability Profile* data to inform decisions about instruction.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The table below shows you some of the vertical alignment you can find in these resources. For example, in the Q+ Strength section, the "Right or Wrong?" Graphic Organizer is listed for all age groups, from K–2 up through 9–12. The organizer remains about the same, but increased in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *ability profiles*.

		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x

V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

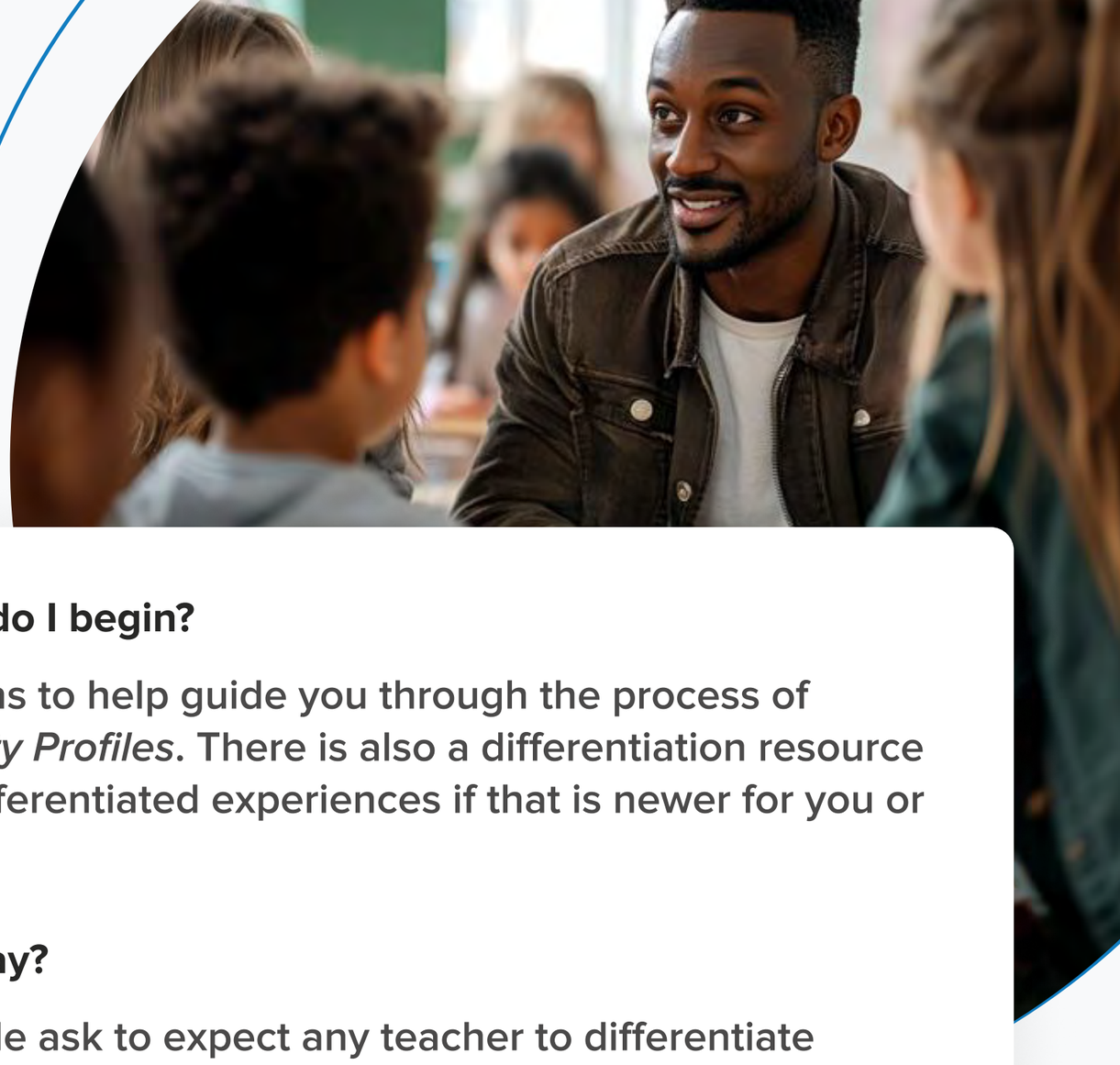
Q: How will this help with PLC questions 3 and 4?

> **A:** This is interesting for 2e learners, because they live squarely in both Q3 and Q4 from PLC. Utilize the Support sections for Question 3 and the Strength and Stretch section for Question 4.
>
> Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS (multi-tiered system of supports), re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.
>
> Special education serves PLC Question 3 as a foundation of its programming. Whether through RTI or establishing 504s and IEPs, special education tackles the issue of what to do if the students don't learn something, struggle to understand it, or simply don't have the foundation to receive the learning yet. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is our job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.
>
> Question 4 is about what to do for students who already know the content or already can do skills being taught. These students need differentiation to challenge them at their level of readiness, and this can be discussed and developed in your PLC. You may offer extension and enrichment activities, should offer pre-assessments to determine levels of readiness, and emphasize interdisciplinary connections. While there are not IEPs specific to giftedness, there are handbooks in each state with guidelines for how to support gifted students, which programming is offered in your district/school, and guidance on how to work with the students and their families to meet their learning needs.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Teacher Questions to Address



Q: How do I use *Ability Profile*s to differentiate? Where do I begin?

> **A:** The lesson template has many embedded questions to help guide you through the process of designing the learning experiences informed by *Ability Profiles*. There is also a differentiation resource document to help you with decision making about differentiated experiences if that is newer for you or the generalist you are supporting.

Q: Am I supposed to use these for every lesson every day?

> **A:** The short answer is no. It would be an unreasonable ask to expect any teacher to differentiate everything about their teaching all day long. These resources are here to help you see how helpful the data from *CogAT* can be in your teaching. Provided in these resources are lesson plans as well as links to support documents. Start using what makes the most sense to you in your established pedagogy, and then as you get comfortable, try new things and challenge yourself to include more and more differentiation by ability profile. You will find that including these resources in your teaching gets easier, and you will use them more strategically to promote student growth. And as you take this path toward using the *Ability Profiles* yourself, also guide your co-teacher or the generalists you support in the same way.

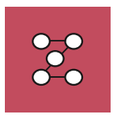
Q: Where can I get extra support with *CogAT*, Depth/Complexity Icons, Differentiation, etc.?

> **A:** The resources you need to use the toolkit live in Companion pieces and embedded links. Simply follow those links to read more about differentiation in general, MTSS, SPED/504, 2e learners, multilingual learners, the Icons for Depth and Complexity, ELAR (English, language arts, and reading), Mathematics, and anything else you may have questions about. Still can't find what you need?

Q: Which elements are nonnegotiable, and where do I have creative leeway?

> **A:** The structure of lessons is guided in the lesson template, but you can use the lessons for anything you are teaching or helping another teacher teach, so this works within the curriculum you already have. You can be very creative in how you develop and design learning experiences, but make sure you are using the *Ability Profiles* as outlined in these resources to guide you as you work to meet students' needs and grow all your learners.

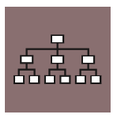
©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Focus Group	Application	Strength	Stretch	Support
Twice-exceptional Learners (2e)	**Conversational Roundtables** *Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing.*	• Creativity, out-of-the-box thinking • Perform well when asked to write or discuss ideas • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • Critical thinking	 Consider this idea from the opposite perspective—what changes and why?  What patterns do you observe, and why are they significant?  What do you want to know more about regarding this topic?	• Visuals/graphic organizers • Preferential seating or grouping • Verbal instructions/ repetition of instructions • Opportunity to retell right after learning, using pictures • Speech-to-text/text-to-speech software
	Inquiry Learning *Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing.*	• Identify patterns and reason with abstraction • Creativity, out-of-the-box thinking • Imaginative • Innovative problem-solving • Insatiable curiosity Holistic point of view Experiential learning • Integration, not compartmentalization of new content • Critical thinking	 What do you want to know more about regarding this topic?  What patterns do you observe, and why are they significant?  How do these ideas all work to reinforce the theme?  What trends can you identify, and why might those trends exist?	• Speech-to-text/ text-to-speech software • More time to complete tasks • Opportunity to retell right after learning, using pictures • Color-coding • Visuals/graphic organizers or outlines • Verbal instructions/ repetition of instructions

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Focus Group	Application	Strength	Stretch	Support
Twice-exceptional Learners (2e)	**3-2-1 Exit Ticket** *Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. (This should be done for each of the three thinking strengths [V+, Q+, NV+] so all students get the appropriate challenge.)*	• Identify patterns and reason with abstraction • Perform well when asked to write or discuss ideas • Holistic point of view Integration, not compartmentalization of new content Critical thinking	 What patterns do you observe, and why are they significant?  How do these ideas all work to reinforce the theme?  What changes over time can you identify as related to this topic?	• Speech-to-text/ text-to-speech software • More time to complete tasks • Visuals/graphic organizers • Verbal instructions/ repetition of instructions • Choice boards to promote autonomy (select icons) • Opportunity to retell right after learning, using pictures
	CAP Activity *Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. (This should be done for each of the three thinking strengths [V+, Q+, NV+] so all students get the appropriate challenge.)* *You can also follow the CAP Activity with elevated reflection questions that utilize iconic combinations. Taking time for higher-order reflection is incredibly important for gifted learners.*	• Identify patterns and reason with abstraction • Creativity, out-of-the-box thinking • Storytelling • Perform well when asked to write or discuss ideas • Imaginative • Innovative problem-solving • Holistic point of view Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • Highly visual in thoughts • Experiential learning • Critical thinking	 Consider this idea from the opposite perspective—what changes and why?  What terms might professionals in the field use to discuss this topic?  What ethical issues might arise related to this topic?  Where can we see this topic/issue/idea in other areas of study?	• Verbal instructions/ repetition of instructions • Choice boards to promote autonomy • Opportunity to retell right after learning, using pictures • Speech-to-text/text-to-speech software • More time to complete tasks • Color-coding Preferential seating or grouping

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Focus Group	Application	Strength	Stretch	Support
Twice-exceptional Learners (2e)	**Graphic Organizers/ Details Deep Dive** *Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing.*	• *Computer skills* (organizing data, creating graphs, using computational logic in robotics) • Perform well when asked to write or discuss ideas • Metaphors, analogies, and real-world examples to connect unfamiliar, abstract concepts to familiar objects and experiences • Integration, not compartmentalization of new content • Critical thinking	 What trends can you identify, and why might those trends exist?  How necessary are the rules or procedures, and why should we recognize those rules?  What terms, facts, traits, and elements are specific to this topic of study?  How do these ideas all work to reinforce the theme?	• Verbal instructions/ Repetition of instructions • Choice boards to promote autonomy • Opportunity to retell right after learning, using pictures • Speech-to-text/ text-to-speech software • More time to complete task

Resources

Bridges 2e Media. 2e News. https://www.2enews.com/

Colorado Department of Education. (2009). Twice-exceptional students: Gifted students with disabilities. Level 1: An introductory resource book (2nd ed.). Colorado Department of Education. https://www.cde.state.co.us/sites/default/files/documents/gt/download/pdf/twiceexceptionalresourcehandbook.pdf

Davidson Institute. (2021, May 31). Twice exceptional: Definition, identification, and characteristics. https://www.davidsongifted.org/gifted-blog/twice-exceptional-definition-characteristics-identification/

Gilger, J., & Hynd, G. (2008). Neurodevelopmental variation as a framework for thinking about the twice exceptional. Roeper Review, 30, 214–228. https://doi.org/10.1080/02783190802363893

Moats, L. C., & Dakin, K. E. (2008). Basic facts about dyslexia and other reading problems. Baltimore, MD: The International Dyslexia Association.

National Institute of Mental Health. (2024). Autism Spectrum Disorder. https://www.nimh.nih.gov/health/topics/autism-spectrum-disorders-asd/index.shtml

Simpson, C. (2019). D & C and the 2e: Using the depth & complexity icons to create appropriately challenging learning opportunities for the twice-exceptional learner. J Taylor Education.

U.S. Department of Education. (2006). Teaching children with attention deficit hyperactivity disorder: Instructional strategies and practices. https://files.eric.ed.gov/fulltext/ED495483.pdf

VanTassel-Baska, J., & Baska, A. (2004). Working with gifted students with special needs. Gifted Education Communicator, 35(2), 4–7.

Weinbrenner, S. (2003). Teaching strategies for twice-exceptional students. Intervention in School and Clinic, 38(3), 131–137. https://www.hoagiesgifted.org/eric/fact/teach-strat.pdf

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

CogAT® Riverside Insights®

504/Special Education and the *CogAT* Ability Profiles



The *Cognitive Abilities Test*™ (*CogAT*®) has been used largely as a means for determining giftedness by school districts around the world, but it is important to understand that *Ability Profiling* applies to all students. We can utilize this information to increase our efficacy in instruction and to increase student growth. What should we know about the *CogAT* and the ability profiles?

Ability Profiles reflect students' strengths, relative strengths, and weaknesses, whether Verbal (V+), Nonverbal (NV+), or Quantitative (Q+). *Cognitive ability* refers to a student's readiness to learn in different situations and environments and demonstrate creative problem-solving skills. Unlike a traditional achievement test, which measures how well a student has mastered the curriculum, *CogAT* shows us how well a child can reason abstractly and identify patterns and relationships in the world around them.



How do we use *Ability Profiles* to inform instruction for students in special education or with 504s? This happens in a few decision-making steps:

1. Determine the students' strengths, relative strengths, and relative weaknesses.
2. Look at the content you are teaching and determine your approach to differentiation.
3. Consider the *Ability Profile* as you make decisions about activities, accommodations, and modifications.
4. Check the student's IEP or 504 to ensure all required supports are achieved and utilized.

©2024 Riverside Assessments, LLC. All rights reserved.

Essentially, we so often focus on the struggles a student has that we neglect the strengths they possess, and these strengths can be the pathway to increased success for students regardless of their capacity or intellectuality. By using these relative strengths and ability data, we can promote stronger reasoning skills in our students, and those who are heading to trade school, the professional workforce, the military, or college, will be far better prepared to handle the tasks before them. We can use these batteries to make our students better at *thinking*.

Critical thinking is an essential aspect of education and a vital part of life's success, as it guides our actions, morals, and beliefs. When we employ the *Ability Profiles* in our lesson design to achieve improved learning and thinking, we can eliminate unintended barriers to learning and isolate the new content being taught.

In other words, for a student who is V+, we can eliminate some frustration in a math course by allowing the student to both show their work and then explain it in writing or orally. V+ learners tend to benefit from the opportunity to explain their thinking. Then, based on support measures stipulated in a 504 or IEP document, we can make adjustments to guide the student and address unique needs, such as a terms list for the explanation portion, simpler numbers for solving problems or equations, or extended time for the task.

All students will benefit from differentiation guided by ability profile data.

Summary

- All students can learn more effectively with *Ability Profile* differentiation.
- *Ability Profiles* help us reduce unintended barriers to learning.
- *Ability Profiles* assist all students of all stanines and relative strengths and weaknesses.

Additional Resource

- **Overview of *CogAT* for Parents**
- **The Thinking Student's Guide to College**



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

SPED/504 Companion Planning Guide



Objective

To ensure that all students receiving special education services or 504 accommodations have access to differentiated instruction and support that aligns with their cognitive abilities and individual needs.

Step-by-Step Planning Process:

To ensure that all students receiving special education services or 504 accommodations have access to differentiated instruction and support that aligns with their cognitive abilities and individual needs.

1. Analyze *Ability Profiles* and IEP/504 Plans:

a. Review student *CogAT profiles* and IEP/504 plans to understand their specific needs, accommodations, and modifications.

2. Develop Individualized Lesson Plans:

a. **Content Differentiation:**
   i. Choose materials that align with the student's *Ability Profile* and IEP goals. For example, use audiobooks for students with dyslexia or graphic organizers for students with ADHD (SPED 504 Companion).

b. **Process Differentiation:**
   i. Provide tiered assignments and scaffolds, such as sentence stems, step-by-step guides, or visual aids (SPED 504 Companion).

c. **Product Differentiation:**
   Allow students to demonstrate learning in various formats, such as oral presentations, visual projects, or written reports (SPED 504 Companion).

3. Implement Accommodations and Modifications:

a. Ensure all accommodations and modifications specified in IEPs/504 plans are implemented. For example, provide extended time, reduce the number of tasks, or simplify language in instructions (SPED 504 Companion).

©2024 Riverside Assessments, LLC. All rights reserved.

4. Collaborate with General Education Teachers:

a. Co-plan lessons with general education teachers to ensure that accommodations and modifications are integrated into the general curriculum (SPED 504 Companion).

5. Use the *CogAT* Walkthrough Form:

a. Utilize the form to regularly assess the effectiveness of differentiated instruction and make adjustments based on student progress and feedback (SPED 504 Companion).

6. Monitor Progress and Adjust Plans:

a. Regularly review student progress and adjust IEP/504 plans as necessary to reflect changing needs and goals (SPED 504 Companion).

Each guide provides a structured approach to planning and implementing the instructional strategies outlined in the respective companion documents, ensuring that all students receive the support and challenge they need to succeed.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the SPED/504 Insights Companion



1. *School Leaders/Administrators*

Implementation: Administrators can use this document to support teachers in implementing effective differentiation and accommodations for students with special needs. By integrating the use of *Ability Profiles* and ensuring compliance with IEPs and 504 plans, administrators can help create a more inclusive learning environment.

How to Use:

- **Training and Professional Development:** Organize training sessions to help teachers understand how to use *CogAT Ability Profiles* to inform instruction and support students with special needs. This could include workshops on differentiating instruction, utilizing various modes of learning, and understanding the legal requirements of IEPs and 504 plans (SPED 504 Companion).
- **Classroom Observations and Support:** Use the provided ***CogAT* Informed Differentiation Walkthrough Form** to conduct classroom observations. Look for evidence of differentiated instruction, such as the use of strategic grouping, varied learning materials, and accommodations/modifications as outlined in IEPs and 504s. Provide feedback to teachers on how they can further refine their practices to better support all learners (SPED 504 Companion).
- **Resource Allocation:** Ensure that teachers have access to the necessary resources, such as assistive technology or specialized instructional materials, to support students with disabilities. Use data from observations and teacher feedback to allocate resources where they are most needed (SPED 504 Companion).

©2024 Riverside Assessments, LLC. All rights reserved.

2. *Teachers*

Implementation: Teachers can use the document to guide their instructional planning and classroom management to better meet the needs of students with special education services and 504 accommodations.

How to Use:

- **Differentiated Lesson Planning:**
  - Utilize the **lesson templates and differentiation resources** provided to plan lessons that incorporate the needs of all students. For example, when planning a lesson on reading comprehension, provide varied materials such as audiobooks for students with dyslexia or visual supports like graphic organizers for students with attention difficulties (SPED 504 Companion).
  - Implement tiered assignments that allow students to engage with the content at different levels of complexity. For instance, when teaching a math concept, provide a basic set of problems for students needing more support and a more challenging set for those ready to extend their learning (SPED 504 Companion).
- **Strategic Grouping and Flexible Instruction:** Use *Ability Profiles* to create strategic groupings. For example, group students who benefit from verbal reasoning together for a discussion-based activity, while providing visual aids and hands-on activities for students with strong nonverbal reasoning skills (SPED 504 Companion).
- **Monitoring and Adjusting:** Regularly assess student progress and adjust instruction as needed. Use the walkthrough form to self-assess the use of accommodations and modifications, ensuring that they are effectively implemented and aligned with student needs (SPED 504 Companion).



©2024 Riverside Assessments, LLC. All rights reserved.

3. *Curriculum Designers*

Implementation: Curriculum designers can use the SPED/504 Companion to create inclusive and accessible curriculum materials that incorporate *Ability Profiles* and support differentiated instruction.

How to Use:

- **Curriculum Adaptation:** Design curriculum materials that include multiple modes of representation and expression, such as text, visuals, audio, and interactive elements. For instance, when developing a history unit, include timelines, infographics, and video summaries alongside traditional texts (SPED 504 Companion).
- **Tiered Resources:** Develop tiered resources for different levels of support. For example, create simplified texts with visual supports for students with reading challenges, and more complex, abstract tasks for students who need additional challenges. This ensures that the core content is accessible to all students while allowing for differentiation based on *Ability Profiles* (SPED 504 Companion).
- **Universal Design for Learning (UDL):** Incorporate UDL principles into curriculum development by ensuring that materials are flexible and designed to accommodate a wide range of learning preferences and needs. For example, provide options for students to demonstrate learning through written reports, oral presentations, or creative projects (SPED 504 Companion).

4. *Special Education Teachers*

Implementation: Special education teachers can use this document to tailor their instruction and support to meet the individual needs of students with disabilities, ensuring that accommodations and modifications are effectively implemented.

How to Use:

- **Individualized Education Programs (IEPs) and 504 Plans:** Use the guide to ensure that all accommodations and modifications specified in IEPs and 504 plans are integrated into classroom instruction. For example, provide students with tools like speech-to-text software for written assignments or graphic organizers to help with note-taking (SPED 504 Companion).
- **Targeted Interventions:** Develop and implement targeted interventions based on students' *Ability Profiles*. For instance, use visual aids and manipulatives for students with strong nonverbal reasoning skills, or focus on developing verbal reasoning through structured language activities for students with those strengths (SPED 504 Companion).
- **Collaboration with General Education Teachers:** Work closely with general education teachers to co-plan and co-teach lessons that incorporate necessary accommodations and modifications. Provide guidance on how to differentiate lessons and assessments to support students with special needs (SPED 504 Companion).

©2024 Riverside Assessments, LLC. All rights reserved.

5. *Gifted and Talented Coordinators*

Implementation: Gifted and Talented (GT) Coordinators can use the document to support twice-exceptional students (those who are gifted and have disabilities) by providing differentiated instruction that addresses both their strengths and challenges.

How to Use:

- **Differentiated Instruction for Twice-Exceptional Students:** Design lessons and activities that offer both acceleration and support. For example, provide complex problem-solving tasks that align with a student's cognitive strengths while offering scaffolds for areas of difficulty, such as using speech-to-text tools for a gifted student with dysgraphia (SPED 504 Companion).
- **Enrichment Opportunities:** Develop enrichment opportunities that are tailored to the strengths of gifted students, such as independent study projects, mentorship programs, or advanced coursework. Ensure these opportunities are accessible to twice-exceptional students by incorporating necessary accommodations (SPED 504 Companion).
- **Individual Support Plans:** Work with special education teachers to create individualized support plans for twice-exceptional students that incorporate both enrichment and accommodations. For example, a student may receive advanced math instruction but also need extra time and breaks to manage attention difficulties (SPED 504 Companion).

By utilizing the SPED/504 Companion, each persona can ensure that instructional practices are inclusive, supportive, and aligned with the specific needs of students. This comprehensive approach enables educators to create learning environments where all students can thrive.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the 2E Insights Companion



1. *School Leaders/Administrators*

Implementation: Administrators can use the Twice-Exceptional Learners Companion document to support teachers in recognizing and addressing the unique needs of twice-exceptional (2e) students. This includes leveraging students' strengths while providing accommodations for their learning challenges, ensuring they receive appropriate and effective educational experiences.

How to Use:

- **Professional Development:** Conduct training sessions to help teachers identify twice-exceptional students and understand their unique profiles. Focus on integrating both the strengths and challenges of 2e students into lesson planning. For example, highlight the importance of using a strengths-based approach that considers the whole child, and offer strategies for developing individualized education programs (IEPs) based on students' interests and talents.
- **Classroom Observations:** Utilize the *CogAT* Informed Differentiation Walkthrough Form to observe classrooms and provide feedback. Look for evidence of differentiation practices that align with 2e student profiles, such as teachers providing advanced, open-ended tasks for giftedness while offering necessary accommodations for disabilities like Dyslexia, ADHD, or ASD.
- **PLC Guidance:** Facilitate discussions in PLCs around the unique needs of 2e learners. Encourage teachers to explore how to provide appropriate challenges (e.g., complex problem-solving tasks for students with advanced analytical skills) while supporting areas of weakness (e.g., using assistive technology for students with dyslexia).

©2024 Riverside Assessments, LLC. All rights reserved.

2. *Teachers*

Implementation: Teachers can use the *ability profiles* to differentiate instruction for twice-exceptional students across content, process, and product. This ensures that all students are engaged, supported, and challenged according to their cognitive strengths and areas of need.

How to Use:

- **Content Differentiation**
  - **For Verbal Learners with Dyslexia (V+):** Offer opportunities for oral presentations or verbal discussions instead of written tasks. Use speech-to-text software to help with writing assignments and provide audio versions of reading materials.
  - **For Nonverbal Learners with Autism Spectrum Disorder (NV+):** Incorporate visual supports like graphic organizers, diagrams, and concept maps. Use structured routines and clear visual schedules to help with transitions and understanding of expectations.
  - **For Quantitative Learners with ADHD (Q+):** Emphasize data analysis, pattern recognition, and logical reasoning in science and math. Use multi-sensory instruction and incorporate physical activities to maintain focus and engagement.
- **Process Differentiation:** Use flexible grouping strategies based on students' strengths and needs. For example, pair a student who is strong in verbal reasoning but struggles with attention with a student who is highly organized and detail-oriented. This allows both students to contribute and benefit from the collaboration.
- **Product Differentiation:** Allow students to choose how they demonstrate their understanding. For example, a student with dyslexia might create a visual project or oral presentation instead of a written report, while a student with ASD might use a digital tool to create a detailed, structured presentation on a topic of interest.



©2024 Riverside Assessments, LLC. All rights reserved.

3. *Curriculum Designers*

Implementation: Design curriculum units that are differentiated by incorporating varied activities and assessments that align with the unique needs of twice-exceptional students. Ensure that the curriculum is flexible and adaptable, allowing for both enrichment and support.

How to Use:

- **Vertical Alignment:**
  - Develop activities that become progressively more complex. For instance, when teaching scientific concepts:
    - **Elementary Level:** Use simple experiments with clear, visual instructions and allow students to explore concepts through hands-on activities.
    - **Middle School:** Introduce more complex experiments and encourage students to design their own investigations based on their interests.
    - **High School:** Engage students in independent research projects that require advanced analysis and synthesis of information, while providing accommodations like extended time and assistive technology as needed.
- **Inquiry Learning and CAP Activities:** Include activities that encourage creative, analytical, and practical thinking. For example, have students investigate a scientific phenomenon and present their findings in a format of their choice, such as a digital presentation, research paper, or video demonstration, ensuring that options are available to accommodate different strengths and challenges.
- **Interdisciplinary Connections:** Incorporate cross-curricular activities that connect various subjects. For example, a unit on historical inventions could include connections to math (data analysis), language arts (writing biographies), and art (designing prototypes).



©2024 Riverside Assessments, LLC. All rights reserved.

4. *Special Education Teachers*

Implementation: Use the document's differentiation strategies to provide targeted support for students with diverse learning needs by adapting instruction to align with their cognitive strengths and areas of need.

How to Use:

- **Tiered Instruction:** Offer tiered assignments to match student ability levels. For example, when teaching about ecosystems, provide a simplified concept map for students with ASD while allowing students with advanced knowledge to create a detailed project that incorporates research and data analysis.
- **Scaffolding:** Use visual supports and step-by-step guides for students who need additional help understanding complex concepts. For example, use graphic organizers to break down a complex writing task into manageable steps for a student with ADHD.
- **Flexible Assessments:** Use alternative assessments that cater to students' strengths. For example, a student with dyslexia might present a project orally, using visual aids, while a student with ASD might use a structured, written format with clear expectations and visual supports.

5. *Gifted and Talented Coordinators*

Implementation: Develop advanced coursework and enrichment opportunities that challenge twice-exceptional students by leveraging their cognitive strengths, promoting deeper exploration, and encouraging independent learning.

How to Use:

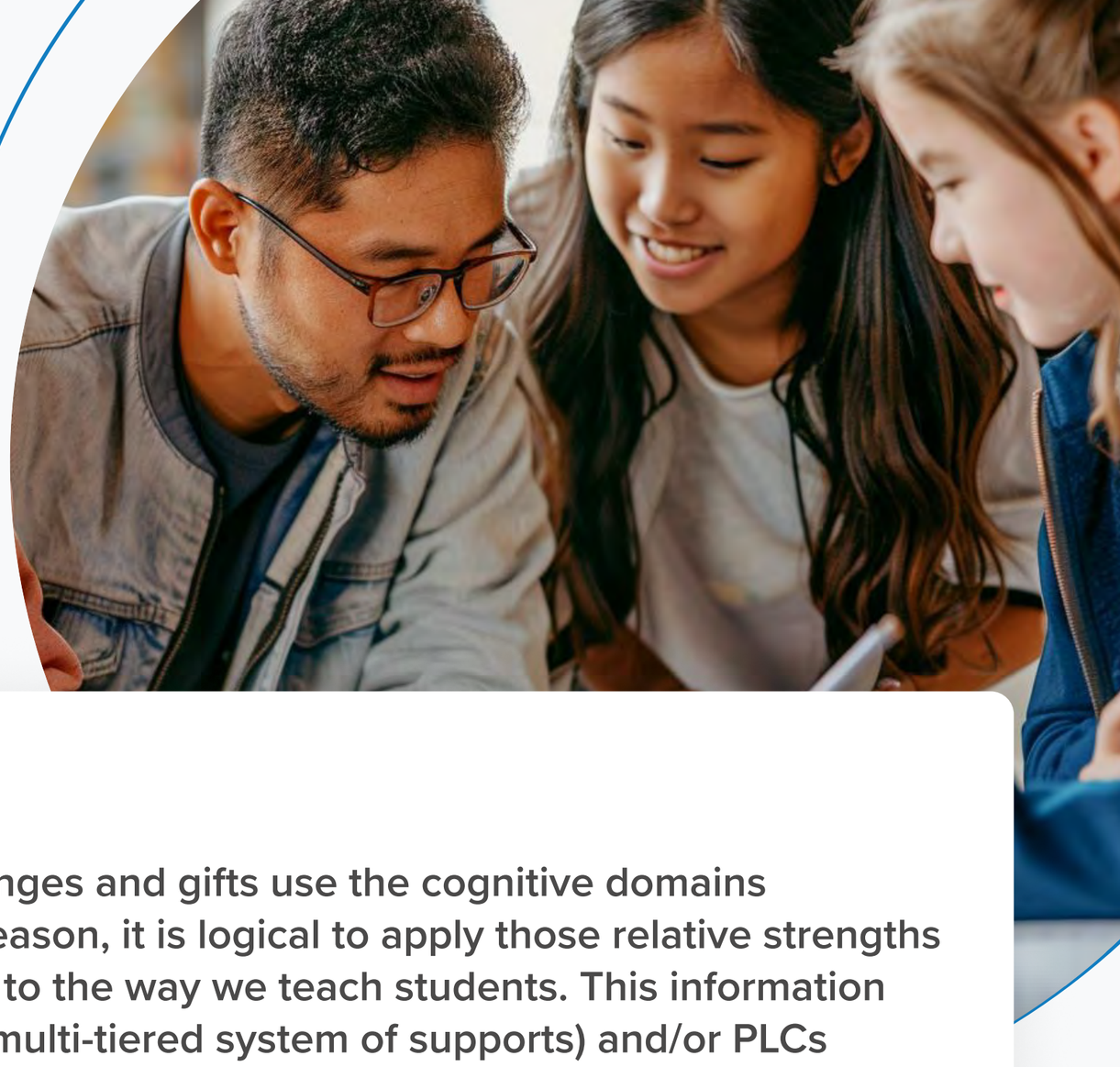
- **Advanced CAP Activities:** Create complex, interdisciplinary projects that require students to think creatively, analytically, and practically. For example, have students research a controversial scientific topic, analyze different viewpoints, and present their findings through a multimedia presentation.
- **High-Level Inquiry Tasks:** Design inquiry-based projects that allow students to explore advanced scientific theories or controversial topics, such as the ethical implications of genetic engineering. Provide opportunities for independent research and encourage presentations in diverse formats, such as TED-style talks or scientific posters.
- **Extended Scientific Analysis:** Offer opportunities for students to engage in extended analysis of complex scientific concepts. For example, during a unit on ethics in technology, students could explore different perspectives on data privacy and then write or present a comparative analysis.

By leveraging the differentiation strategies, *ability profile* data, and a variety of instructional tools provided in the Twice-Exceptional Learners Companion, educators can create engaging, supportive, and challenging learning environments that meet the diverse needs of twice-exceptional students. This ensures a more personalized approach to teaching, promoting both academic growth and a deeper understanding of their unique learning profiles.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

MTSS PLC Companion



Introduction

Students of all learning capacities and intellectual challenges and gifts use the cognitive domains assessed in *Cognitive Abilities Test*™ (*CogAT*®). For this reason, it is logical to apply those relative strengths (**Verbal [V+]**, **Nonverbal [NV+]**, and **Quantitative [Q+]**) to the way we teach students. This information is also incredibly useful for teachers engaging in MTSS (multi-tiered system of supports) and/or PLCs (professional learning communities). MTSS will utilize these *Ability Profiles* to work within those tiers of intervention to get the most growth possible from students. PLCs will be able to use these *Ability Profiles* as they answer the questions "What do I do if the students didn't learn?" and "What do I do with those who already know it?"

When teachers use *Ability Profile* data to differentiate, offer strategic flexible grouping, and build in tiered supports, students are being invited to learn in modes most comfortable to them, promoting their best learning.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *CogAT* data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms?

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson —if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.
>
> This form has a section for meeting student needs specifically, including the application of Individualized Education Program (IEP) and Section 504 accommodations and modifications.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8 (MTSS/PLC)

Teacher: Class/Grade: Observer:	Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment					
Established clear learning goals (knowledge, understanding)					
Acknowledged/celebrated students' ideas					
Students are comfortable asking questions, taking risks, making mistakes					
II. *Ability Profiles*					
Clear tasks for V+, Q+, NV+ identified for students					
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)					
III. Instructional Practices/Routines					
Ability Profiles inform strategic student groupings (pairs, small groups, independent work, etc.)					
Used multiple modes of instruction, emphasis on *active* and *engaged* learning					
IV. Quality Curriculum					
Tasks emphasized thought/meaning vs. drill/practice					
Lesson focused on critical thinking, issues, or problems (transformational thinking)					
Evidence of Depth and Complexity (icons) in teaching					
V. Preparation for/Response to Student Needs					
Evidence of advanced preparation for a variety of students, efficiency in addressing needs					
PLC Questions 3 and 4 are clearly addressed in teaching and/or grouping methods					
Scaffolding is promoted through strategic use of *Ability Profiles*					
VI. Specific Differentiation Using *Ability Profiles*					
Content: Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process: Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product: Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner's Multiple Intelligences; scaffolding/ personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make *Ability Profiles* from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth. These resources will allow more productive collaborative discussions in PLCs and will offer better guidance for teachers as they implement MTSS.

Q: Is there a lesson plan template they can follow? A decision guide?

> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind. This will help clarify the approaches to supporting MTSS and will guide teachers in lesson design after the PLC collaborates on student needs.

Q: How does this work within our existing curriculum? Which parts are nonnegotiable, and where do teachers have creative license?

> **A:** These *Ability Profiles* can inform instructional decisions in any class at any grade level. **Verbal (V+)**, **Nonverbal (NV+)**, and **Quantitative (Q+)** thinking skills are universally applicable and will work embedded in any curriculum you support. For MTSS and PLCs, you can support any curricular area at any level of instruction, K–12. You can use the lesson templates (and/or work with the general teachers) to improve learning experiences for your students within the existing curriculum. The only nonnegotiables are that you must use the *Ability Profile* data to inform decisions about instruction and collaborate effectively in the PLC and as MTSS is employed.

Q: What is the vertical alignment?

> **A:** As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart below shows you some of the vertical alignment you can find in these resources. For example, in the **Q+ Strength** section, the "Right or Wrong?" Graphic Organizer is listed for all age groups, from K–2 up through 9–12. The organizer remains about the same, but increases in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.
>
> For MTSS, when you need to simplify tasks for students, you may find you utilize the approaches from younger groups at first to build the thinking skills for the students as you intervene to improve learning. For PLCs, the tasks for younger groups might present good models for tiering as well.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
	"More Wrong"			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
	"Transformations"			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
	Case Law Review: Verdict? (Colin Seale)			x	x

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: How will this help with PLC questions 3 and 4?

> **A:** Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Responses to this difficulty can include RTI (response to intervention), MTSS, re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans.
>
> Special Education serves PLC Question 3 as a foundation of its programming. Whether through RTI or establishing 504s and IEPs, Special Education tackles the issue of what to do if the students don't learn something, struggle to understand it, or simply don't have the foundation to receive the learning yet. In this case, we offer tiering of iconic prompts throughout the toolkit to show teachers how to find an appropriate level of challenge for students grappling with material while still honoring the *Ability Profiles*. Regardless of stanine, students have cognitive strengths and weaknesses. It is our job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.
>
> Question 4 is about what to do for students who already know the content or already have the skills being taught. These students need differentiation to challenge them at their level of readiness, and this can be discussed and developed in your PLC. You may offer extension and enrichment activities, offer preassessments to determine levels of readiness, and emphasize interdisciplinary connections.

Q: Do student modifications and accommodations fit into this instruction?

> **A:** Absolutely they do! We can utilize students' relative strengths regardless of stanine, so any student with **V+ relative strength** can benefit from these strategies, and so on. And, you may even see more noticeable growth because you are offering learning in their relative strength.
>
> Instructional accommodations work well in any curriculum and at any grade level. They are sometimes affective/environmental measures to help students find success, such as headphones for students with attention deficit disorder (ADD), attention-deficit/hyperactivity disorder (ADHD), or Combination, or speech-to-text software for students with dyslexia. These measures can reduce unnecessary stress, preventing a fight-or-flight response, as well as offering the supports needed for the student to achieve the learning objective. Accommodations operate without changing the learning objectives and aim to offer necessary and specific supports to students to achieve the established learning objective of the lesson.
>
> Modifications make bigger changes to the content being learned or the extent of demonstration of learning, perhaps simplifying the learning process to achieve this. Here you see tiered lessons where there may be fewer questions for a student to address or the replacement of an iconic pathway with an iconic prompt to simplify the neurological task while still challenging the learner.
>
> Regardless of the need from a student, whether accommodation, modification, or both, all students have a relative strength that can be discovered through cognitive *Ability Profile* data and should be leveraged as often as possible to help the learner achieve their greatest individual growth.

©2024 Riverside Assessments, LLC. All rights reserved.

Novice

Teachers are just learning about *Ability Profiles*; most lessons will not yet use *Ability Profiles* for decision making, but occasional activities may address *Ability Profiles* for extension or enrichment

Emerging

Teachers are experimenting with new lessons and ideas based on *Ability Profiles*; some mistakes may be made, but efforts are clear to utilize *Ability Profiles* in thinking tasks, grouping mechanisms, assessments

Effective

Teachers have been experimenting with *Ability Profiles* and understand how to use them to inform their instruction; lessons frequently and accurately reflect the *Ability Profile* data to offer best learning experiences for students



©2024 Riverside Assessments, LLC. All rights reserved.

Teacher Questions to Address



Q: How do I use *Ability Profiles* to differentiate? Where do I begin?

> **A:** The lesson template has many embedded questions to help guide you through the process of designing the learning experiences informed by *Ability Profiles*. There is also a differentiation resource document to help you with decision making about differentiated experiences if that is newer for you or the generalist you are supporting.

Q: Am I supposed to use these for every lesson every day?

> **A:** The short answer is no. It would be an unreasonable ask to expect any teacher to differentiate everything about their teaching all day long. These resources are here to help you see how helpful the data from *CogAT* can be in your teaching. Provided in these resources are lesson plans as well as links to support documents. Start using what makes the most sense to you in your established pedagogy, and then as you get comfortable, try new things and challenge yourself to include more and more differentiation by *Ability Profile*. You will find that including these resources in your teaching gets easier and you will use them more strategically to promote student growth. And as you take this path toward using the *Ability Profiles* yourself, also guide your co-teacher or the generalists you support in the same way.

Q: Where can I get extra support with *CogAT*, Depth/Complexity Icons, Differentiation, etc.?

> **A:** The resources you need to use the toolkit live in Companion pieces and embedded links. Simply follow those links to read more about differentiation in general, MTSS, SPED/504, 2e learners, the Icons for Depth and Complexity, ELAR (English, Language Arts, and Reading), Mathematics, and anything else you may have questions about. Still can't find what you need?

Q: Which elements are nonnegotiable, and where do I have creative leeway?

> **A:** The structure of lessons is guided in the lesson template, but you can use the lessons for anything you are teaching or helping another teacher teach, so this works within the curriculum you already have. You can be very creative in how you develop and design learning experiences, but make sure you are using the *Ability Profiles* as outlined in these resources to guide you as you work to meet students' needs and grow all your learners.

Q: How does the lesson template/toolkit work with other instructional initiatives like problem-based learning (PBL)? PLCs? RTI? MTSS? Flexible Grouping?

> **A:** The lesson template is designed in such a way that this will work with any other initiative your school or district may be exploring. Lessons can be built into PBL, and they are differentiated to work with PLC questions 3 and 4, as well as MTSS and RTI. The toolkit also utilizes so many approaches to grouping: groups by interests, by learning profiles (*Ability Profile* data), by readiness, in pairs, triads, groups of four, etc. Students will truly build a community when you create so many types of groups all with strategic purpose, and when you can work with your coteachers or classrooms with high concentrations of special needs learners, you can help close the gaps between all learners through these grouping mechanisms.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Focus Group	Application	Differentiation Strategies	Justification
MTSS/PLC Q3: What do we do if they didn't learn what they needed from the lesson? If they aren't quite ready for this material yet?	**Conversational Roundtables**	Reduce the number of boxes the students are expected to discuss (two icons instead of four) and offer iconic prompts to further support their discussion (see example). This way they are getting a modified experience but still being challenged cognitively.	For students who need a reduced load, in addition to helping the student avoid fatigue and burnout, the point is to assess the student's knowledge, not the student's ability to do the same thing 20 times.
	Inquiry Learning	Reduce the number of tasks they are expected to complete as part of the discovery process. Also, build in tiered support so students don't feel overwhelmed by the self-direction of the inquiry learning task. Teachers can also work more directly with students needing extra support. This way they are getting a modified experience but still being challenged cognitively.	For students who need a reduced load, in addition to helping the student avoid fatigue and burnout, the point is to assess the student's knowledge, not the student's ability to do the same thing 20 times. Tiered assignments are developed using varied levels of complexity of the task, depth, and abstractness for students who are ready for an additional "push," and various degrees of scaffolding or direction for students needing additional support.
	3-2-1 Exit Ticket	Reduce the number of boxes the students are expected to discuss (two icons instead of three, or one response per icon) and offer iconic prompts to further support their discussion. This way they are getting a modified experience but still being challenged cognitively.	Offering sentence stems can scaffold the students' learning by increasing the level of sentence stems based on student progress and need. This offers the opportunity to build skills for students of all abilities.

©2024 Riverside Assessments, LLC. All rights reserved.

Focus Group	Application	Differentiation Strategies	Justification
MTSS/PLC Q3: What do we do if they didn't learn what they needed from the lesson? If they aren't quite ready for this material yet?	**CAP Activity**	These students may benefit from a terms list if they are being asked to use new vocabulary. You could allow them to offer visual representations of ideas to allow the brain work to happen but to keep it focused on the content and not the skills of reading or writing. Allow the student(s) to have the text read to them.	Developing resources for the student's use such as clarifying vocabulary words, rewording complex questions, paraphrasing excerpts, and providing definitions, visual representations (e.g., pictures, photographs, animations), or prereading text prior to a selection can help isolate the learning happening without focusing on secondary challenges.
	Graphic Organizers/ Details Deep Dive	Reduce the number of boxes/ icons or segments the students are expected to discuss (two icons instead of four) and offer iconic prompts to further support their discussion. This way they are getting a modified experience but still being challenged cognitively.	For students who need a reduced load, in addition to helping the student avoid fatigue and burnout, the point is to assess the student's knowledge, not the student's ability to do the same thing 20 times. Graphic organizers, sometimes called webs or concept maps, can help these students more easily process information. More specifically, these tools allow students to organize information, see the relationships between ideas, and more easily understand, remember, and apply information.
PLC Q4: What do we do if they already know this content or can perform this skill?	**Conversational Roundtables**	Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing.	These tools are powerful in isolation, but become even more powerful when combined with other critical thinking tools. In combination, these tools take understanding to an entirely new level. Show students how to combine the prompts from the Depth and Complexity framework to enhance understanding. The goal is for students to begin to combine the icons themselves as they become more proficient with the different tools.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Focus Group	Application	Differentiation Strategies	Justification
PLC Q4: What do we do if they already know this content or can perform this skill?	**Inquiry Learning**	Increase the challenge for GT students by offering less guidance than what the rest of the class may be getting. GT students are highly engaged when offered inquiry opportunities, but they will need to have some control over the direction of their inquiry. These students may need more clarity about the end-goal, permission to use more sophisticated sources when researching, and more complex ideas to pursue.	These learning opportunities are designed to provide students with opportunities to use critical and creative thinking and problem solving to interpret a challenge and then use open-ended thinking to produce multiple ideas and solutions.
	3-2-1 Exit Ticket	Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. (This should be done for each of the three thinking strengths [V+, Q+, NV+] so all students get the appropriate challenge.)	These tools are powerful in isolation, but become even more powerful when combined with other critical thinking tools. In combination, these tools take understanding to an entirely new level. Show students how to combine the prompts from the Depth and Complexity framework to enhance understanding. The goal is for students to begin to combine the icons themselves as they become more proficient with the different tools.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Focus Group	Application	Differentiation Strategies	Justification
PLC Q4: What do we do if they already know this content or can perform this skill?	**CAP Activity**	Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. (This should be done for each of the three thinking strengths [V+, Q+, NV+] so all students get the appropriate challenge.) You can also follow the CAP Activity with elevated reflection questions that utilize iconic combinations. Taking time for higher order reflection is incredibly important for gifted learners.	These tools are powerful in isolation, but become even more powerful when combined with other critical thinking tools. In combination, these tools take understanding to an entirely new level. Show students how to combine the prompts from the Depth and Complexity framework to enhance understanding. The goal is for students to begin to combine the icons themselves as they become more proficient with the different tools. Reflection has a rich history in education, striving for greater depth of learning through analyzing events, activities or learning experiences. Benefits of reflective practice include greater student ownership of subject knowledge, improved meta-cognition, and more thorough comprehension of complex subject content.
	Graphic Organizers/ Details Deep Dive	Increase the challenge for GT students by combining icons. In this instance, ask them to consider the trend of the patterns they find, or the details that make each rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. The goal is for students to begin to combine the icons themselves as they become more proficient with the different tools.	These tools are powerful in isolation, but become even more powerful when combined with other critical thinking tools. In combination, these tools take understanding to an entirely new level. Show students how to combine the prompts from the Depth and Complexity framework to enhance understanding.

GT: gifted/talented; TLAD: think like a disciplinarian.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

CogAT® Riverside Insights®

Multi-Tiered Support Systems & Professional Learning Communities Companion Overview



Why place Multi-Tiered Support Systems (MTSS) and Professional Learning Communities (PLCs) together?

MTSS and PLCs are aimed at achieving the same goal: figuring out where students are and then addressing their learning needs with the most effective teaching approaches and supports. In both approaches, observations and data yield discussions about student readiness levels for a particular skill or concept and work to determine what to do for students at these various levels:

1. Those who already know how to do this or who already have the learning
2. Those who know the expected amount heading into the lesson
3. Those who likely will struggle with the new content because they aren't quite ready yet

Multi-Tiered Support System		Multi-Tiered Support System	
Tier 1:	Core Instruction is offered to all students. About 80% benefit from tier 1 instruction without further supports needed.	**Question 1:**	What do I want my students to know?
		Question 2:	How will I know if they know it?
Tier 2:	Small group instruction is offered to any student struggling with tier 1 instruction.	**Question 3:**	What will I do if they experience struggles in learning?
Tier 3:	Individualized Intervention for students struggling with content at the tier 2 level.	**Question 4:**	What will I do if the learning is too easy for them, and they need more challenge?

©2024 Riverside Assessments, LLC. All rights reserved.

How do the *Ability Profiles* relate to MTSS and PLC?

Students of all learning capacities and intellectual challenges and gifts use the cognitive domains assessed in *Cognitive Abilities Test*™ (*CogAT*®). For this reason, it is logical to apply those relative strengths (Verbal, Nonverbal, and Quantitative) to the way we teach students. This information is also incredibly useful for teachers engaging in MTSS and/or PLCs.

MTSS will utilize these ability profiles to work within those tiers of intervention to get the most growth possible from students. Each tier offers a little more intensity to the support being offered. PLCs will be able to use these *Ability Profiles* as they answer the questions "What do I do if the students didn't learn?" and "What do I do with those who already know it?" We must be prepared for all levels of readiness in our classes.

When teachers use *Ability Profile* data to differentiate, offer strategic flexible grouping, and build in tiered supports, students are invited to learn in modes most comfortable to them, promoting their best learning. *Ability Profiles* will be utilized at each instructional response (MTSS tiers or PLC guiding questions) to guide us in how to plan for students and build on their strengths based on the *CogAT* data.

Summary

- MTSS and PLC both aim to better meet student needs through instructional responses.
- *Ability Profiles* can make teachers more effective in those instructional supports.

Additional Resources

- Pendharker, E. (2023). What is a multi-tiered system of supports? EducationWeek. https://www.edweek.org/teaching-learning/mtss-what-is-a-multi-tiered-system-of-supports/2023/10
- DuFour, R. (2004). What is a "professional learning community"? ASCD, 61(8). https://www.ascd.org/el/articles/what-is-a-professional-learning-community



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the PLC Companion Insights Overview



1. *School Leaders/Administrators*

Implementation: Administrators can use this document to integrate Multi-Tiered Support Systems (MTSS) with Professional Learning Communities (PLCs) to provide a cohesive framework for improving student outcomes. The guide emphasizes using data-driven decision-making processes and tiered interventions based on students' needs.

How to Use:

- **MTSS and PLC Alignment:** Guide teachers in aligning their PLC discussions with the MTSS framework. For example, during PLC meetings, discuss student data to identify which students are in need of Tier 2 or Tier 3 interventions. Use the four key PLC questions (What do I want students to know? How will I know if they know it? What will I do if they struggle? What will I do if they already know it?) to create targeted intervention plans (PLC Companion Overview).
- **Data-Driven Instruction:** Facilitate training on using student data, including *CogAT ability profiles*, to inform instruction and intervention strategies. Administrators should lead data reviews to identify trends and gaps in student learning and develop school-wide strategies to address these gaps through tiered supports (PLC Companion Overview).
- **Professional Development:** Provide ongoing professional development that focuses on effective use of MTSS within the PLC structure. This can include training on how to use the data to differentiate instruction, implement flexible grouping, and plan tiered interventions that support diverse learners (PLC Companion Overview).

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Implementation and Use Guide for the PLC Companion Insights Overview



1. *School Leaders/Administrators*

Implementation: Administrators can use this document to integrate Multi-Tiered Support Systems (MTSS) with Professional Learning Communities (PLCs) to provide a cohesive framework for improving student outcomes. The guide emphasizes using data-driven decision-making processes and tiered interventions based on students' needs.

How to Use:

- **MTSS and PLC Alignment:** Guide teachers in aligning their PLC discussions with the MTSS framework. For example, during PLC meetings, discuss student data to identify which students are in need of Tier 2 or Tier 3 interventions. Use the four key PLC questions (What do I want students to know? How will I know if they know it? What will I do if they struggle? What will I do if they already know it?) to create targeted intervention plans (PLC Companion Overview).
- **Data-Driven Instruction:** Facilitate training on using student data, including *CogAT ability profiles*, to inform instruction and intervention strategies. Administrators should lead data reviews to identify trends and gaps in student learning and develop school-wide strategies to address these gaps through tiered supports (PLC Companion Overview).
- **Professional Development:** Provide ongoing professional development that focuses on effective use of MTSS within the PLC structure. This can include training on how to use the data to differentiate instruction, implement flexible grouping, and plan tiered interventions that support diverse learners (PLC Companion Overview).

©2024 Riverside Assessments, LLC. All rights reserved.

2. *Teachers*

Implementation: Teachers can utilize the PLC Companion Overview to enhance their PLC discussions, making them more focused on data-driven decision-making and effective implementation of tiered supports within their classrooms.

How to Use:

- **PLC Discussions:**
  - Use the four PLC guiding questions to structure discussions. For example, after a common assessment, analyze the results to identify students who need Tier 2 support for specific skills, and plan small group instruction accordingly (PLC Companion Overview).
  - For students who already master the content (Tier 1), collaborate to develop enrichment activities that challenge these students, such as advanced projects or leadership opportunities within group work (PLC Companion Overview).
- **Tiered Instruction:**
  - **Tier 1 (Core Instruction):** Use differentiated instruction strategies for the entire class, incorporating scaffolding and formative assessments to gauge understanding.
  - **Tier 2 (Small Group Instruction):** Identify students who need additional support and plan targeted small group lessons focusing on specific skills they are struggling with. For example, if a group of students is struggling with reading comprehension, implement a focused reading group using leveled texts and guided reading strategies (PLC Companion Overview).
  - **Tier 3 (Individualized Intervention):** Develop individualized plans for students needing intensive support. This might involve personalized learning plans, one-on-one tutoring, or the use of assistive technology to address specific learning challenges (PLC Companion Overview).



©2024 Riverside Assessments, LLC. All rights reserved.

3. *Curriculum Designers*

Implementation: Curriculum designers can use the MTSS and PLC framework to ensure that instructional materials and resources support tiered instruction and are adaptable for various learning needs.

How to Use:

- **Tiered Curriculum Design:**
  - Create resources that cater to all three tiers of instruction. For example, design core lesson plans for Tier 1, supplemental materials like guided practice activities for Tier 2, and intervention-specific resources such as intensive practice worksheets or personalized digital tools for Tier 3 (PLC Companion Overview).
  - Integrate *Ability Profiles* (Verbal, Nonverbal, Quantitative) into curriculum planning by providing multiple entry points for learning. For example, include visual aids and interactive activities for Nonverbal learners, complex texts for Verbal learners, and logic puzzles for Quantitative learners in literacy and math curricula (PLC Companion Overview).
- **Scaffolding and Differentiation:** Develop scaffolding strategies that can be used across all tiers. For instance, create anchor charts, graphic organizers, and sentence stems to support struggling learners while providing extension activities for advanced learners (PLC Companion Overview).

4. *Special Education Teachers*

Implementation: Special education teachers can use this document to align their instructional strategies with the MTSS framework and collaborate effectively within the PLC structure to support students with IEPs and 504 plans.

How to Use:

- **Tiered Supports:**
  - **Tier 1:** Ensure that all students, including those with disabilities, receive high-quality, differentiated instruction. Use accommodations such as visual supports, simplified instructions, or extended time to ensure access to the core curriculum (PLC Companion Overview).
  - **Tier 2:** Implement targeted small group interventions focusing on specific IEP goals, such as reading fluency or math computation. Collaborate with general education teachers during PLCs to align these interventions with classroom instruction (PLC Companion Overview).
  - **Tier 3:** Provide intensive, individualized interventions. Develop and implement specific strategies such as one-on-one sessions or specialized programs to address severe learning difficulties. Regularly monitor progress and adjust interventions as needed (PLC Companion Overview).
- **Collaboration:** Work closely with general education teachers to share insights and strategies during PLC meetings. Use *ability profile* data to help tailor interventions that address each student's strengths and areas for growth (PLC Companion Overview).

©2024 Riverside Assessments, LLC. All rights reserved.

5. *Gifted and Talented Coordinators*

Implementation: Use the PLC Companion Overview to develop tiered strategies for supporting advanced learners, ensuring they are consistently challenged and engaged in the classroom.

How to Use:

- **Enrichment and Acceleration:**
  - For students who demonstrate mastery (Tier 1), design advanced projects, independent study opportunities, or mentorship programs to deepen their understanding of the subject. For example, in a language arts class, allow these students to explore literary analysis at a deeper level, such as comparing thematic elements across multiple texts or creating original works inspired by the literature they study (PLC Companion Overview).
- **Differentiated Grouping:** Use flexible grouping strategies to pair advanced students with peers who can benefit from peer tutoring or collaborative problem-solving, promoting leadership skills and deeper understanding for both groups (PLC Companion Overview).
- **Tier 3 Interventions for GT Students:** Create opportunities for gifted students who may struggle with specific social-emotional skills or underachievement. For example, implement social skills groups or executive functioning workshops that help these students manage their workload and maximize their potential (PLC Companion Overview).

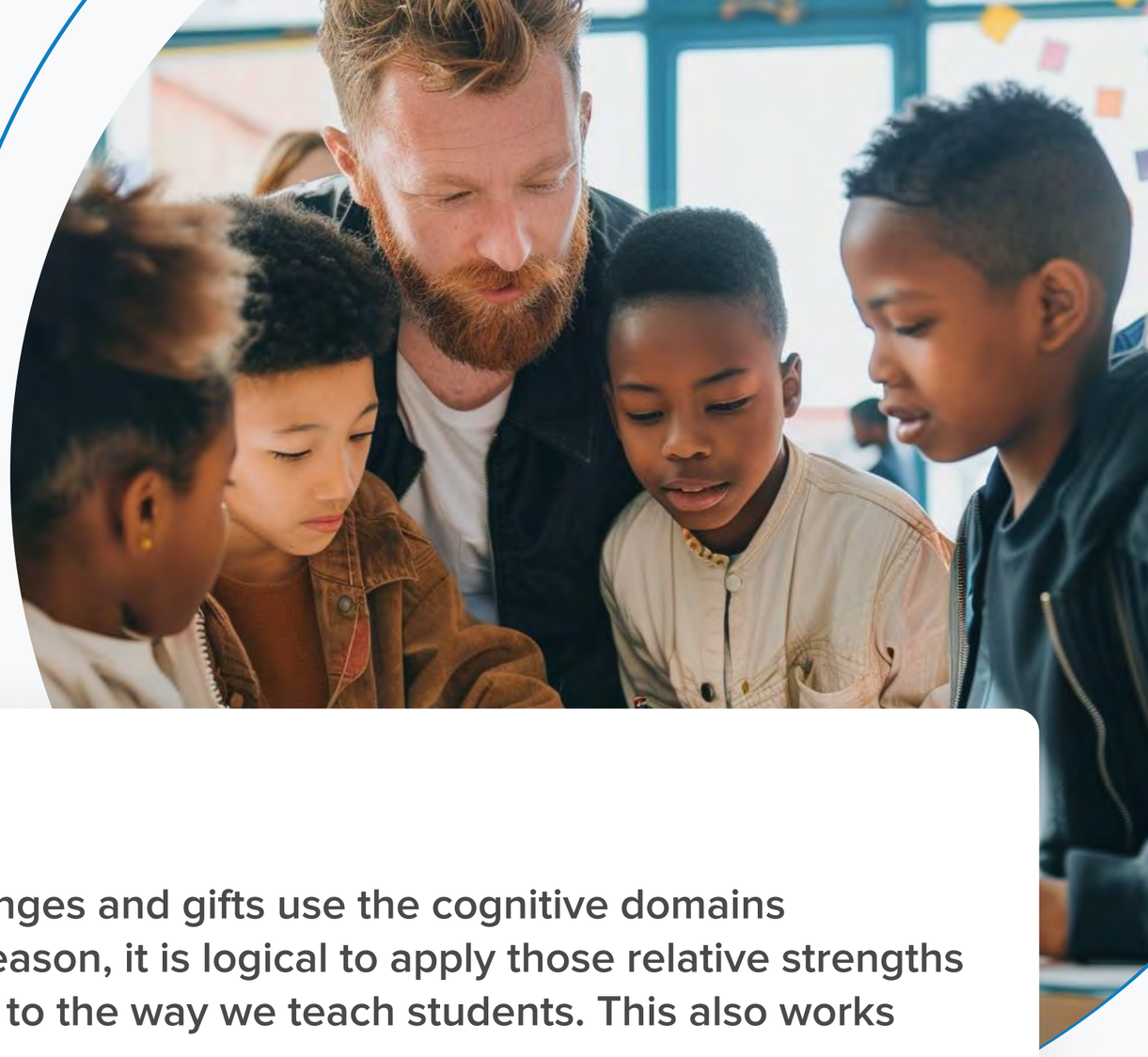
By leveraging the MTSS and PLC frameworks together, educators at all levels can provide targeted, data-driven support that addresses the diverse needs of students. This comprehensive approach helps create an inclusive and effective learning environment where every student has the opportunity to succeed.



©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

Multilingual Companion



Introduction

Students of all learning capacities and intellectual challenges and gifts use the cognitive domains assessed in *Cognitive Abilities Test*™ (*CogAT*®). For this reason, it is logical to apply those relative strengths (Verbal [V+], Nonverbal [NV+], and Quantitative [Q+]) to the way we teach students. This also works for students receiving language support.

When teachers use *Ability Profile* data to differentiate, offer strategic flexible grouping, and build in language supports, students are being invited to learn in modes most comfortable to them, promoting their best learning.

Below you will find a Q&A to help address questions you likely have about this process, how to support teachers, how to utilize *CogAT* data in instruction, and how to verify that this is happening in classes.

Director/Leadership Questions to Address

Q: How can I see that this is happening/working in classrooms?

> **A:** The walkthrough form below provides specific guidance for what you can look for in a classroom as evidence of differentiation and use of *Ability Profiles* in instruction. Each column is on a spectrum of implementation, ranging from novice to effective. There is also a column for N/A, for instances when the item may not be observed in the lesson or may not be relevant to the lesson observed. It IS important when using this walkthrough form that you see a significant amount of the lesson —if not the entire lesson—to best gauge how well the teacher is meeting student needs and what further supports they may need.
>
> This form has a section for meeting student needs specifically, including the application of linguistic accommodations.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT Informed Differentiation Walkthrough Form K–8 (ML)

Teacher: Class/Grade: Observer:		Novice/ Not Attempted	Emerging	Effective	N/A	Notes
I. Learning Purpose/Environment						
Content and language objectives are clearly communicated.						
Classroom environment is welcoming and culturally responsive.						
Affective filter is lowered, and students are comfortable in speaking, participating, taking risks, making mistakes, etc.						
II. *Ability Profiles*						
Clear tasks for V+, Q+, NV+ identified for students						
Tasks for each *Ability Profile* are designed correctly for relative strengths (tasks match profile strengths and skills)						
III. Instructional Practices/Routines						
Ability and language profiles inform strategic student groupings (pairs, small groups, independent work, etc.).						
Instruction is scaffolded according to student ability and language proficiency.						
Opportunities are provided for students to listen, speak, read, and write using the content academic vocabulary.						
IV. Quality Curriculum						
Tasks emphasized thought/meaning vs. drill/practice.						
Lesson is focused on critical thinking, issues, or problems (transformational thinking).						
There is evidence of Depth and Complexity (icons) in teaching.						
The lesson builds on students' background knowledge.						
The lesson enhances student understanding of content, academic vocabulary, and appropriate grammatical structures.						
V. Preparation for/Response to Student Needs						
Resources are selected according to student ability and language proficiency level.						
Linguistic accommodations are differentiated by student language proficiency level.						
Comprehensible input is prioritized.						
VI. Specific Differentiation Using *Ability Profiles*						
Content:	Materials of varied readability and/or interests; multiple ways to access ideas/information/etc.					
Process:	Utilize thinker types (CAP); tiering, strategic groupings; different homework tasks; choices about how to work; multiple modes, etc.					
Product:	Student evidence of learning; multiple modes of expression, choices about demonstration of learning, utilize Gardner's Multiple Intelligences; scaffolding/ personal connections, differing assessments, etc.					

CAP: creative, analytical, practical; N: nonverbal; Q: quantitative; V: verbal.

Other Comments/Notes/Questions for Instructor:

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Q: What support will my teachers need to make *Ability Profiles* from *CogAT* work for them?

> **A:** Everything teachers need to utilize *Ability Profile* data in their instruction is provided on CogAT.com and through the online community. There are documents offering guidance on differentiation, icons for Depth and Complexity, lesson plan templates, Q&A sections, sample lessons, and more, all available to your teachers and all built around utilizing the *Ability Profiles* in instruction to better meet student needs and increase student cognitive growth.

Q: Is there a lesson plan template they can follow? A decision guide?

> **A:** There is! The differentiation document shows some basics about differentiation and then offers a graphic organizer to guide teachers through the decision-making process as they try to plan lessons with *Ability Profiles* in mind. As teachers of multilingual learners use the differentiation document, they will take language proficiency into consideration as they address student readiness and learning profile.

Q: How does this work within our existing curriculum?

> **A:** The *Ability Profiles* can inform instructional decisions in any class at any grade level that has multilingual learners. Verbal (V+), Nonverbal (NV+), and Quantitative (Q+) thinking skills are universally applicable and will work embedded in any curriculum you support. Using the profiles allows teachers of multilingual learners to focus not only on language proficiency, but also on student strength in lesson planning. Reluctant learners are encouraged and motivated when they approach learning, especially areas of weakness, through their strengths.

Q: Does sheltered instruction fit into this approach?

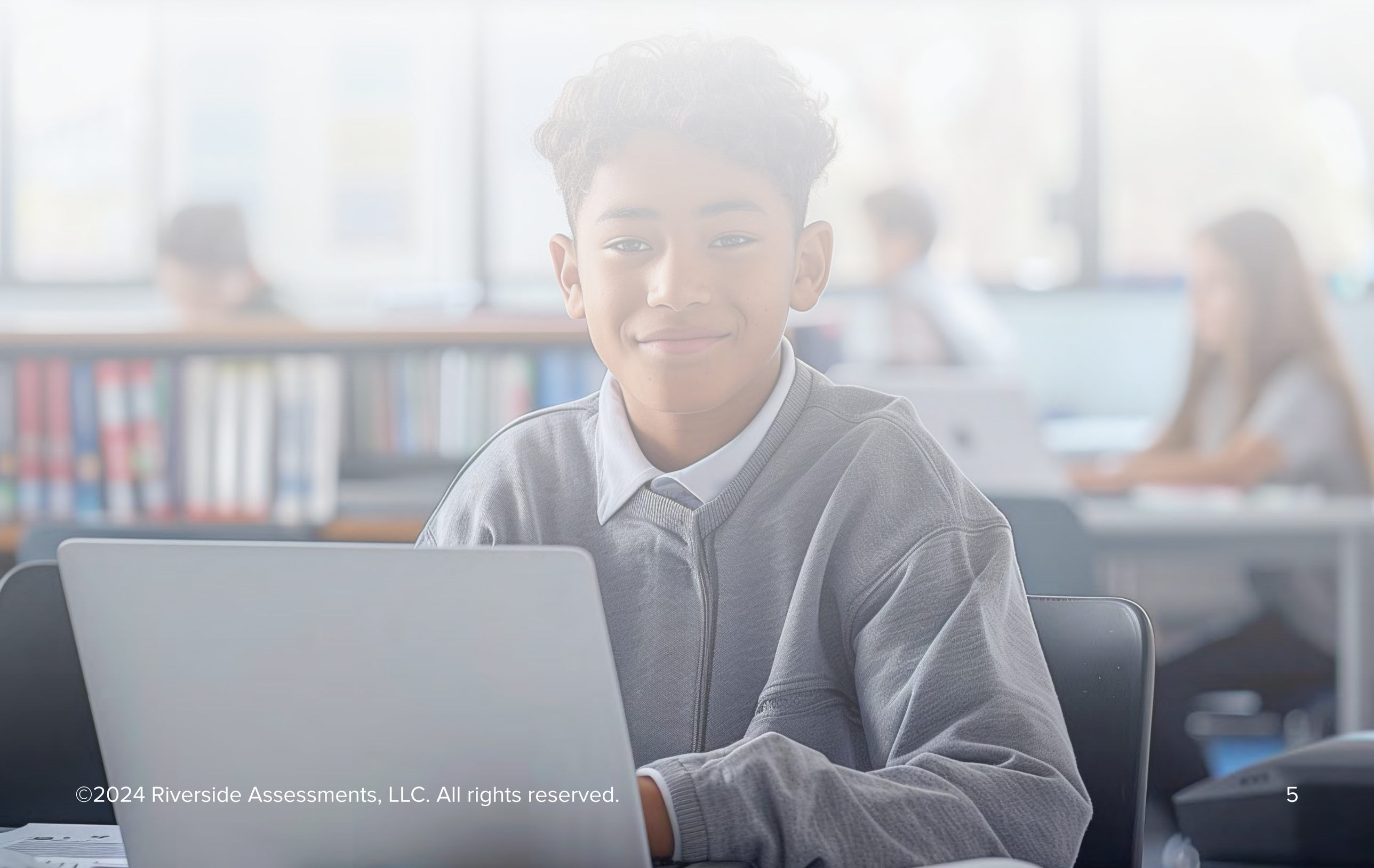
> **A:** Absolutely! Sheltered instruction involves the use of second-language acquisition strategies while delivering content instruction so all students, regardless of language background, have access to challenging academic content. It has the dual goals of helping make the content comprehensible for students while also helping them develop academic language.
>
> Because attention is given to individual student needs in sheltered instruction, consideration can be made for students' profiles when selecting sheltered instruction strategies. Regardless of the level of language proficiency, students have a relative strength that can be discovered through cognitive *Ability Profile* data and can be leveraged as often as possible to help the learner achieve their greatest individual growth.
>
> For example, students with nonverbal strengths might be given realia, manipulatives, or hands-on activities to help make the content comprehensible. Students with quantitative strengths might find graphs, charts, and diagrams helpful. Students with verbal strengths might enjoy working with a partner to talk through the content or find a buddy-reading activity helpful.
>
> See the following chart for guidance in providing instruction that addresses both the *CogAT* learning profiles and the stages of language acquisition.
>
> *Note: While all strategies listed by profile strength in the chart below are helpful for all students at each stage of second-language acquisition, strategies especially helpful for each type of strength are listed accordingly.*

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Stage of Second Language Acquisition	Verbal +	Quantitative +	Nonverbal +
Preproduction This stage also is called “the silent period” when the student takes in the new language but does not yet speak it.	• Emphasize listening comprehension by using read-alouds and music. • Speak slowly and use shorter words, but use correct English phrasing. • Model correct pronunciation, syntax, and communicative utterances. • Use simple sentence stems that give options for students to circle the correct answer. • Use comprehension support strategies (guided reading, group instruction, etc.). • Use first language resources (e.g., cognates, similar morphemes, syntax, concepts, text). • Encourage choral reading. • Use interactive dialogue journals.	• Use gestures as much as possible. • More advanced classmates who speak the same language can support new learning through interpretation. • Avoid excessive error correction. Instead, use recasting for student mistakes: model the correct language usage. • Highlight relevant information. • Label items in the classroom. • Speak clearly and slowly; give short, clear directions and check for understanding after each step. • Provide plenty of wait time. • Use activities that stimulate students’ prior knowledge and experiences (maps, charts, timelines, diagrams, etc.).	• Use visuals and manipulatives. • Have students point to pictures or act out vocabulary (total physical response). • Model “survival” language by saying and showing the meaning. For example, say, “Open your book,” and then open a book while the student observes. • Use “Point and Talk” technique by point to the object/part of the object or the word that is being discussed. • Write keywords on the board with students copying them as they are presented. • Bring in students’ culture and connect to background information. • Use activities that stimulate students’ prior knowledge and experiences (use of realia/real objects, manipulatives, art, music, pantomime, etc.). • Use multimedia language role models.
Early Production At this stage, the individual begins to speak using short words and sentences, but the emphasis still is on listening and absorbing the new language.	• Add opportunities for students to produce simple language. • Have students work in pairs or small groups • Use peer support to write short sentences or words in graphic organizers. • Use native language and adapted text. • Pre-teach functional language and vocabulary. • Present simple sentence stems. • Encourage partner and trio readings.	• Ask yes/no and either/or questions. • Use graphic organizers, graphs, and charts to present information. • Chunk information in print. • Practice pronunciation of social and academic language. • Provide opportunities for interaction in both languages to facilitate clarification and discussion of concepts.	• Ask students to point to pictures or real objects and say the new word. • Provide a word bank for writing activities. • Use slower, simplified speech. • Adapt writing tasks with drawing and scaffolding. • Use gestures for basic and academic concepts. • Reinforce learning by modeling correct usage. • Engage students in charades, role-playing, and linguistic guessing games.

©2024 Riverside Assessments, LLC. All rights reserved.

Stage of Second Language Acquisition	Verbal +	Quantitative +	Nonverbal +
Speech Emergent Speech becomes more frequent at this stage with more words and longer sentences, but the individual still relies heavily on context clues and familiar topics.	• Begin to introduce more academic vocabulary. • Have students re-tell stories or experiences and have another student write them down. The ML student can bring these narratives home to read and reinforce learning. • Use adapted grade-level text. • Encourage solo readings with interactive comprehension checks. • Assign simple writing tasks with a sentence starter. • Offer sentence stems requiring use of academic vocabulary for dialogue and writing.	• Introduce new academic vocabulary and model how to use it in a sentence. • Introduce charts and graphs by using easily understood information such as a class survey of food preferences. • Ask questions that require a short answer and are fairly literal. • Provide minimal error correction. Focus only on correction that directly interferes with meaning. • Have students fill out forms and applications. • In writing activities, provide the student with a fill-in-the-blank version of the assignment with the necessary vocabulary listed on the page.	• Provide visuals and make connections with the student's background knowledge as much as possible. • Reinforce learning by modeling the correct usage. • Provide hands-on activities with language support. Use skits for dramatic interaction. • Have students write descriptions of visuals and props. • Show filmstrips and videos with cooperative groups scripting the visuals. • Use music, TV, and radio with class activities.



©2024 Riverside Assessments, LLC. All rights reserved.

Stage of Second Language Acquisition	Verbal +	Quantitative +	Nonverbal +
Beginning Fluency At this stage, speech is fairly fluent in social situations with minimal errors, but new contexts and academic language are challenging, and the individual may still may struggle to express themselves due to gaps in vocabulary and appropriate phrases.	• Have students work in pairs and groups to discuss content. • Ask questions that require a full response with explanation. If you do not understand the student's explanation, ask for clarification by paraphrasing and asking the student if you heard them correctly. • Model more advanced academic language structures such as, "I think," "In my opinion," and "When you compare." Have students repeat the phrases in context. • Introduce nuances of language such as when to use more formal English and how to interact in conversations. • Use structured conversation strategies such as "Turn and Talk," "QSSSA," and "Conga Line."	• During instruction, have students do a "think, pair, share" to give the student an opportunity to process the new language and concept. • Ask questions that require inference and justification of the answer. • Correct errors that interfere with meaning, and pre-identify errors that will be corrected in student writing, such as verb-tense agreement. Only correct the errors agreed upon. • Use graphs, charts, and diagrams to present information and for students to take notes.	• Ask students if they agree or disagree with a statement and why. • Re-phrase incorrect statements in correct English, or ask the student if they know another way to say it. • Continue to provide visual support and vocabulary development. • Improve pronunciation by asking students to repeat key vocabulary and discussing how different languages have different sounds. • Use gestures for memorization of academic concepts. • Have students make short presentations using props; provide them with the phrases and language used in presentations ("Today I will be talking about…") and give them opportunities to practice the presentation with partners before getting in front of the class.

©2024 Riverside Assessments, LLC. All rights reserved.

Stage of Second Language Acquisition	Verbal +	Quantitative +	Nonverbal +
Intermediate Fluency Communicating in the second language is fluent at this stage, especially in social language situations, and the individual is able to speak almost fluently in new situations or in academic areas. There will be gaps in vocabulary knowledge and some unknown expressions.	• Ask students to produce the language in class activities. • Help students make connections with new vocabulary by instructing them in the etymology of words or word families such as, “important, importance, importantly.” • Introduce idioms and give examples of how to use them appropriately. For example, “Let’s wind up our work.” What’s another way you could use the phrase “wind up?” • It may also be helpful to discuss language goals with the student so you can assist in providing modeling and correction in specified areas. • Use grade-level text and more complex sentence stems. • Have students design questions, directions, and activities for others to follow.	• Use graphic organizers and thinking maps and check to make sure students are filling them in with details; challenge the student to add more. • Introduce more academic skills, such as brainstorming, prioritizing, categorization, summarizing, and compare and contrast. • Help students focus on strategies to get the meaning of new words. • Starting at this level, students need more correction/feedback, even on errors that do not directly affect meaning. They should be developing a more advanced command of syntax, pragmatics, pronunciation, and other elements that do not necessarily affect meaning but do contribute to oral fluency. • Pre-teach low-frequency academic vocabulary.	• Identify key academic vocabulary and phrases and model them. • Create assessments that give students an opportunity to present in English after they have an opportunity to practice in pairs or small groups. • Ask students to identify vocabulary by symbols that show whether the student “knows it really well,” “kind of knows it,” or “doesn’t know it at all.” • Have a “guessing time” during silent reading where they circle words they don’t know and write down their guess of the meaning. Check the results as a class. • Continue to use visuals for academic vocabulary and concepts; incorporate strategies such as the Frayer model, four corners vocabulary, and a student-created vocabulary flip-book.



©2024 Riverside Assessments, LLC. All rights reserved.

Stage of Second Language Acquisition	Verbal +	Quantitative +	Nonverbal +
Advanced Fluency At this stage, the individual communicates fluently in all contexts and can maneuver successfully in new contexts and when exposed to new academic information, though the individual may still have an accent and use idiomatic expressions incorrectly at times.	• Students at this level are close to native language fluency. Continue to develop language skills as gaps arise by using the strategies listed above. • Because students at this stage have achieved near-native fluency, they benefit from support in fine-tuning their oral and written language skills. • Help students distinguish registers in English (formal and informal) and when to use each. • Promote open discussions about concepts; provide more advanced and complex sentence stems to promote discussion. • Encourage critical interpretation of stories, legends, and poetry. • Assign writing tasks that involve writing, rewriting, editing, and critiquing written examples.	• Offer challenge activities to expand the student's vocabulary knowledge such as identifying antonyms, synonyms, and the use of a thesaurus and dictionary. • Offer error correction on academic work and on oral language; help students monitor mistakes through their own self-correction strategies. • Demonstrate effective note-taking and provide a template. • Use new vocabulary in meaningful context and through meaningful interaction. • Promote critical analysis and evaluation of pertinent issues.	• Although the student may seem completely fluent, they still benefit from visual support, building on background knowledge, pre-teaching vocabulary, and making connections between content areas. • Allow products that include visual and verbal content, such as PowerPoint presentations, diagrams, drawings, demonstrations, storyboards, models, etc. • Allow students to access physical and electronic resources such as a thesaurus and dictionary, and interactive word walls to build vocabulary. • Have students identify a social issue and defend their position.

References

Robertson, K., & Ford, K. (n.d.) Language acquisition: An overview. ¡Colorín Colorado! https://www.colorincolorado.org/article/language-acquisition-overview

Morales, P. (2021). TExES ESL 154 study guide: Content review and practice book (4th ed). Seidlitz Education.

Reed, B., & Railsback, J. (2003). Strategies and resources for mainstream teachers of English language learners. Northwest Regional Educational Laboratory. https://educationnorthwest.org/sites/default/files/ell.pdf

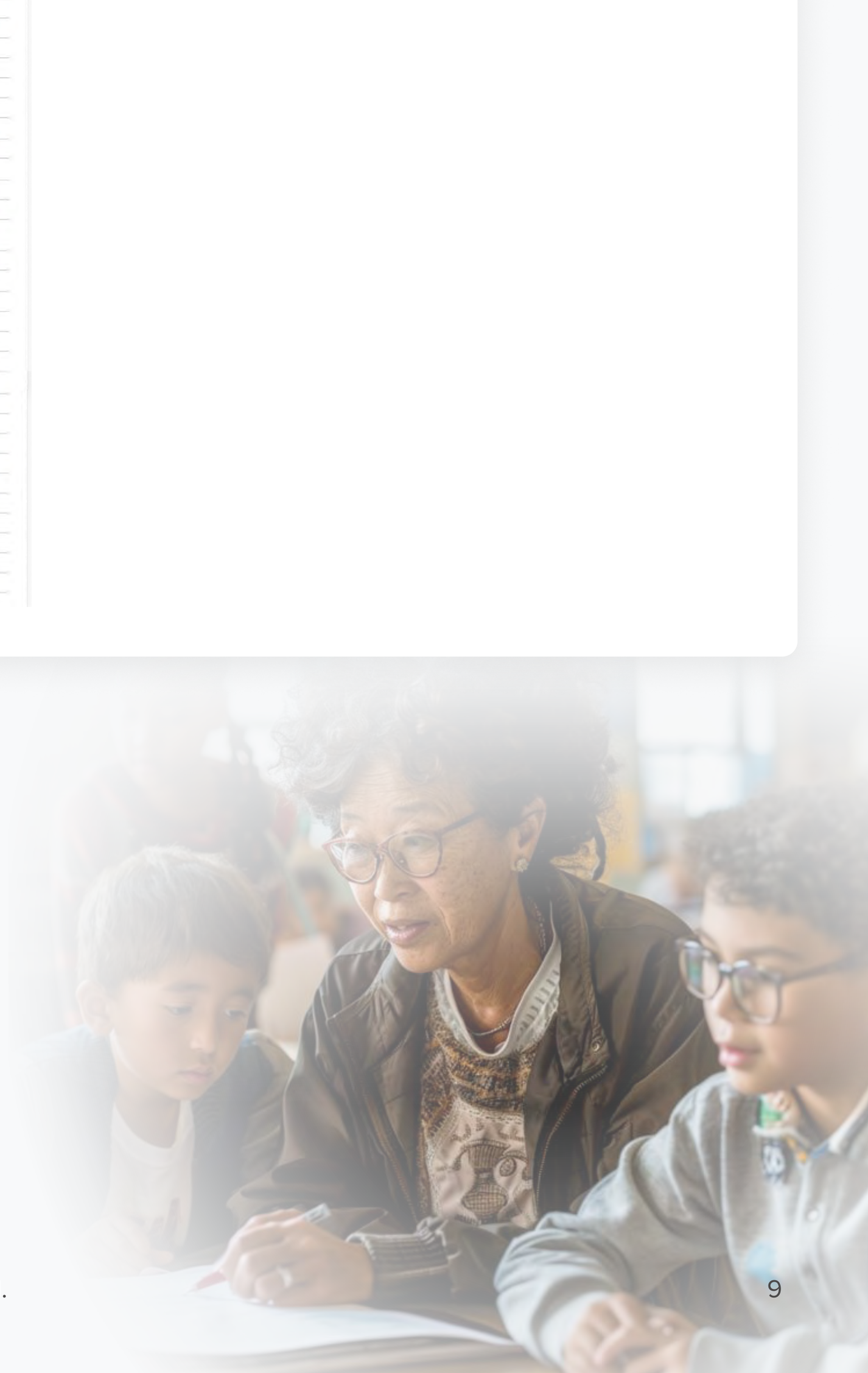
Seidlitz, J. (2011). Sheltered instruction plus: A comprehensive plan for successfully teaching English language learners. Seidlitz Education.

©2024 Riverside Assessments, LLC. All rights reserved.

Q: What is the vertical alignment?

A: As with any curriculum or learning strategy, as students get older, the cognitive challenges will increase. The skills align vertically because we all have these three cognitive abilities as the foundation for our thinking, problem solving, and learning of new material. The chart below shows you some of the vertical alignment you can find in these resources. For example, in the **Q+ Strength** section, the "Right or Wrong?" Graphic Organizer is listed for all age groups, from K–2 up through 9–12. The organizer remains about the same, but increases in complexity or prompts, topics, numbers of icons applied, and so on, so the teachers can make this work within their curriculum for all levels of learners while appealing to their *Ability Profiles*.

		Age Group			
		K–2	3-5	6-8	9-12
Q+ Strength	Learning Profile: Analytical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Right or Wrong?	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples, Intersections		x		
	Iconic Pathways			x	x
V+ Strength	Learning Profile: Creative	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Frames with Multiple Perspectives	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x
NV+ Strength	Learning Profile: Practical	x	x	x	x
	Inquiry Learning	x	x	x	x
	Conversational Roundtable	x	x	x	x
	3-2-1 Exit Ticket	x	x	x	x
	Graphic Organizer: Big Ideas	x	x	x	x
	TLAD	x	x	x	x
	Details Flower Activity	x			
	Details Flower Activity (Deep Dive)		x		
	Iconic Prompts	x			
	Iconic Couples/Intersections		x		
	Iconic Pathways			x	x



©2024 Riverside Assessments, LLC. All rights reserved.

Q: What is the vertical alignment?

Subpopulation	Application	Differentiation Strategies	Justification
Multilingual Learner	**Conversational Roundtables**	• Provide sentence stems for students to use in their discussion.	• Sentence frames and sentence starters are a helpful way to support multilingual learners' academic language development both in their writing and speaking by prompting them to discuss content with more complex structures and thinking.
	Inquiry Learning	• Provide clear, step-by-step directions so students understand expectations. • Use visuals in the orientation phase of the inquiry. • Provide charts, tables, and other graphic organizers to help students collect data in their investigation. • Provide sentence stems for the discussion.	• Delivering clear directions allows students to follow with accuracy and focus. • Visuals provide important information and context that can make content more understandable, or comprehensible. They can also help students make connections and tap into their own experiences. • Graphs, charts, and tables make information easier to visualize and much more comprehensible for multilingual learners.
	3-2-1 Exit Ticket	• Provide differentiated sentence stems for student responses.	• Differentiated sentence stems provide the support that multilingual learners need at various language levels to support their responses in both oral and written responses.
	CAP Activity	• Scaffold reading through chunking, shared reading, adapted texts, partner reading, or primary language support.	• When multilingual learners do not know the language, or do not know it well enough, they cannot concentrate on the academic content and have to devote attention to understanding the language. Scaffolding reading can help make this more manageable for the students.

©2024 Riverside Assessments, LLC. All rights reserved.

Subpopulation	Application	Differentiation Strategies	Justification
Multilingual Learner	**Graphic Organizers/ Details Deep Dive**	• Structure student interactions for success by attending to discussion and grouping strategies based on language considerations.	• Peer interaction and collaboration not only provides opportunities for language use and practice—it builds community. But language learners need support in feeling confident in group work and making student interactions productive.

Q: How will this help with professional learning community (PLC) question 3?

> **A:** Question 3 in the PLC is about what to do when students have difficulty learning the material being taught. Regardless of stanine, students have cognitive strengths and weaknesses. It is our job to use that data, leverage those strengths, and get the students learning to their greatest individual capacity.
>
> Responses to student difficulties can include RTI (response to intervention), MTSS (multi-tiered system of supports), re-teaching, flexible grouping, instructional adjustments, engagement shifts, and establishing monitoring plans. But whatever approach is taken, student profiles can be used to help students tackle their difficulties in learning.
>
> Knowing students strengths allows teachers to approach their weaknesses through an asset-based approach. Students with a verbal strength can be encouraged to talk and write about the math problem. Students with a nonverbal strength can be allowed to draw or use diagrams or other visual aides to solve math problems. Students with quantitative strengths can be asked to look for details/text evidence and patterns in determining the main idea in a text.
>
> The lesson template provides guidance on how to differentiate the lesson content, process, and product for students with verbal, quantitative, or nonverbal strengths. Additional guidance is offered regarding how to tier the iconic prompts to find an appropriate level of challenge for students grappling with material while still honoring their *Ability Profile*, as well as how to provide instruction based on stage of language acquisition.

©2024 Riverside Assessments, LLC. All rights reserved.

Novice

Teachers are just learning about *Ability Profiles*; most lessons will not yet use *Ability Profiles* for decision making, but occasional activities may address *Ability Profiles* for extension or enrichment

Emerging

Teachers are experimenting with new lessons and ideas based on *Ability Profiles*; some mistakes may be made, but efforts are clear to utilize *Ability Profiles* in thinking tasks, grouping mechanisms, assessments

Effective

Teachers have been experimenting with *Ability Profiles* and understand how to use them to inform their instruction; lessons frequently and accurately reflect the *Ability Profile* data to offer best learning experiences for students



©2024 Riverside Assessments, LLC. All rights reserved.

Teacher Questions to Address



Q: How do I use *Ability Profiles* to differentiate? Where do I begin?

> **A:** The lesson template has many embedded questions to help guide you through the process of designing the learning experiences informed by *Ability Profiles*. There is also a differentiation resource document to help you with decision making about differentiated experiences if that is newer for you or the generalist you are supporting.

Q: Am I supposed to use these for every lesson every day?

> **A:** The short answer is no. It would be an unreasonable ask to expect any teacher to differentiate everything about their teaching all day long. These resources are here to help you see how helpful the data from *CogAT* can be in your teaching. Provided in these resources are lesson plans as well as links to support documents. Start using what makes the most sense to you in your established pedagogy, and then as you get comfortable, try new things and challenge yourself to include more and more differentiation by *Ability Profile*. You will find that including these resources in your teaching gets easier, and you will use them more strategically to promote student growth. And as you take this path toward using the *Ability Profiles* yourself, also guide your co-teacher or the generalists you support in the same way.

Q: Where can I get extra support with *CogAT,* Depth/Complexity Icons, Differentiation, etc.?

> **A:** The resources you need to use the toolkit live in Companion pieces and embedded links. Simply follow those links to read more about differentiation in general, MTSS, SPED/504, 2e learners, multilingual learners, the Icons for Depth and Complexity, ELAR (English, Language Arts, and Reading), Mathematics, and anything else you may have questions about. Still can't find what you need?

Q: Which elements are nonnegotiable, and where do I have creative leeway?

> **A:** The structure of lessons is guided in the lesson template, but you can use the lessons for anything you are teaching or helping another teacher teach, so this works within the curriculum you already have. You can be very creative in how you develop and design learning experiences, but make sure you are using the *Ability Profiles* as outlined in these resources to guide you as you work to meet students' needs and grow all your learners.

Q: How does this work with other instructional initiatives like problem-based learning (PBL), PLCs, RTI, MTSS, Flexible Grouping, etc.?

> **A:** The lesson template (below) is designed in such a way that this will work with any other initiative your school or district may be exploring. Lessons can be built into PBL, and they are differentiated to work with PLC questions 3 and 4, as well as MTSS and RTI. The toolkit also utilizes so many approaches to grouping: groups by interests, by learning profiles (*Ability Profile* data), by scaffolding for language, groups by readiness, in pairs, triads, groups of four, etc. Students will truly build a community when you create so many types of groups all with strategic purpose, and when you can work with your coteachers or classrooms with high concentrations of multilingual learners, you can help close the gaps between all learners through these grouping mechanisms.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Lesson Planning Template

Below you will find how to adjust your Lesson Planning Template for your Multilingual Population.

Learning Objective/Standard/ Outcomes/Skills

Language Objective

Language objectives address the listening, speaking, reading, and writing skills that students need. Effective language objectives are measurable, support the lesson's content, and align with English Language Development/English Language Proficiency Standards.

Essential Question/Enduring Understanding

For Multilingual Learners

Consider resources needed to access/build from students' background knowledge, key vocabulary that needs to be developed, visuals and examples needed to make concepts understandable, and required scaffolding according to language proficiency.

Entry Point/ Hook

For Multilingual Learners

Teachers should take the following into consideration when selecting an appropriate entry point/hook for lessons for multilingual learners:

- *Students' culture and language*
- *Appropriate scaffolding for students' language proficiency levels*
- *Students' background knowledge and how to access/build from it*
- *Incorporating student interests*
- *Introducing key content vocabulary and concepts*
- *Using visual supports*
- *Keeping instructions clear*

What kind of differentiated experience will I utilize?	**Content**	**Process**	**Product**
Note: You will use *CogAT* data to inform the differentiation decisions. ***Options for all three relative strengths are offered in the strategies toolkit.***	Do I want to focus on skills and concepts today, allowing freedom and flexibility in the specific materials or details?	Do I want to vary how my students manipulate new content so the learning is memorable and engaging?	Do I want to allow students the freedom and flexibility to showcase their learning in a format that makes sense to them?
For Multilingual Learners: See charts presented earlier in this document to select instructional strategies which help make the content comprehensible and support language acquisition.			

Reflection on Learning

For Multilingual Learners: Special attention should be given to scaffolding needed for students' language proficiency when selecting reflection pieces.

©2024 Riverside Assessments, LLC. All rights reserved.

CogAT® Riverside Insights®

CogAT Instructional Strategies Toolkit



General Info and Understandings

The *Cognitive Abilities Test*™ (*CogAT*®) yields valuable information about students for teachers to use as they plan their instruction. Teachers can learn about student strengths, relative strengths, and relative weaknesses and then use that information to support each student in learning. We can design strategic, effective, differentiation based on *CogAT* data.

Ability test data is useful for selecting differentiation strategies, including scaffolding (Brighton et al., 2005; Callahan et al., 2022). The goal is to *build students' skills* (aligned with learning objectives/ standards) using a variety of strategies that allow students to access the material *in the way they learn best*. Understanding students' abilities to reason or solve complex problems within a domain can be used to provide students with greater challenges in areas of strengths or greater support in areas they need to develop (Lohman, 2005; Olszewski-Kubilius & Clarenbach, 2012).

The **Strategies Playlist** provides opportunities to guide teachers in using their students' strengths to support and challenge them in the classroom. Teachers can differentiate content, process, and product according to student strengths as designated by the *CogAT*, among other student factors. Using *CogAT* as a basis for differentiation will allow students who think alike to work together, creating more effective academic collaboration. Teachers can also use the *CogAT* results to see areas of struggle for learners and then use that information to strengthen those areas of challenge. Essentially, this playlist will help teachers facilitate the use of **strengthen and stretch** as the focus of learning experiences, better meeting the unique needs of all learners.

References

Brighton, C. M., Hertberg, H. L., Moon, T. R., Tomlinson, C. A., & Callahan, C. M. (2005). *The feasibility of high-end learning in a diverse middle school.* National Research Center on the Gifted and Talented.

Callahan, C. M., Azano, A., Park, S., Brodersen, A. V., Caughey, M., & Dmitrieva, S. (2022). Consequences of implementing curricular-aligned strategies for identifying rural gifted students. *Gifted Child Quarterly, 66*(4), 243–265.

Lohman, D. F. (2005). The role of nonverbal ability tests in identifying academically gifted students: An aptitude perspective. *Gifted Child Quarterly, 49*(2), 111–138. https://doi.org/10.1177/001698620504900203

Olszewski-Kubilius, P., & Clarenbach, J. (2012). Unlocking emergent talent: Supporting high achievement of low-income, high-ability students. National Association for Gifted Children.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Why *CogAT*?

Cognitive ability refers to a student's readiness to learn in different situations and environments and demonstrate creative problem-solving skills. Unlike a traditional achievement test, which measures how well a student has mastered the curriculum, the *Cognitive Abilities Test*™ (*CogAT*®) shows us how well a child can reason abstractly and identify patterns and relationships in the world around them. (**Overview of *CogAT* for Parents**)

CogAT is an assessment that measures cognitive abilities across a district. Why is this information we need to know as educators? Our students—in fact, everyone—use these abilities to reason, to solve problems, and to process new information and make meaning from it. Utilizing these relative strengths and ability data, we can promote stronger reasoning skills in our students, and those higher level reasoning skills can make them more successful in state and college readiness assessments. We can use these batteries to make our students better at *thinking*.

According to Andrew Roberts, author of ***The Thinking Student's Guide to College***, critical thinking matters in college because students often adopt the wrong attitude to thinking about difficult questions. These attitudes include *Ignorant Certainty* and *Naive Relativism*.

Ignorant Certainty

Ignorant certainty is the belief that there are definite, correct answers to all questions—all you have to do is find the right source (Roberts, 2010, 102). It's understandable that a lot of students come into college thinking this way—it's enough to get you through most of your high school coursework. In college and in life, however, the answers to most meaningful questions are rarely straightforward. To get anywhere in college classes (especially upper-level ones), you have to think critically about the material.

Naive Relativism

Naive relativism is the belief that there is no truth and all arguments are equal (102–103). According to Roberts, this is often a view that students adopt once they learn the error of ignorant certainty.

While it's certainly a more "critical" approach than ignorant certainty, naive relativism is still inadequate because it misses the whole point of critical thinking: arriving at a more complete, "less wrong" answer. Part of thinking critically is evaluating the validity of arguments (yours and others'). Therefore, to think critically, you must accept that *some arguments are better* (and that some are just plain awful).

Critical thinking also matters in college because:

- It allows you to form your own opinions and engage with material beyond a superficial level. This is essential to crafting a great essay and having an intelligent discussion with your professors or classmates. *Regurgitating what the textbook says won't get you far.*
- It allows you to craft worthy arguments and back them up. If you plan to go on to graduate school or pursue a PhD, original, critical thought is crucial.
- It helps you evaluate your own work. This leads to better grades (who doesn't want those?) and better habits of mind.

Doing college-level work without critical thinking is a lot like walking blindfolded: you'll get *somewhere*, but it's unlikely to be the place you desire.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

The following information can be easily shared with parents and teachers to help them further understand the CogAT and the valuable information this test provides about each student.

CogAT scores offer guidance to teachers in which teaching methods might work best for each learner. *CogAT* measures learned reasoning and problem-solving skills in three different areas: **verbal (V)**, **quantitative (Q)**, and **nonverbal (NV)**. Reasoning skills develop gradually throughout a person's lifetime and at different rates for different individuals. Reasoning abilities are good predictors of success in school and are important outcomes of good schooling. *CogAT* does not measure such factors as effort, attention, motivation, and work habits, which also contribute importantly to school achievement.

Teachers use *CogAT* scores to help students learn more effectively. For example, if a student's score profile shows an uneven pattern of relative strength and weakness, the teacher can provide challenging opportunities for the student to do the kind of thinking they do best (building on the student's strength). The teacher can also support aspects of new tasks that rely on a student's relative weakness. When the student has established a foothold in an area, the teacher can guide them to develop the relatively weaker reasoning skill by applying this skill to the familiar task (strengthening the student's weakness).

How Do the Three Batteries of *CogAT* Differ?

The **Verbal Battery** measures flexibility, fluency, and adaptability in reasoning with verbal materials and in solving verbal problems. These reasoning abilities play an important role in reading comprehension, critical thinking, writing, and virtually all verbal learning tasks.

The **Quantitative Battery** measures quantitative reasoning skills; flexibility and fluency in working with quantitative symbols and concepts; and the ability to organize, structure, and give meaning to an unordered set of numerals and mathematical symbols. These reasoning skills are significantly related to problem solving in mathematics and other disciplines.

The **Nonverbal Battery** measures reasoning using geometric shapes and figures. To perform successfully, students must invent strategies for solving novel problems. They must be flexible in using these strategies and accurate in implementing them.

Interpreting the *CogAT* Ability Profile

CogAT scores are nationally normed, so an individual's test performance can be compared to the performance of other students throughout the nation who are the same age. Scores are reported in several ways, but the Ability Profile is the most informative and useful index of student performance.

The Ability Profile indicates the overall magnitude of scores (median stanine) and the pattern of scores across the test batteries. The patterns are classified as A, B, C, or E. In an A pattern, scores in each battery are roughly at the sAme level. In a B pattern, two scores are similar while one is significantly aBove or Below the other two. A C pattern indicates Contrast, with a relative strength and a relative weakness. An E pattern indicates Extreme differences between two scores. Relative strengths and weaknesses are indicated by plus (+) or minus (-) signs in the Ability Profile; for example, a student profile of 4B(V+) indicates a relative verbal strength.

References

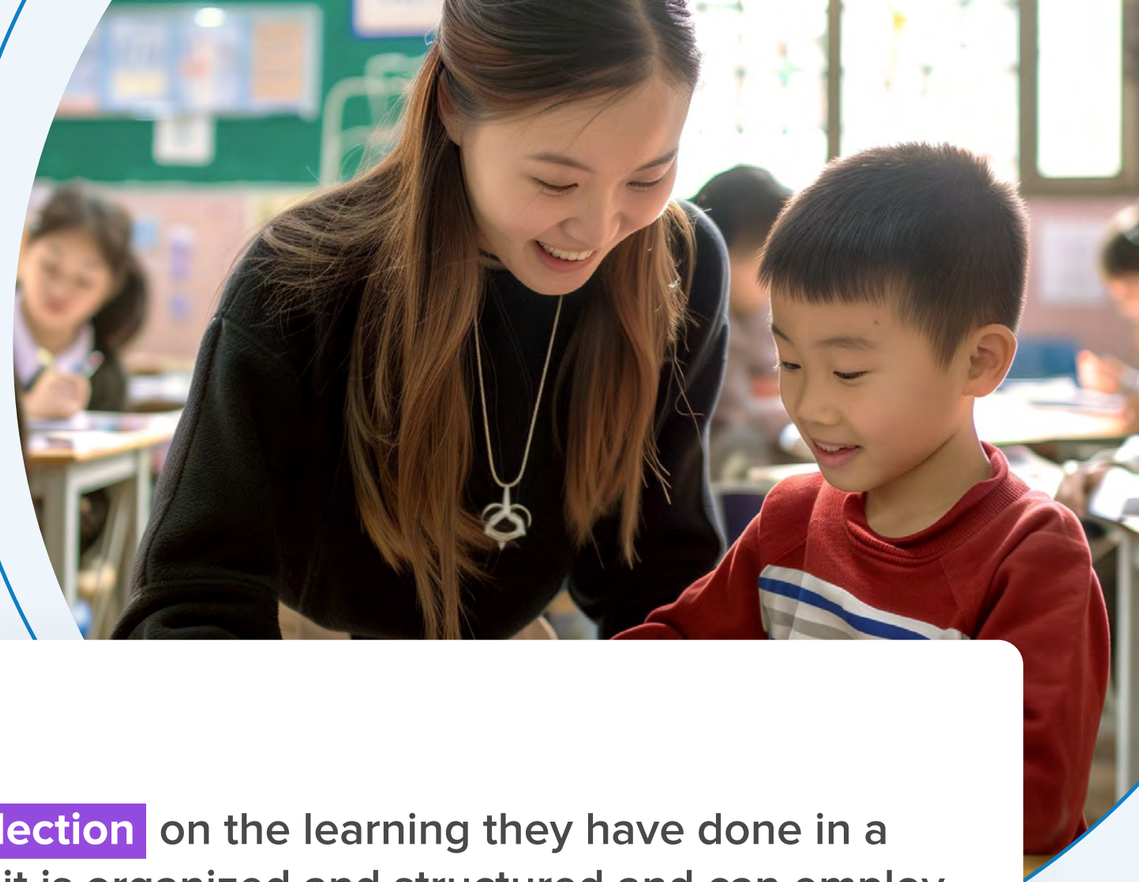
Patterson R. (2020). 7 ways to improve your critical thinking skills. College Info Geek. https://collegeinfogeek.com/improve-critical-thinking-skills/

Roberts, A. (2010). *The thinking student's guide to college: 75 tips for getting a better education.* University of Chicago Press.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

3-2-1 Exit Ticket

V+ Relative Strength



Purpose

The 3-2-1 Exit Ticket allows students to give a **deliberate reflection** on the learning they have done in a lesson or unit of study. It is effective for V+ thinkers because it is organized and structured and can employ icons for Depth and Complexity that are appealing to them while they showcase their new learning or understandings.

Instructions/Application

The 3-2-1 Exit Ticket should be used after instruction on a topic has been offered and students have had an opportunity to work with the material to make meaning. It will show you misconceptions, connections they are making, and their new understandings after the lesson.

Strengthen

Because we are using this Exit Ticket for a V+ learner, we will utilize icons for Depth and Complexity that this learner will find engaging and interesting: **Language of the Discipline, Unanswered Questions, Ethics, and Multiple Perspectives.** It's important to note, any icon for Depth and Complexity can be used in a 3-2-1 Exit Ticket, so be intentional in which ones you use for this reflection/demonstration of learning.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their thinking domain and work toward a reflection prompt utilizing Patterns or Trends. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

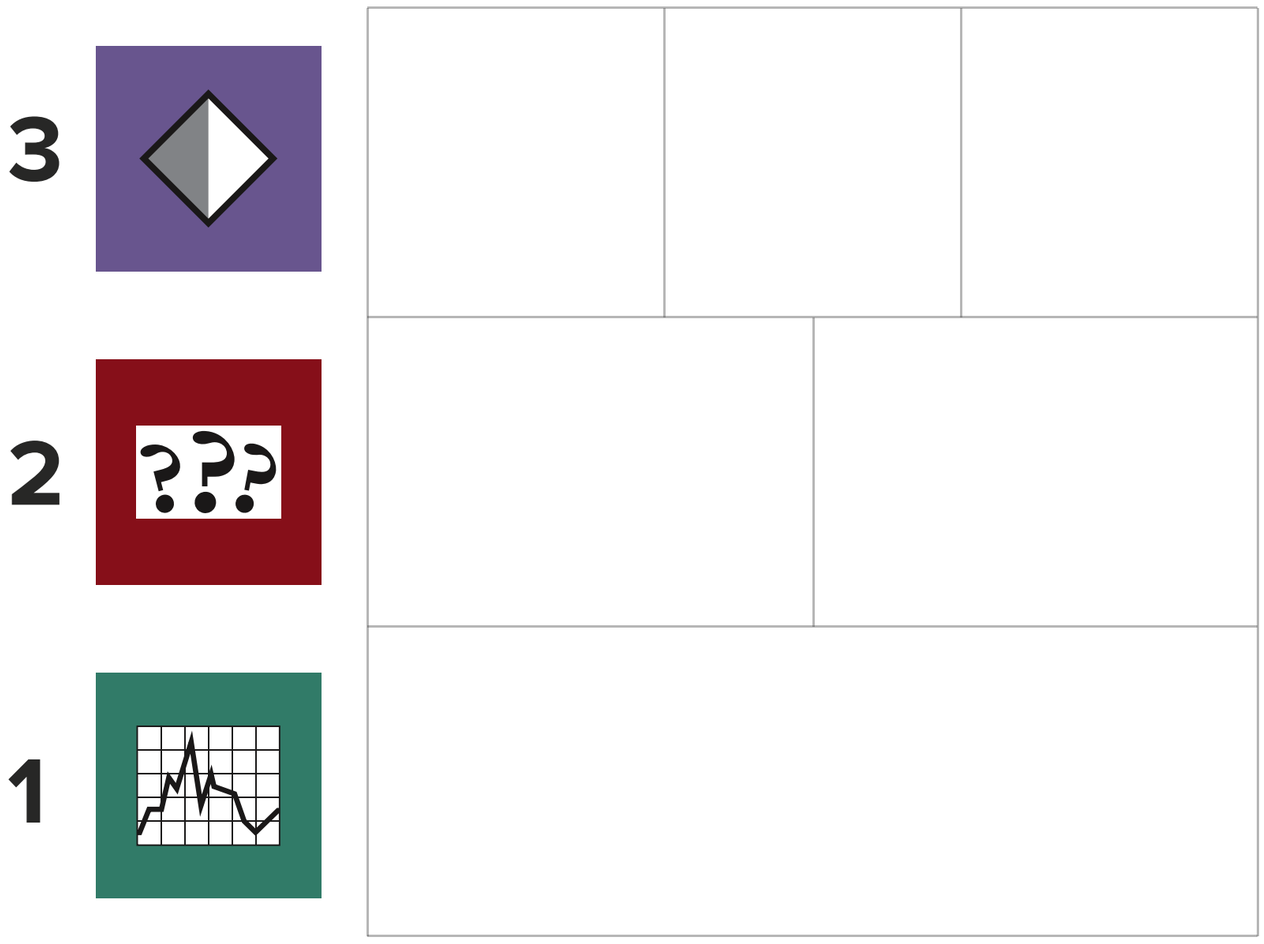
©2024 Riverside Assessments, LLC. All rights reserved.

Differentiation

Product Differentiation by Learning Profile

All students in the class will be working on an exit ticket, but the exit tickets will vary in which icons are being used based on their *CogAT* results. Some students will be working on an exit ticket designed for V+, while others are working on Q+ or NV+ to embrace their strengths as thinkers while they reflect on new knowledge and understandings.

3-2-1 Exit Ticket Application for Q+ Learners



The last prompt in this case is the stretch element, where we ask the students to work in an icon that may not be as comfortable for their thinking strength.

Iconic Prompt Guidance

Ethics

Based on our lesson today, what should we do when considering _____?
Is it ever appropriate to _____?

Unanswered Questions

What are two questions you still have about _____?
Identify two noticeable gaps in content or sources, or two forms of bias you spotted in our learning today.

Trends

What is a Trend that emerged from our learning today based on _____?
Based on our learning about _____, what is one Trend you can identify, and how do you know this is a Trend?

NV: nonverbal; Q: qualitative; V: verbal.

Depth & Complexity Icons, © 2006 J Taylor Education
Displayed icons are suggestions.

©2024 Riverside Assessments, LLC. All rights reserved.

3-2-1 Exit Ticket

Q+ Relative Strength



Purpose

The 3-2-1 Exit Ticket allows students to give a deliberate reflection on the learning they have done in a lesson or unit of study. It is effective for Q+ thinkers because it is **organized and structured** and can employ icons for Depth and Complexity that are appealing to them while they showcase their new learning or understandings.

Instructions/Application

The 3-2-1 Exit Ticket should be used after instruction on a topic has been offered and students have had an opportunity to work with the material to make meaning. It will show you misconceptions, connections they are making, and their new understandings after the lesson.

Strengthen

Because we are using this Exit Ticket for a Q+ learner, we will utilize icons for Depth and Complexity that this learner will find engaging and interesting: **Rules, Details, Patterns, Trends.** It's important to note, any icon for Depth and Complexity can be used in a 3-2-1 Exit Ticket, so be intentional in which ones you use for this reflection/demonstration of learning.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their analytical thinking domain and work toward a reflection prompt utilizing Multiple Perspectives or Across Disciplines. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

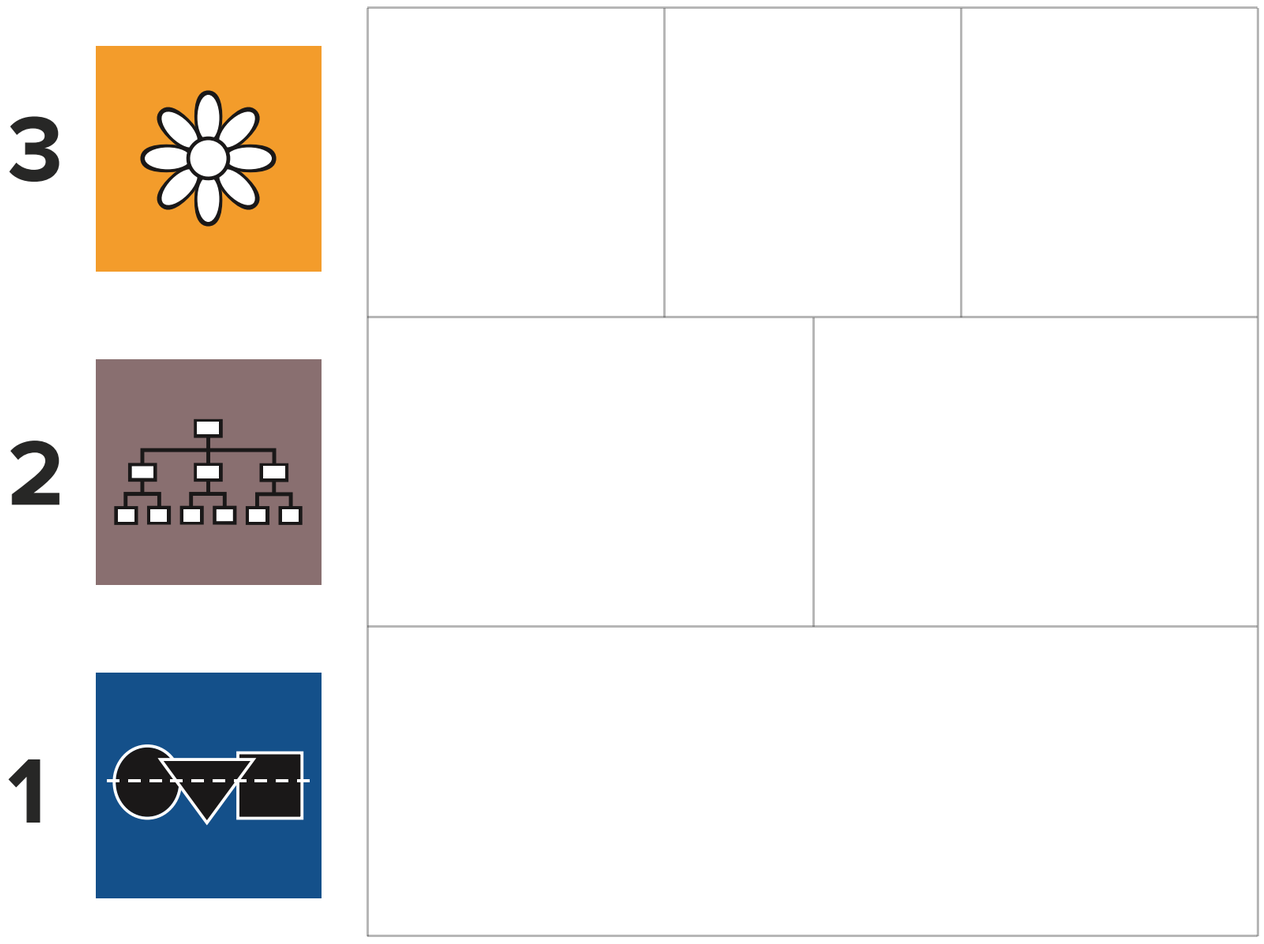
©2024 Riverside Assessments, LLC. All rights reserved.
©Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Product Differentiation by Learning Profile

All students in the class will be working on an exit ticket, but the exit tickets will vary in which icons are being used based on their *CogAT* results. Some students will be working on an exit ticket designed for Q+, while others are working on V+ or NV+ to embrace their strengths as thinkers while they reflect on new knowledge and understandings.

3-2-1 Exit Ticket Application for Q+ Learners



The last prompt in this case is the stretch element, where we ask the students to work in an icon that may not be as comfortable for their thinking strength.

Iconic Prompt Guidance

Details

What features are unique to _____?
What are the distinguishing features of _____?
What did you notice about _____?

Rules

What two Rules did you learn today about _____?
After learning about _____ today, which two rules do you think are the most important to remember?

Across Disciplines

Consider what you learned today, and think of another area in life where you see the same thing happening.
In what other classes do you see a similar _____ to what we learned today?
How can what we learned today relate to other fields of study?

NV: nonverbal; Q: qualitative; V: verbal.

Depth & Complexity Icons, © 2006 J Taylor Education
Displayed icons are suggestions.

Click here for an instructional video.

©2024 Riverside Assessments, LLC. All rights reserved.

3-2-1 Exit Ticket

NV+ Relative Strength



Purpose

The 3-2-1 Exit Ticket allows students to give a deliberate reflection on the learning they have done in a lesson or unit of study. It is effective for NV+ thinkers because it is organized and structured and can employ icons for Depth and Complexity that are appealing to them while they showcase their new learning or understandings.

Instructions/Application

The 3-2-1 Exit Ticket should be used after instruction on a topic has been offered and students have had an opportunity to work with the material to make meaning. It will show you misconceptions, connections they are making, and their new understandings after the lesson.

Strengthen

Because we are using this Exit Ticket for a NV+ learner, we will utilize icons for Depth and Complexity that this learner will find engaging and interesting: Across Disciplines, Over Time, Language of the Discipline, Big Idea, Unanswered Questions. It's important to note, any icon for Depth and Complexity can be used in a 3-2-1 Exit Ticket, so be intentional in which ones you use for this reflection/demonstration of learning.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their thinking domain and work toward a reflection prompt utilizing Ethics or Rules. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

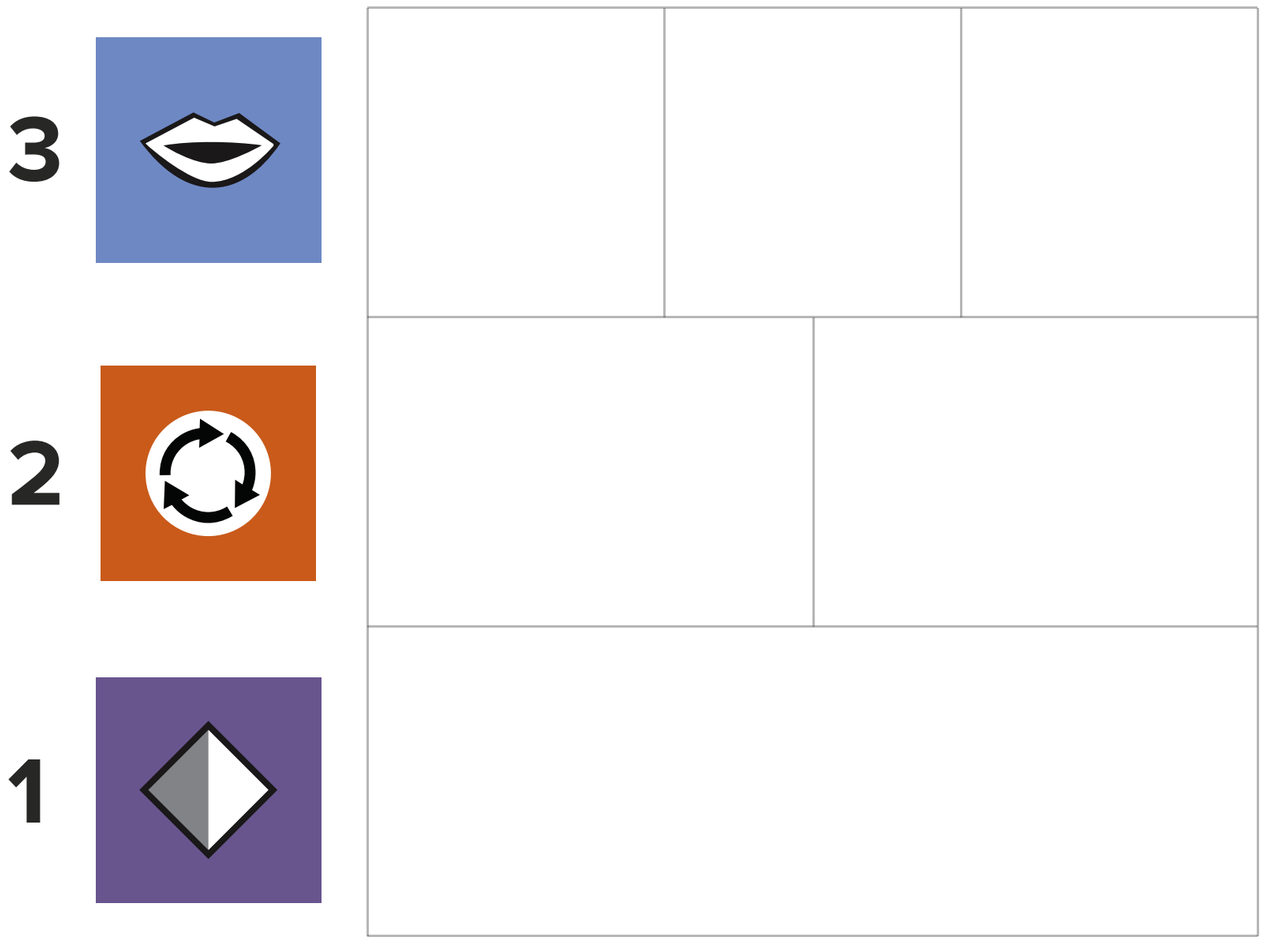
©2024 Riverside Assessments, LLC. All rights reserved.
©Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Product Differentiation by Learning Profile

All students in the class will be working on an exit ticket, but the exit tickets will vary in which icons are being used based on their *CogAT* results. Some students will be working on an exit ticket designed for NV+, while others are working on V+ or Q+ to embrace their strengths as thinkers while they reflect on new knowledge and understandings.

3-2-1 Exit Ticket Application for Q+ Learners



The last prompt in this case is the stretch element, where we ask the students to work in an icon that may not be as comfortable for their thinking strength.

Iconic Prompt Guidance

Language of the Discipline

What three terms related to _____ were new to you today?
Which three terms about _____ do you think are most important to know?

Over Time

What two changes over time can you identify related to _____ after our lesson today?
Which two changes over time seemed the most significant to you?
What might the long-term changes be based on _____?

Ethics

Based on our lesson today, what should we do when considering _____?
Is it ever appropriate to _____?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.

Depth & Complexity Icons, © 2006 J Taylor Education
Displayed icons are suggestions.

Click here for an instructional video.

©2024 Riverside Assessments, LLC. All rights reserved.

Depth & Complexity Conversational Roundtable

V+ Relative Strength



Purpose

Depth & Complexity Conversational Roundtables can work to effectively invite students of all thinking strengths into productive conversations. In this case, we are using the Conversational Roundtable to support and challenge
a student with strength in Verbal reasoning. The V+ Learner will be best suited to **explanations, elevated language application, and justification.**

Instructions/Application

Conversational Roundtables are graphic organizers that can be used to facilitate student discussions on nearly any topic. You simply put the focal point in the center. You could ask students to discuss a person, an event, a book or article, a law, a mathematics equation or formula, systems, concepts, and so on. Once you have determined your topic for focus, add appropriate and strategic icons for Depth and Complexity in the surrounding boxes to guide their discussion. Students should take notes in the boxes (as bulleted lists) to help them remember the points made by the group. This will serve as a nice reminder when they look back on this for review later in the lesson or unit of study. Conversational Roundtables can happen early in a lesson or unit of study, in the middle as a temperature check for understanding, or near the end as a review for a summative assessment.

- Step 1: Determine the topic.
- Step 2: Choose appropriate and strategic icons.
- Step 3: Group students for discussion (in this case, by *CogAT* alignment for strengths).
- Step 4: Allow a reasonable amount of time for collaboration while monitoring student progress and engagement.
- Step 5: Discuss the topic as a whole class so students are exposed to other ideas from other learner types.

Strengthen

Because we are using this Conversational Roundtable for a V+ learner, we will utilize icons for Depth and Complexity that this learner will find engaging and interesting: **Language of the Discipline, Unanswered Questions, Across Disciplines, Ethics.** Each box will have one of these icons to drive the discussion. In this case, you will have students of similar strengths working together to enhance the quality of their dialogue.

Stretch

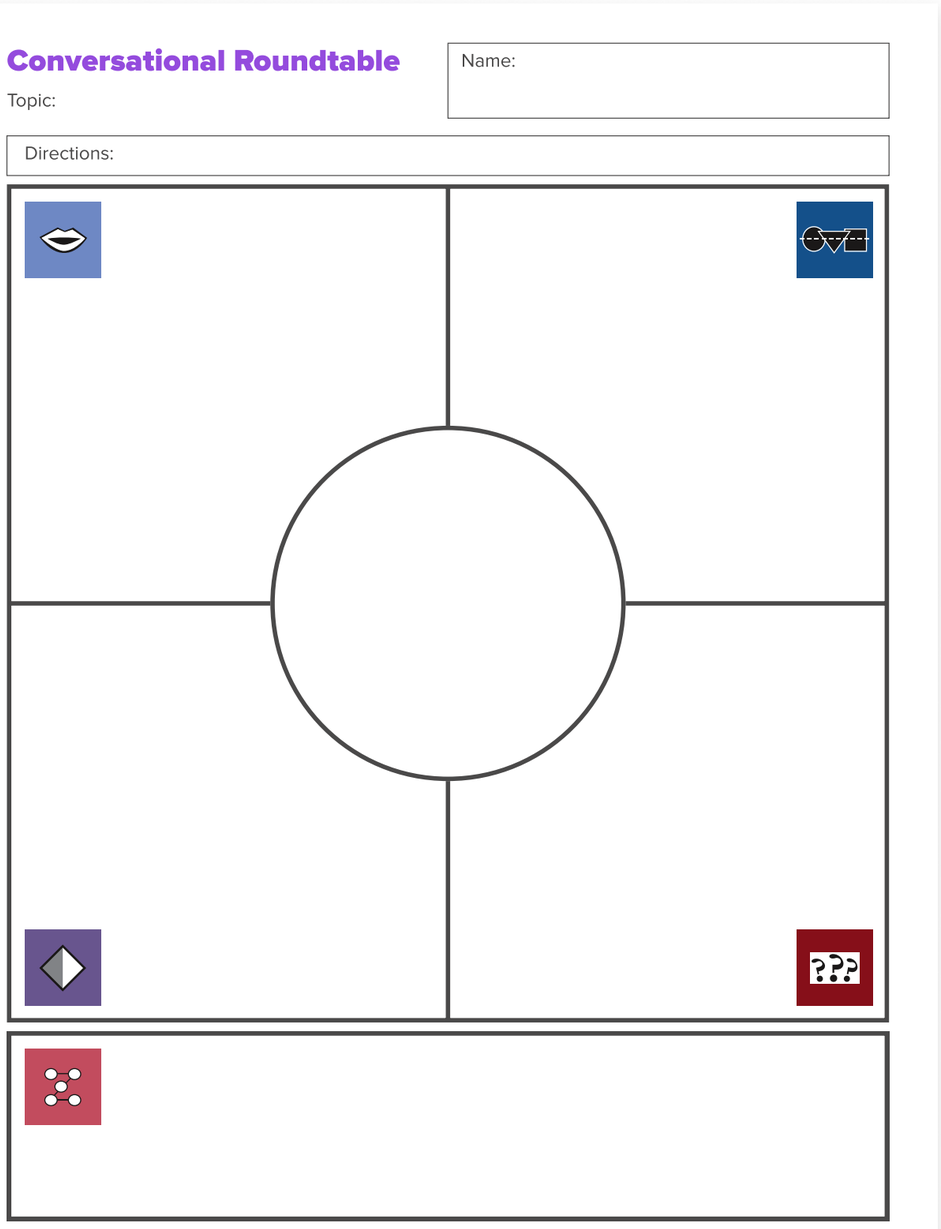
Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their thinking domain and work toward a reflection prompt utilizing something like Patterns or Trends, to stretch them into more analytical thinking. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Differentiation

Process Differentiation by Learning Profile

All students in the class will be working on Conversational Roundtables on the same topic; the change comes in the icons used for their particular strengths (Q+ grouped together, V+ grouped together, NV+ grouped together). The whole class can them come back together and discuss at the end, getting exposure to other icons and ideas.



Displayed icons are suggestions.

Click here for an instructional video.

Support Guiding Question Stems

Language of the Discipline

What terminology is specific to this field/study?
What elevated terms do we need to know as we learn about...?

Across Disciplines

Where can we see similar events/issues/themes in other areas of study?
Where can we see similar events/issues/themes in other areas of life?
What connections can you make between this and other classes you are in? Other subjects you are learning about?

Ethics

Would you consider this action right or wrong?
Was it appropriate that...?

Unanswered Questions

What questions do you still have about...?
What omissions or biases can you see in...?

Patterns

After this discussion, what Patterns have emerged?
What do they mean? What might be next?

Stretch (GT) Iconic Intersection Question Stems

Language of the Discipline and Ethics

Using the terminology of the field, discuss the ethical issues you see with...

Ethics and Unanswered Questions

What questions do you still have regarding the ethical implications of...?

Language of the Discipline and Across Disciplines

Using the terminology you have learned, what connections can you make to other fields of study or areas of life?

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Differentiation

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections. While a student with a verbal strength may gravitate toward writing, language, and explanation, they can transfer their learning to other areas. Use these questions to facilitate this connection:

- How does this topic connect with what you have learned in other areas of study?
- What themes emerged here that you can identify in other subjects? Areas of life?
- Is there any terminology used here that you have seen used in other areas of study?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.



©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Depth & Complexity Conversational Roundtable

Q+ Relative Strength



Purpose

Depth & Complexity Conversational Roundtables can work to effectively invite students of all thinking strengths into productive conversations. In this case, we are using the Conversational Roundtable to support and challenge a student with strength in Quantitative reasoning and tasks. The Q+ learner will be best suited by the **analytical discussions** taking place in this roundtable.

Instructions/Application

Conversational Roundtables are graphic organizers that can be used to facilitate student discussions on nearly any topic. You simply put the focal point in the center. You could ask students to discuss a person, an event, a book or article, a law, a mathematics equation or formula, systems, concepts, and so on. Once you have determined your topic for focus, add appropriate and strategic icons for Depth and Complexity in the surrounding boxes to guide their discussion. Students should take notes in the boxes (as bulleted lists) to help them remember the points made by the group. This will serve as a nice reminder when they look back on this for review later in the lesson or unit of study. Conversational Roundtables can happen early in a lesson or unit of study, in the middle as a temperature check for understanding, or near the end as a review for a summative assessment.

- Step 1: Determine the topic.
- Step 2: Choose appropriate and strategic icons.
- Step 3: Group students for discussion (in this case, by *CogAT* alignment for strengths).
- Step 4: Allow a reasonable amount of time for collaboration while monitoring student progress and engagement.
- Step 5: Discuss the topic as a whole class so students are exposed to other ideas from other learner types.

Strengthen

Because we are using this Conversational Roundtable for a Q+ learner, we will utilize icons for Depth and Complexity that this learner will find engaging and interesting: **Rules, Details, Patterns, Trends.** Each box will have one of these icons to drive the discussion. In this case, you will have students of similar strengths working together to enhance the quality of their dialogue.

Stretch

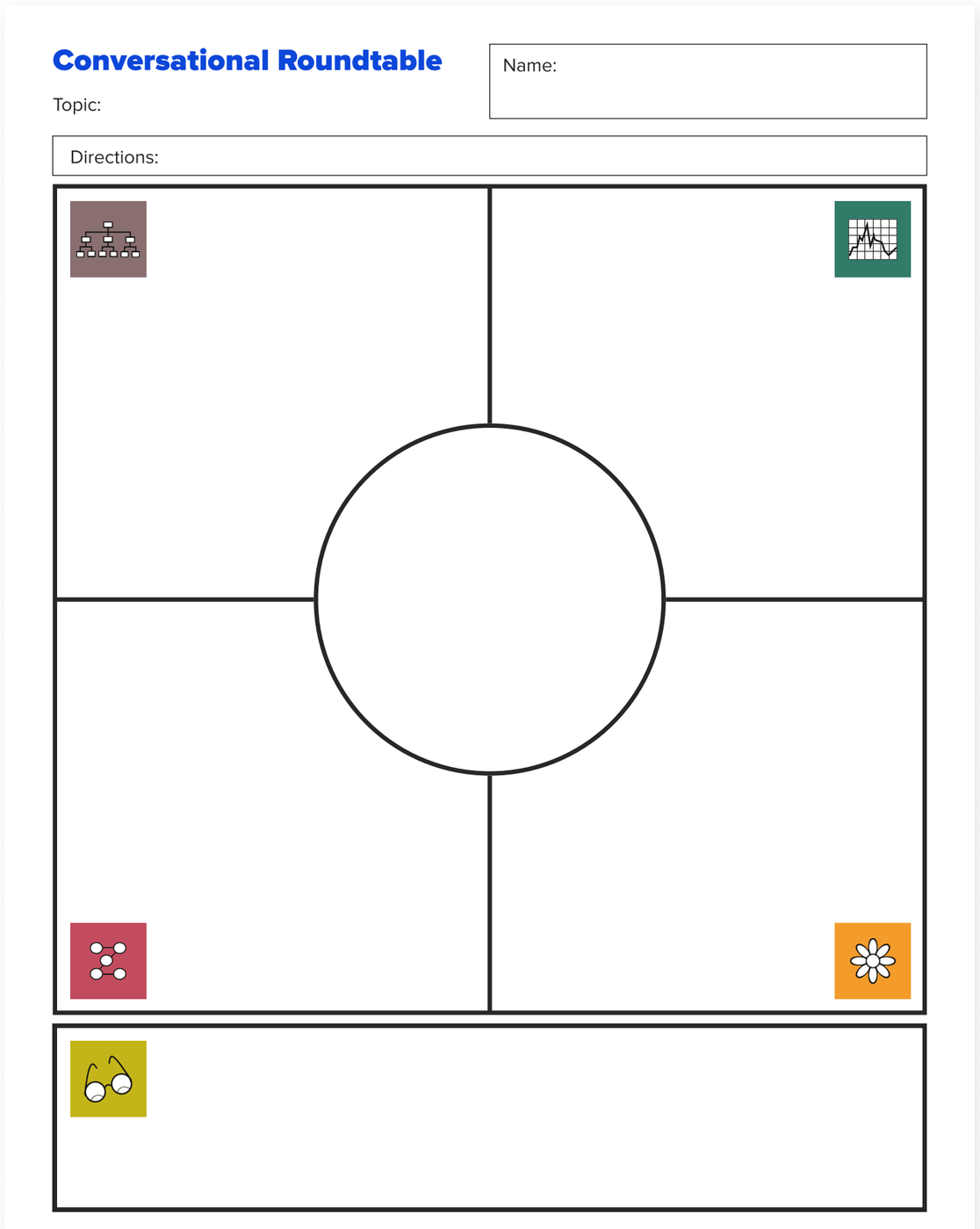
Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their analytical thinking domain and work toward a reflection prompt utilizing Multiple Perspectives or Across Disciplines. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Differentiation

Process Differentiation by Learning Profile

All students in the class will be working on Conversational Roundtables on the same topic; the change comes in the icons used for their particular strengths (Q+ grouped together, V+ grouped together, NV+ grouped together). The whole class can them come back together and discuss at the end, getting exposure to other icons and ideas.



Displayed icons are suggestions.

Click here for an instructional video.

Support Guiding Question Stems

Rules

What Rules must we follow when...?
What Rules must we know about before we...?
How would not following these Rules change the outcome?

Trends

What Trends do you notice when you look at...?
What might be causing the Trends you see in...?

Patterns

What Patterns do you notice when you look at...?
Based on the Pattern you see, what might happen next?

Details

What are distinguishing features of...?
What do these Details tell you about...?
What Details do you have to pay attention to when...?

Multiple Perspectives

How might _____ feel about...?
How might _____ view this conversation or topic differently?

Stretch (GT) Iconic Intersection Question Stems

Patterns and Trends

How might the Pattern change based on the Trend you found?

Details and Rules

Which Details make these Rules necessary to know and/or follow?

Patterns and Rules

What Patterns do you see in the Rules for...?

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Differentiation

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections. While a student with a quantitative strength may gravitate to math and science courses, they can transfer their learning to other areas. Use these questions to facilitate this connection:

- In what other classes have you seen this topic discussed? How are the discussions alike? Different?
- What themes emerged in the discussion that are present in other courses?
- What patterns can you recognize in this topic, and where do you see those in other areas of study?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.

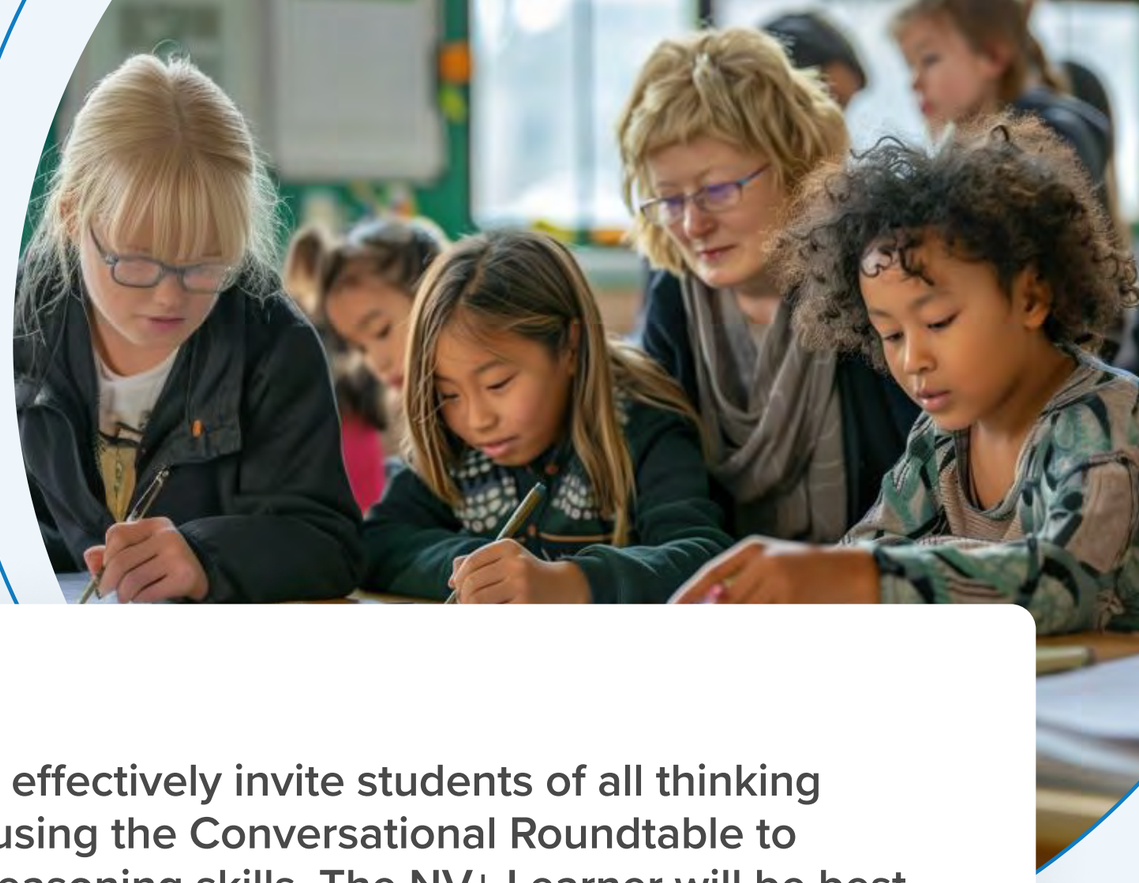
©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.



©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Depth & Complexity Conversational Roundtable

NV+ Relative Strength



Purpose

Depth & Complexity Conversational Roundtables can work to effectively invite students of all thinking strengths into productive conversations. In this case, we are using the Conversational Roundtable to support and challenge a student with strength in Nonverbal reasoning skills. The NV+ Learner will be best suited to discussions that allow them to **see into other fields/disciplines (particularly visual), build empathy, and concrete applications.**

Instructions/Application

Conversational Roundtables are graphic organizers that can be used to facilitate student discussions on nearly any topic. You simply put the focal point in the center. You could ask students to discuss a person, an event, a book or article, a law, a mathematics equation or formula, systems, concepts, and so on. Once you have determined your topic for focus, add appropriate and strategic icons for Depth and Complexity in the surrounding boxes to guide their discussion. Students should take notes in the boxes (as bulleted lists) to help them remember the points made by the group. This will serve as a nice reminder when they look back on this for review later in the lesson or unit of study. Conversational Roundtables can happen early in a lesson or unit of study, in the middle as a temperature check for understanding, or near the end as a review for a summative assessment.

- Step 1: Determine the topic.
- Step 2: Choose appropriate and strategic icons.
- Step 3: Group students for discussion (in this case, by *CogAT* alignment for strengths).
- Step 4: Allow a reasonable amount of time for collaboration while monitoring student progress and engagement.
- Step 5: Discuss the topic as a whole class so students are exposed to other ideas from other learner types.

Strengthen

Because we are using this Conversational Roundtable for an NV+ learner, we will utilize icons for Depth and Complexity that this learner will find engaging and interesting: **Multiple Perspectives, Across the Disciplines, Over Time, Unanswered Questions.** Each box will have one of these icons to drive the discussion. In this case, you will have students of similar strengths working together to enhance the quality of their dialogue.

Stretch

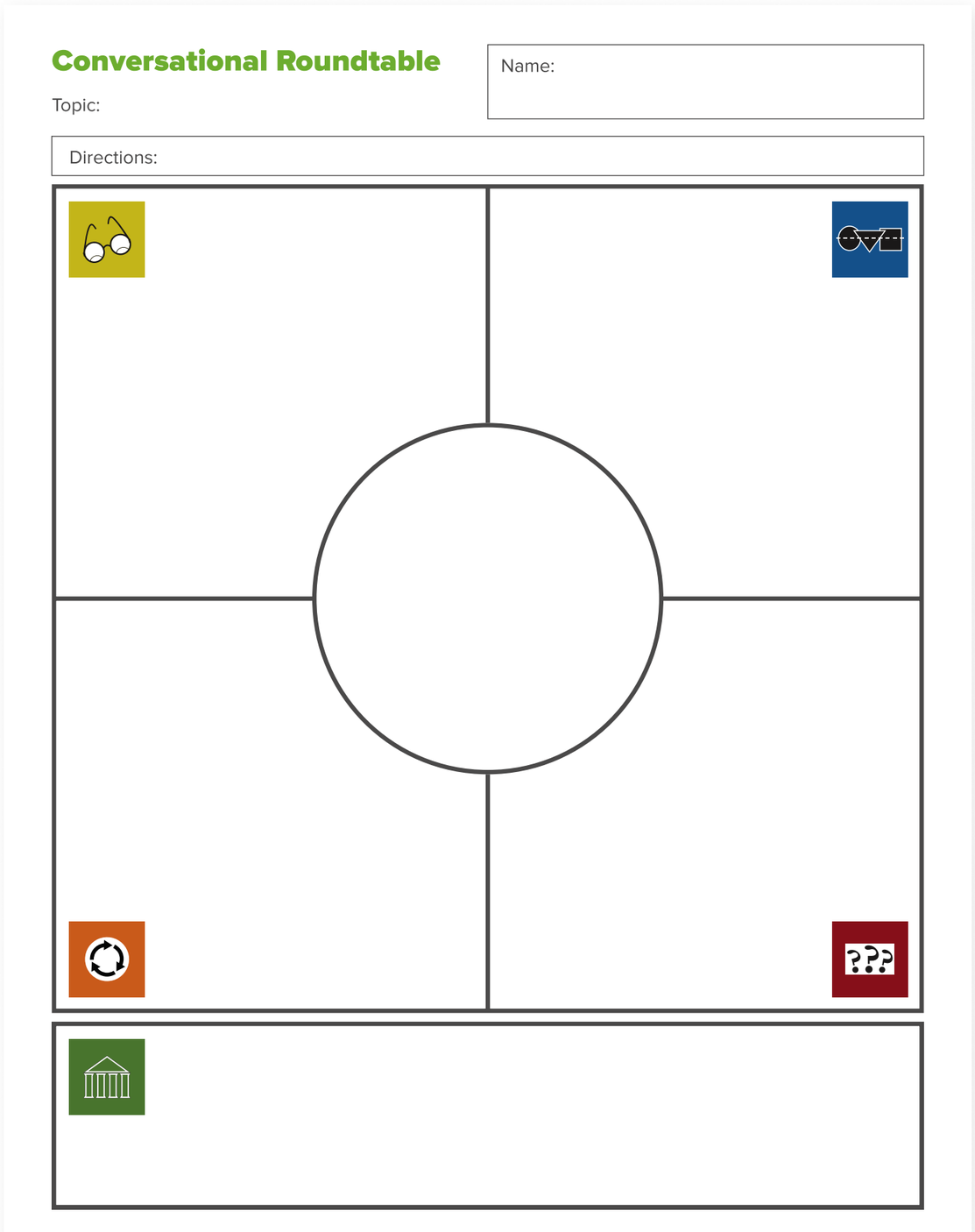
Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their thinking domain and work toward a reflection prompt utilizing Big Ideas or Ethics. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Differentiation

Process Differentiation by Learning Profile

All students in the class will be working on Conversational Roundtables on the same topic; the change comes in the icons used for their particular strengths (Q+ grouped together, V+ grouped together, NV+ grouped together). The whole class can them come back together and discuss at the end, getting exposure to other icons and ideas.



Displayed icons are suggestions.

Click here for an instructional video.

Support Guiding Question Stems

Multiple Perspectives

How might others view this event?
How might the other stakeholders feel about this change?
Why should we consider how _____ responds to this?

Across Disciplines

Where can we see similar events/issues/themes in other areas of study?
Where can we see similar events/issues/themes in other areas of life?
What connections can you make between this and other classes you are in? Other subjects you are learning about?

Over Time

How has _____ changed over time?
What accounts for how _____ has changed over time?
How was _____ different 50 years ago? 25 years ago? 5 years ago? Why does that change matter?

Unanswered Questions

What questions do you still have about...?
What omissions or biases can you see in...?

Patterns

How do all these ideas help us understand...?
What should we take away from this material/ discussion/reading/etc.?

Differentiation

Stretch (GT) Iconic Intersection Question Stems

Multiple Perspectives and Change Time

How have perspectives on this topic changed over time?

Change Time and Across Disciplines

What changes over time do we see in other fields that are similar to what we see here?

Multiple Perspectives and Unanswered Questions

Considering these perspectives, what questions do you still have about...?

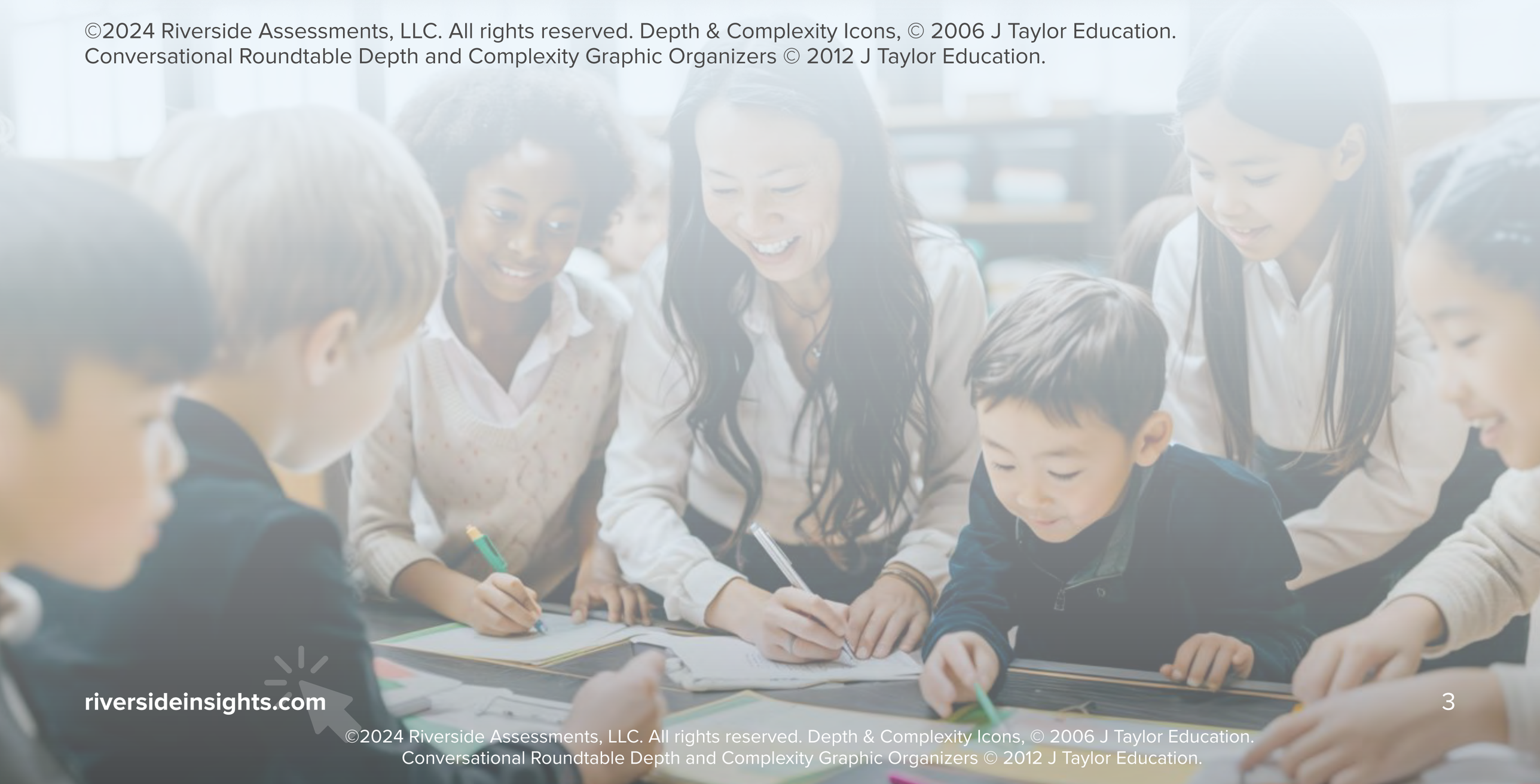
Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections. While a student with a nonverbal strength may gravitate toward technical writing or visual representations, they can transfer their learning to other areas. Use these questions to facilitate this connection:

- Where can you see this topic addressed in other areas of study? What connections do you find?
- How do the biases and gaps in knowledge about this topic connect to those of other areas of study?
- How can you apply this content/approach to problem solving/theme to other subjects? Disciplines? Areas of life?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.



©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education.
Conversational Roundtable Depth and Complexity Graphic Organizers © 2012 J Taylor Education.

Inquiry Learning

V+ Relative Strength



Purpose

Inquiry Learning is an opportunity for students to engage in activities that provoke curiosity. Students often lead the learning or determine the direction of the learning to some degree. By utilizing clues, posing questions, and investigating, students construct knowledge rather than having it delivered by the teacher. This often makes the learning more meaningful and long-lasting.

Instructions/Application

Inquiry learning can be done at any time during the learning cycle, but it is often best used early in the learning, before too much content has been shared by the teacher. Preparation for inquiry learning might include identifying an enduring understanding or universal theme, gathering appropriate sources for information acquisition, creating support documents, and implementing classroom management procedures for student-directed work (including a guidance station where students can go ask questions of the teacher during the inquiry process).

Strengthen

For the V+ learner, inquiry learning is best supported through **interpretation of graph data, verbal descriptions, discussions, connections between text and illustration,** and **sketch models.** Students with V+ strength are enticed by **creative thinking, recognition of interdisciplinary connections, considering multiple viewpoints, transforming something into something else,** and **posing Unanswered Questions.** These students also respond well to **unusual analogies,** as they can connect two seemingly unrelated things to develop new meaning. Inquiry can afford them the opportunity to do this thinking and develop enhanced understandings. You will also find humor engages these learners, and room to be funny themselves is also effective.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. V+ learners may struggle more with computations, prompts or questions that have one concrete right answer, and knowing how to break down lengthy instructions into bite-size and attainable steps.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Content by Student Interests

In inquiry learning activities, students can work independently or in groups. In groups, they should work with others who have a shared strength, in this case, V+. All students in the class, whether working alone or in groups, should work on the task built specifically to their strength (as seen below).

Phases of Inquiry

1. Orientation
The teacher stimulates curiosity by presenting information about the topic, posing questions, and offering problem statements.

2. Conceptualization
Students generate research questions and hypotheses about the project.

3. Investigation
Students plan a study, collect data, and analyze it.

4. Conclusion
Students construct their own knowledge based upon their inquiry, rather than having teachers give the answers to the students.

5. Discussion
Students present their findings to peers, a teacher, or family members, and engage in reflective activity to reinforce knowledge.

Applications in Teaching

Cultural Artifacts
Without much (if any) prior instruction, the teacher presents the class with artifacts from a culture and then asks them to figure out what they might have been used for. The students can then begin research of their own, aiming toward figuring out where the artifact came from, around when, and so on.

Brainstorming Solutions
Students work together to respond to a Big Idea question (overarching or universal concept). They then write their personal responses on post-its, placing them on the board as they go. They collaborate to combine ideas and put together the best response.

Vocabulary in Context
First present students with a new term (or terms), and ask them to take their best guesses as to what the word means. Then, show them the word used in a sentence, and see if they change their guesses. Then show it to them in a paragraph, and see how close they get to figuring out the term.

Stretch
Give the students a graph without any explanation. Ask them to interpret the graph. Then show them the labels for each axis, and ask them to refine their interpretation. Have them explain verbally what they understand from the graph.

References

Drew, C. (2023). *18 inquiry-based learning examples (benefits & criticisms).* Helpful Professor. https://helpfulprofessor.com/inquiry-based-learning-examples/

Pedaste, M., Mäeots, M., Siiman, L. A., de Jong, T., van Riesen, S. A. N., Kamp, E. T., Manoli, C. C., Zacharia, Z. C., & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review, 14,* 47–61. https://doi.org/10.1016/j.edurev.2015.02.003

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections. While a student with a verbal strength may gravitate toward writing, language, and explanation, they can transfer their learning to other areas. Use these questions to facilitate this connection:

- How does this topic connect with what you have learned in other areas of study?
- What themes emerged here that you can identify in other subjects? Areas of life?
- Is there any terminology used here that you have seen used in other areas of study?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Inquiry Learning

Q+ Relative Strength



Purpose

Inquiry Learning is an opportunity for students to engage in activities that provoke curiosity. Students often lead the learning or determine the direction of the learning to some degree. By utilizing clues, posing questions, and investigating, students construct knowledge rather than having it delivered by the teacher. This often makes the learning more meaningful and long-lasting.

Instructions/Application

Inquiry learning can be done at any time during the learning cycle, but it is often best used early in the learning, before too much content has been shared by the teacher. Preparation for inquiry learning might include identifying an enduring understanding or universal theme, gathering appropriate sources for information acquisition, creating support documents, and implementing classroom management procedures for student-directed work (including a guidance station where students can go ask questions of the teacher during the inquiry process).

Strengthen

For the Q+ learner, inquiry learning is best supported through **charts, graphs, data presentations, case studies, experiments,** and **concrete observations.** Students with Q+ strength are enticed by **analytical thinking, examination of Patterns and Trends, dissection of ideas,** and then **interpretation of the dissection.** These students also respond well to **puzzles.** Inquiry can afford them the opportunity to do this thinking and develop enhanced understandings.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. Q+ Learners have relative weakness in explaining their thinking in words, abstract concepts, and seeing real-world applications of concepts. For this reason, you will want to include these elements in the learning to grow the student.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Content by Student Interests

In inquiry learning activities, students can work independently or in groups. In groups, they should work with others who have a shared strength—in this case, Q+. All students in the class, whether working alone or in groups, should work on the task built specifically to their strength (as seen below).

Phases of Inquiry	Applications in Teaching
1. Orientation The teacher stimulates curiosity by presenting information about the topic, posing questions, and offering problem statements.	**Inquiring about a mystery by using clues** Students in a class see before-and-after photos of destroyed habitats as the teacher asks the students to ask questions in an effort to determine the cause of the destruction, and then discuss how it makes them feel.
2. Conceptualization Students generate research questions and hypotheses about the project.	**Deconstructing facts** Students are given a list of "facts" about different planets. Some of those facts are actually wrong. The students work in small groups and try to identify the different planets and which facts are false.
3. Investigation Students plan a study, collect data, and analyze it.	**Construction activities** A teacher supplies their students with paper-towel tubes, tape, cardboard boxes, and other materials so they can construct their own unique marble runs.
4. Conclusion Students construct their own knowledge based upon their inquiry, rather than having teachers give the answers to the students.	**Stretch: Coming up with methodologies for solving problems** A math teacher presents a three-dimensional object and asks student teams to choose their own methods to calculate its properties. Students then take turns presenting their strategy to the class.
5. Discussion Students present their findings to peers, a teacher, or family members, and engage in reflective activity to reinforce knowledge.	

References

Drew, C. (2023). *18 inquiry-based learning examples (benefits & criticisms).* Helpful Professor. https://helpfulprofessor.com/inquiry-based-learning-examples/

Pedaste, M., Mäeots, M., Siiman, L. A., de Jong, T., van Riesen, S. A. N., Kamp, E. T., Manoli, C. C., Zacharia, Z. C., & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review, 14,* 47–61. https://doi.org/10.1016/j.edurev.2015.02.003

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections. While a student with a quantitative strength may gravitate to math and science courses, they can transfer their learning to other areas. Use these questions to facilitate the connection:

- In what other classes have you seen this topic discussed? How are the discussions alike? Different?
- What themes emerged in the discussion that are present in other courses?
- What patterns can you recognize in this topic, and where do you see those in other areas of study?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Inquiry Learning

NV+ Relative Strength



Purpose

Inquiry Learning is an opportunity for students to engage in activities that provoke curiosity. Students often lead the learning or determine the direction of the learning to some degree. By utilizing clues, posing questions, and investigating, students construct knowledge rather than having it delivered by the teacher. This often makes the learning more meaningful and long-lasting.

Instructions/Application

Inquiry learning can be done at any time during the learning cycle, but it is often best used early in the learning, before too much content has been shared by the teacher. Preparation for inquiry learning might include identifying an enduring understanding or universal theme, gathering appropriate sources for information acquisition, creating support documents, and implementing classroom management procedures for student-directed work (including a guidance station where students can go ask questions of the teacher during the inquiry process).

Strengthen

For the NV+ learner, inquiry learning is best supported through the **opportunity to create (art, music, performance), working with metaphors and analogies, considering real-world concepts, hands-on learning,** and **detailed illustrations.** Students with NV+ strength are enticed by **practical thinking, detailed illustrations or diagrams, concrete applications,** and **visual representations of new content and ideas.** These students are great at “what if” questions and word problems that are real-world-centric. Inquiry can afford them the opportunity to do this thinking and develop enhanced understandings.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. NV+ learners are challenged by narrative writing, reading without visual support, and overly structured ways of thinking (prescriptive outlines). These students are adept problem solvers, but sometimes lack the skills to achieve their answer (calculations, data interpretation, and explaining new understandings in academic language).

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Content by Student Interests

In inquiry learning activities, students can work independently or in groups. In groups, they should work with others who have a shared strength, in this case, NV+. All students in the class, whether working alone or in groups, should work on the task built specifically to their strength (as seen below).

Phases of Inquiry

1. Orientation
The teacher stimulates curiosity by presenting information about the topic, posing questions, and offering problem statements.

2. Conceptualization
Students generate research questions and hypotheses about the project.

3. Investigation
Students plan a study, collect data, and analyze it.

4. Conclusion
Students construct their own knowledge based upon their inquiry, rather than having teachers give the answers to the students.

5. Discussion
Students present their findings to peers, a teacher, or family members, and engage in reflective activity to reinforce knowledge.

Applications in Teaching

Concept Mapping
As students research or dig for information on a topic (e.g., Boston Tea Party), they are tasked with creating a concept map, which will help them see connections through various events, people, dates, and so on.

Divergent Thinking
Students are given a problem or situation to which there are many possible solutions. For example, without teaching how to solve for X, see if they can get there on their own. Have them share their approach and then work through which approach(es) are most likely to work.

More Wrong
Colin Seale, Founder and CEO of ThinkLaw, shares one of his favorite strategies. He divides the class into two groups and assigns each one a problem with a wrong solution. Each group's job is to convince him their problem is most wrong. This is another way to provide discovery options as well as allow students with strong verbal skills to utilize them in math class.

Stretch: How did you get there?
Give students the answer to the word problem, and ask them to work backward to figure out the type of equation that was used or the sequence of steps.

References

Drew, C. (2023). *18 inquiry-based learning examples (benefits & criticisms).* Helpful Professor. https://helpfulprofessor.com/inquiry-based-learning-examples/

Pedaste, M., Mäeots, M., Siiman, L. A., de Jong, T., van Riesen, S. A. N., Kamp, E. T., Manoli, C. C., Zacharia, Z. C., & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review, 14,* 47–61. https://doi.org/10.1016/j.edurev.2015.02.003

Seale, C. (2021). ThinkLaw. https://thinklaw.us/

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Differentiation

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections. While a student with a nonverbal strength may gravitate toward technical writing or visual representations, they can transfer their learning to other areas. Use these questions to facilitate this connection:

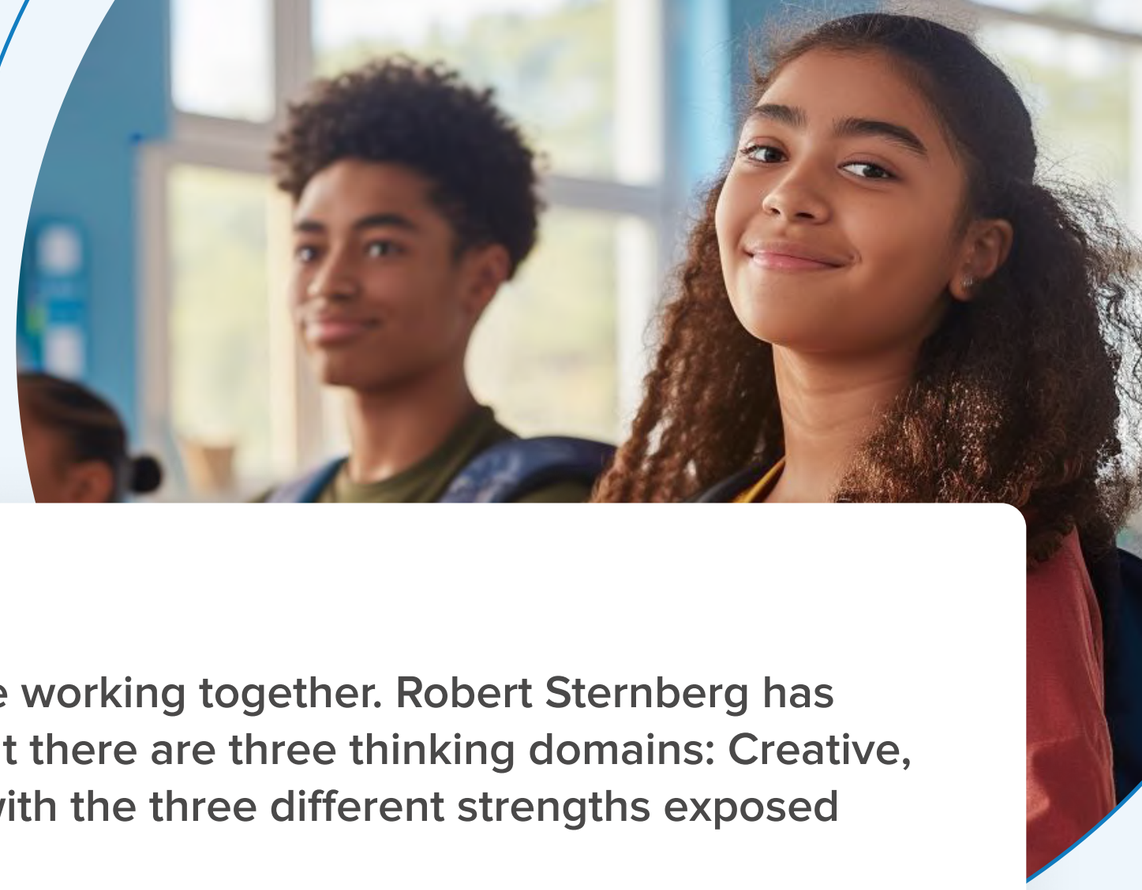
- Where can you see this topic addressed in other areas of study? What connections do you find?
- How do the biases and gaps in knowledge about this topic connect to those of other areas of study?
- How can you apply this content/approach to problem solving/theme to other subjects? Disciplines? Areas of life?

GT: gifted/talented; NV: nonverbal; Q: qualitative; V: verbal.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

CAP Activities



Purpose:

CAP Activities allow teachers to get students who think alike working together. Robert Sternberg has presented his Triarchic Theory of Intelligence suggesting that there are three thinking domains: Creative, Analytical, and Practical. These line up rather conveniently with the three different strengths exposed through *CogAT* testing: Verbal, Quantitative, and Nonverbal.

Instructions/Application:

CAP Activities are potent bursts of instruction that happen after initial instruction but before any kind of assessment for mastery. They provide an opportunity for students to make meaning of new information, build scaffolds, and develop stronger recall. CAP Activities should be designed in such a way that they can be done for 10 to 15 minutes, maybe 20 minutes at most. This is plenty of time for students to work in their dominant thinking domain with the new material before being asked to do evaluated academic application.

- Step 1: Look for the topic or piece of curriculum you want to sit on and dive into. Perhaps this is something you often have to reteach, or something you know will come back again and again in your course.
- Step 2: Determine the tasks for the Creative, Analytical, and Practical options.
- Step 3: Show students all three tasks, and let them choose which one they want to do that day.

That's it. No grading is necessary unless you are using the CAP Activity as an assessment and have a common rubric for all three tasks.

Strengthen:

Because we are using Triarchic Theory of Intelligence along with *CogAT*, we will use both labels to describe the task options.

C (V+): V+ learners employ creative thinking naturally. They see interdisciplinary connections (Across the Disciplines) and appreciate roleplay (Multiple Perspectives), writing stories and creating characters, transforming content into something completely different (a math equation into a poem), exploring and creating new vocabulary, using professional terminology (Language of the Discipline), facing seemingly ridiculous challenges (define this concept without words, or only using post-its), and making unusual analogies (reflection is like a taco because…). Developing tasks for these learners requires focus on the brain function yielded by the task. These students like to write, but if you ask them to write an outline, that won't get their brains engaged in the appropriate neurological activity.

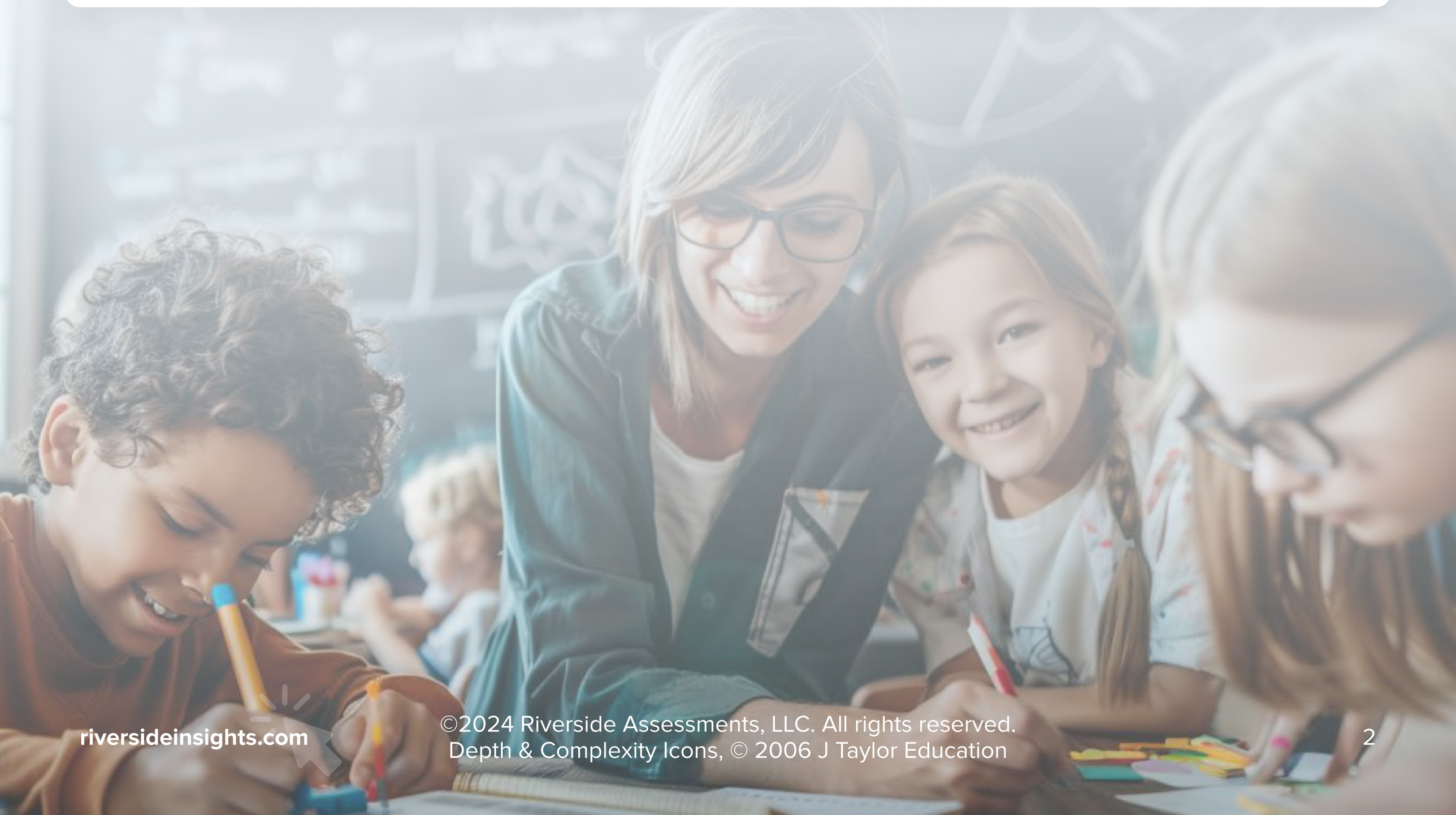
©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

A (Q+): Q+ thinkers align well with the Analytical domain in that they like to prioritize and rank ideas, events, historical impact, etc. Q+ thinkers will recognize Patterns and seek to recreate them or consider their importance (Patterns); they excel at identifying Trends and using them to make predictions (Trends) and recognizing significant facts, details, events, dates, timelines (Details). They also appreciate systems where there are clear procedures, policies, sequences, and rules to follow in order to complete the process (Rules). Let these learners rank ideas and then justify their rankings using specific details from the course materials. Let them argue about Patterns or Trends and the possible implications. When possible, let them work through their learning by creating graphs/charts, collecting and analyzing data, and so on to engage with the new material.

P (NV+): NV+ learners are most closely aligned with Practical domain thinkers because of the usefulness of their skill sets. These learners are able to see Across Disciplines and recognize complex Patterns as they relate to big-picture concepts or real-world issues. NV+ thinkers love hypothetical scenarios or engineering-style challenges of making something work better or more efficiently. They want to create PSAs and informative pamphlets, utilizing their visual and linguistic strengths. They have an authentic interest in "what if" questions (What if there was no gravity? What if we had no right angles—how would that affect architecture? furniture?). They want to reflect on what might happen if things don't go according to plan (photosynthesis doesn't follow the correct sequence, punctuation is used incorrectly, can we solve this algebraic equation if we don't follow the steps in order). These thinkers also love posing questions and challenging bias or noticeable gaps in information or research presented (Unanswered Questions).

Stretch:

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their dominant thinking domain, challenging them to work in other modes of thinking, facilitating *balanced intelligence*.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Differentiation

Process Differentiation by Learning Profile:

All students in the class will be working on the CAP Activity, but will be grouped by their selections (which will generally line up with the *CogAT* results). If you find they are not following their *CogAT* results, you can place them in the correlating group to see how they do. They may just not have been enticed by that particular option or the topic.

Special Education **GT/HiCap** **Twice-Exceptional** **EB/ESL/ELL**

CAP Activity Design and Implementation

Identify Learning Objective:

C (V+)	Build/develop Cartoon/sketch Demonstrate/act out Write original short story/poem/song/play	Collage Storyboard Unusual analogies TLAD
	Aligned Icons Language of the Discipline, Multiple Perspectives, Across Disciplines, Big Idea	
A (Q+)	Graph/chart/diagram Make a timeline Sequence Rank Outline	Justify/explain Debate/argue/ defend Categorize Compare/contrast
	Aligned Icons Details, Patterns, Trends, Rules	
P (NV+)	Imagine/hypothetical scenario Problem solve Infer bigger meaning Global implications	What if... Anticipate Real-world issues
	Aligned Icons Big Idea, Unanswered Questions, Over Time, Across Disciplines	

Helpful Hints for Implementation

- Try to offer similar difficulty levels in each activity.
- Allow students to choose the activity (do not assign students to a group).
- Students may adjust CAP activity choices by topic or subject, depending on their preferences/areas of strength.
- Be flexible...group sizes may be very different during the activity.
- It is not important if the students complete the activity; what is crucial is that they get this time to think about it in their thinking domain.
- Start writing CAP Activities by choosing a piece of content they have to retain or memorize (facts, dates, events and outcomes, procedures, systems, sequences, grammar elements, writing genres, rhetorical appeals)

GT: To enhance the challenge for gifted learners, include iconic prompts, intersections, or pathways as part of the CAP Activity, ready to add on as they show you they are ready.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Differentiation

Reflection:

Post a critical thinking reflection question here for use as a group discussion, whole-class discussion, review, exit ticket, etc. so students take a moment to consider the learning they did in the CAP Activity.

CAP: creative, analytical, practical; EB: emerging bilingual; ELL: English-language learner; ESL: English as a second language; GT: gifted/talented; NV: nonverbal; Q: qualitative; TLAD: think like a disciplinarian; V: verbal.



©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education

Details Deep Dive for All Strength Types



Purpose

Graphic Organizers can be a highly effective way to guide discussion and academic collaboration for students of all capacities and strengths. You will find, however, that certain GOs may work better for different thinker strengths.

Instructions/Application

The following GO is a Depth & Complexity Details Deep Dive, which can be used to facilitate student discussions on nearly any topic or to just guide students in putting together their ideas and thinking critically. You simply share the focal point with your students. You could ask them to discuss a person, an event, a book or article, a law, a mathematics equation or formula, systems, concepts, and so on. Once you have determined your topic for focus, add appropriate and strategic icons for Depth and Complexity in the surrounding petals to guide their discussion, as modeled on page 3. Students should take notes in the petals to help them remember the points made by the group. This will serve as a nice reminder when they look back on this for review later in the lesson or unit of study. Details Deep Dive can happen early in a lesson or unit of study, in the middle as a temperature check for understanding, or near the end as a review for a summative assessment.

- Step 1: Determine the topic.
- Step 2: Choose appropriate and strategic icons.
- Step 3: Group students for discussion (in this case, by *CogAT* alignment for strengths).
- Step 4: Allow a reasonable amount of time for collaboration or independent work while monitoring student progress and engagement.
- Step 5: Discuss the topic as a whole class so students are exposed to other ideas from other learner types.

Strengthen

Because we are using GOs to facilitate learning for all strengths, they are aligned as follows:

Q+: Depth & Complexity Right or Wrong? This GO will guide students in comparative thinking, analysis and using specific details or facts as justification for interpretation of the topic (Patterns, Deta Rules).

V+: Depth & Complexity Frames using Multiple Perspectives This GO will allow for some inte and creativity while guiding students to consider other points of view, building empath (Multiple Perspectives, Language of the Discipline, Across Disciplines, Unanswered Questions).

NV+: Depth & Complexity Big Idea This GO is great for NV+ thinkers because it will require students to do a little analytical thinking and also put together their ideas for relevance to bigger concepts (Unanswered Questions, Ethics, Over Time, Big Idea).

All icons can be used in all GOs, but I would suggest sticking with those icons that align nicely with each thinker type. Within the GO, you can offer as much or as little assistance in the icons as you feel is appropriate, or as a means of supporting students who may need more support to complete the task.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Details Deep Dive Depth and Complexity Graphic Organizers © 2020 J Taylor Education.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their thinking domain and comfort zones, so each flower has a section for stretching as well as many petals dedicated to their strengths. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Details Deep Dive Depth and Complexity Graphic Organizers © 2020 J Taylor Education.

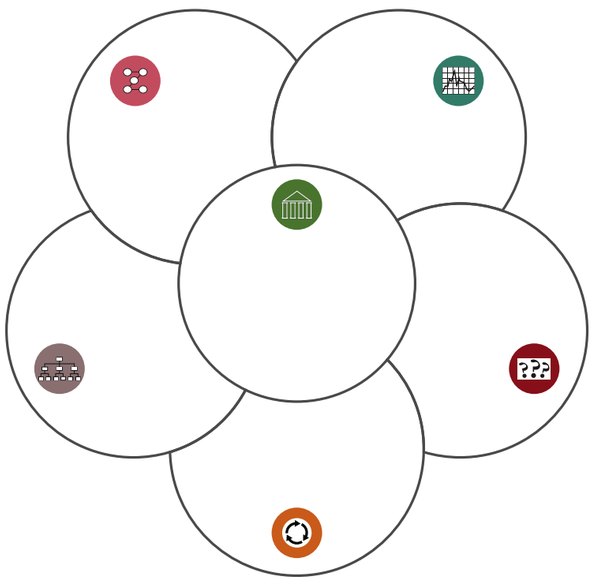


Differentiation

Process Differentiation by Learning Profile

All students in the class will be working with Details Deep Dive on the same topic; the change comes in the icons used for their particular strengths (Q+ grouped together, V+ grouped together, NV+ grouped together). The whole class can thencome back together and discuss at the end, getting exposure to other icons and ideas.

Details for Q+



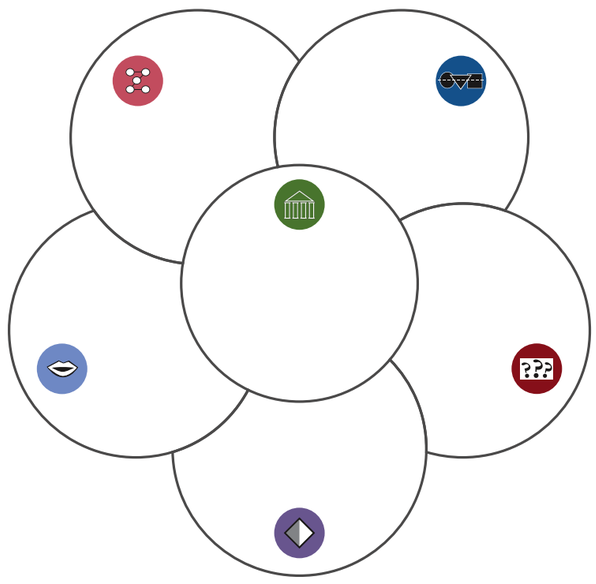
Strength

Patterns, Trends, Rules

Stretch

Unanswered Questions, Over Time

Details for V+



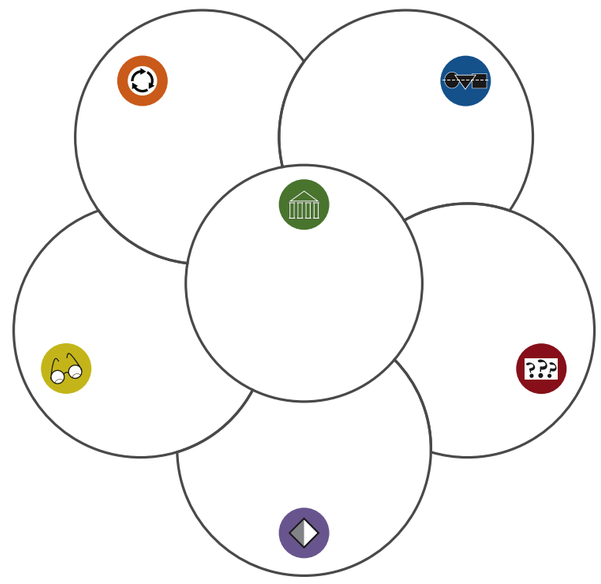
Strength

Language of the Discipline, Across Disciplines, Unanswered Questions, Ethics

Stretch

Patterns

Details for NV+



Strength

Ethics, Over Time, Multiple Perspectives

Stretch

Ethics, Big Idea

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Details Deep Dive Depth and Complexity Graphic Organizers © 2020 J Taylor Education.
Displayed icons are suggestions.

Click here for an instructional video.

Differentiation

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections.

While a student with a quantitative strength may gravitate to math and science courses, they can transfer their learning to other areas. Use these questions to facilitate the connection:

- **In what other classes have you seen this topic discussed? How are the discussions alike? Different?**
- **What themes emerged in the discussion that are present in other courses?**
- **What patterns can you recognize in this topic, and where do you see those in other areas of study?**

While a student with a verbal strength may gravitate toward writing, language, and explanation, they can transfer their learning to other areas. Use these questions to facilitate this connection:

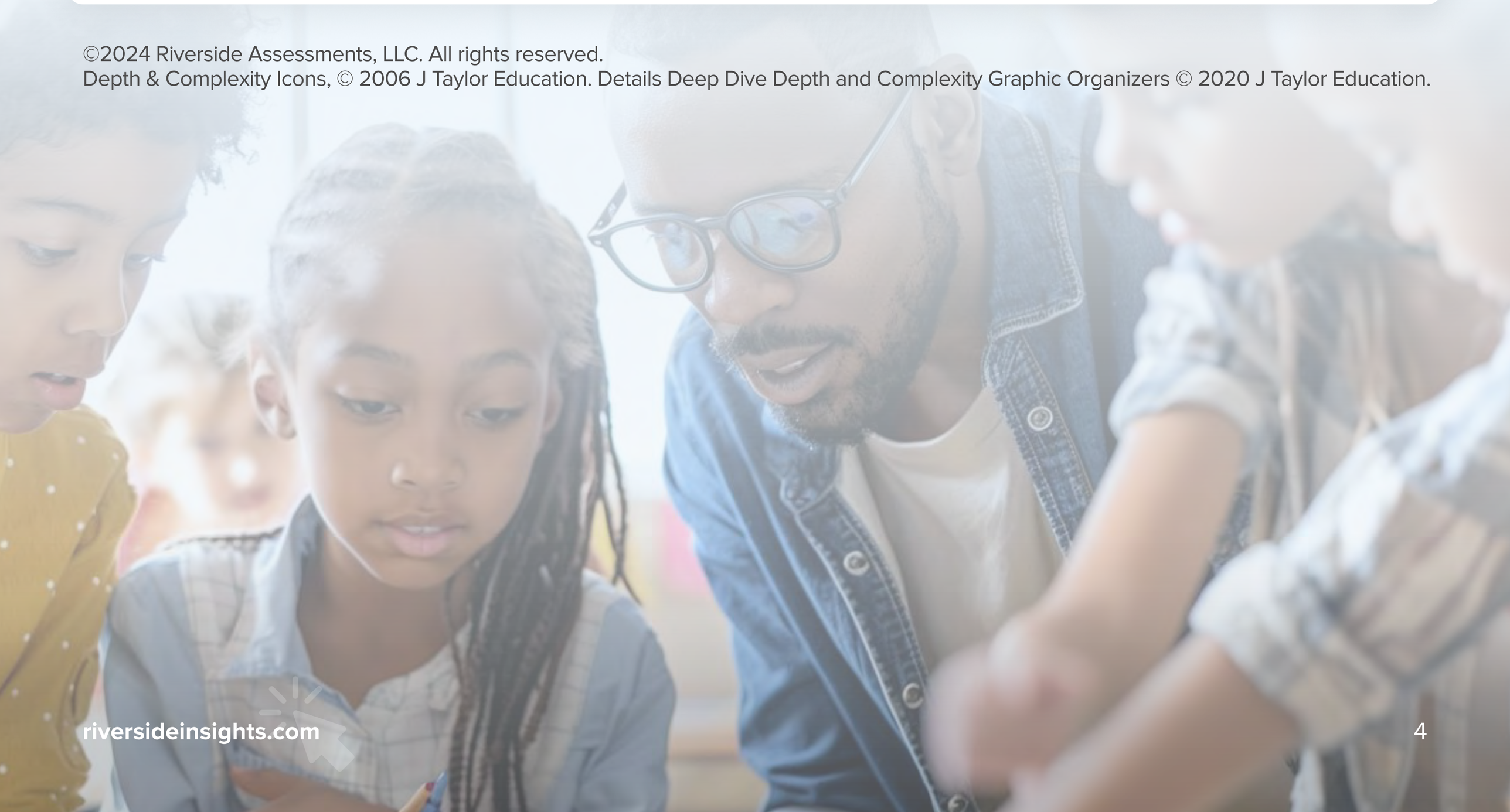
- **How does this topic connect with what you have learned in other areas of study?**
- **What themes emerged here that you can identify in other subjects? Areas of life?**
- **Is there any terminology used here that you have seen used in other areas of study?**

While a student with a nonverbal strength may gravitate toward technical writing or visual representations, they can transfer their learning to other areas. Use these questions to facilitate this connection:

- **Where can you see this topic addressed in other areas of study? What connections do you find?**
- **How do the biases and gaps in knowledge about this topic connect to those of other areas of study?**
- **How can you apply this content/approach to problem solving/theme to other subjects? Disciplines? Areas of life?**

GO: graphic organizer; NV: nonverbal; Q: qualitative; V: verbal.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Details Deep Dive Depth and Complexity Graphic Organizers © 2020 J Taylor Education.



Depth & Complexity Iconic Prompts, Intersections, and Pathways



This is differentiation by Readiness Level. Students who are challenged by the Depth & Complexity icons will work primarily in iconic prompts. Students ready for a more complicated cognitive challenge will work more in iconic intersections and pathways.

The Depth and Complexity Framework was originally developed in the mid-1990s by Dr. Sandra Kaplan, Bette Gould, and Sheila Madsen. Its primary purpose was to push students towards thinking similar to professionals/experts. The creators sought to answer the question: How can educators prompt students to go beyond a basic understanding of content and elicit critical thinking at an expert level, regardless of topic/content?

The icons of Depth and Complexity are prompts used to initiate a more advanced and extensive understanding of subject matter for all learners. The icons should be thought of as a verb, or lens of learning, that will activate the synthesis of content using higher-level thinking skills. The iconic prompts of Depth and Complexity challenge learners of all ages and are applicable to every subject. If you would like to learn more about the Depth and Complexity icons, visit https://depthcomplexity.com/the-icons/.

Iconic Prompts

Icon	Descriptions	Key Words / Examples
Big Idea	Identify the big idea or statement that applies to these ideas. What is the main idea?	Draw conclusions based on evidence Make generalizations Summarize Main Idea
Details	Find evidence and examples to support opinions and ideas. What are the characteristics?	Parts Factors Attributes Characteristics Distinguishing Traits Specifics
Ethics	Examine the ethical or moral principles involved. What is right or wrong?	Values Morals Judging Differing Opinions Dilemmas Biases
Language of the Discipline	Identify and use the vocabulary specific to the subject. What words are used by experts in the field of study?	Jargon Acronyms Vocabulary Special phrases
Trends	Identify the sequence of events. Describe the patterns you see.	Repetition Pattern Prediction Recurring elements Sequence Cause and effect
Rules	What are the implicit and explicit rules? What are rules for this subject?	Structure Order Reasons Organization Methods Standards

Icon	Descriptions	Key Words / Examples
Trends	Identify patterns over time and make predictions. Where is this going?	General direction Tendency Current styles Forecast
Unanswered Questions	What information is unclear, missing, or unavailable? What has not been proven?	Puzzle Conundrum Unsolved Incomplete Ideas Dilemma Ambiguity
Across Disciplines	Describe a topic's place in more than one subject area. Relate the area of study to other subjects.	Connect Associate Integrate Link Ideas
Over Time	Describe the topic over time. Describe the past, present, and possible future related to this issue or topic. How and why do things change? What doesn't it change?	Past, present, and future Historical perspective Change Compare and contrast
Multiple Perspectives	Analyze the subject from different points of view. How would others see the situation differently?	Point of View Ways of seeing and reporting things Slant Bias

Iconic Prompts involve one thinking task (question or prompt) using one icon only. These are especially important for younger learners to begin building neurological pathways, and for students with lower stanine levels to work with icons in an appropriate way.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education.

Iconic Combination Matrix

Iconic Combination Matrix

Name:_____

Date: _____

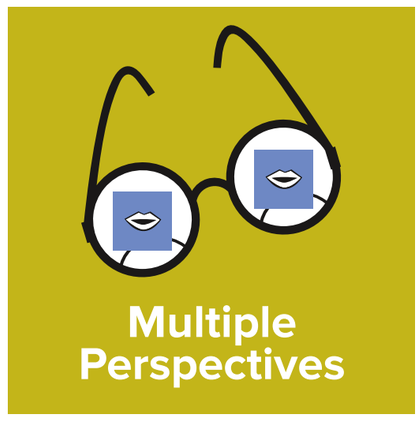
Topic:	dilemmas, biases, prejudices, moral values, pros and cons	past/present/future, predictions based on history, note change	puzzles, unsolved information, unknowns, doubtful
terminology, words used by an expert, lexicon, figures of speech			
different points of view, interpretation of information from different perspectives			
general directions and tendencies, current styles and influences, how patterns change over time			

Depth & Complexity Icons, © 2006 J Taylor Education

Iconic Intersections



What's most important here is that the thinking task has one icon reliant upon the other?



Which details allowed you to recognize the trend? Which language differences would you see between these different perspectives?

Iconic Intersections/Combinations involve using two icons to elevate the critical thinking challenge for students. You can present in unique graphics you create like the ones above, or in the matrix format, or, in your regular question posing format with both icons listed.

Iconic Pathways

Iconic Pathway Planner

Name:_____

Date: _____

1st icon → 2nd icon → 3rd icon

Rationale: _____

Rationale: _____

Rationale: _____

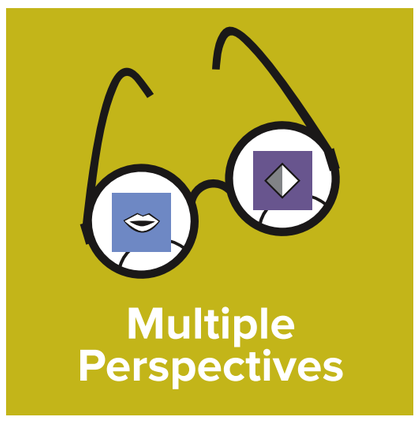
Intended Learning Outcomes & Success Measures:

Depth & Complexity Icons, © 2006 J Taylor Education

Displayed icons are suggestions.

Iconic Pathways Planner

Iconic Pathways are thinking tasks that involve three or more icons at one time, all dependent on one another.



How are the terms used and the ethical concerns different for each of these perspectives?

What language around ethics might shift from role to role in this situation?

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Iconic Combination Matrix Depth and Complexity Graphic Organizers © 2020 J Taylor Education. Iconic Pathway Planner Depth and Complexity Graphic Organizers © 2020 J Taylor Education

Graphic Organizers for All Strength Types



Purpose

Graphic Organizers can be a highly effective way to guide discussion and academic collaboration for students of all capacities and strengths. You will find, however, that certain graphic organizers may work better for different thinker strengths.

Instructions/Application

The following are GOs that can be used to facilitate student discussions on nearly any topic. You simply share the focal point with your students. You could ask them to discuss a person, an event, a book or article, a law, a mathematics equation or formula, systems, concepts, and so on. Once you have determined your topic for focus, add appropriate and strategic icons for Depth and Complexity in the surrounding boxes to guide their discussion, as modeled below. Students should take notes in the boxes (as bulleted lists) to help them remember the points made by the group. This will serve as a nice reminder when they look back on this for review later in the lesson or unit of study. GOs can happen early in a lesson or unit of study, in the middle as a temperature check for understanding, or near the end as a review for a summative assessment.

- Step 1: Determine the topic.
- Step 2: Choose appropriate and strategic icons.
- Step 3: Group students for discussion (in this case, by *CogAT* alignment for strengths).
- Step 4: Allow a reasonable amount of time for collaboration while monitoring student progress and engagement.
- Step 5: Discuss the topic as a whole class so students are exposed to other ideas from other learner types.

Strengthen

Because we are using GOs to facilitate learning for all strengths, they are aligned as follows:

Q+: Depth & Complexity Right or Wrong? This GO will guide students in comparative thinking, analysis and using specific details or facts as justification for interpretation of the topic (Patterns, Deta Rules).

V+: Depth & Complexity Frames using Multiple Perspectives This GO will allow for some inte and creativity while guiding students to consider other points of view, building empath (Multiple Perspectives, Language of the Discipline, Across Disciplines, Unanswered Questions).

NV+: Depth & Complexity Big Idea This GO is great for NV+ thinkers because it will require students to do a little analytical thinking and also put together their ideas for relevance to bigger concepts (Unanswered Questions, Ethics, Over Time, Big Idea).

All icons can be used in all graphic organizers, but I would suggest sticking with those icons that align nicely with each thinker type. Within the GO, you can offer as much or as little assistance in the icons as you feel is appropriate, or as a means of supporting students who may need more support to complete the task.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2020 J Taylor Education.

Stretch

Because we are not satisfied with letting students work only in their areas of strength, we also need to stretch their thinking and comfort levels. To achieve this, we will use an icon for Depth and Complexity that is well outside their thinking domain and work toward a reflection prompt with this more challenging icon. This will allow them to process the learning and discussion as well as challenge them to think in a way they are less accustomed to. You can then ask the whole class to participate in the reflection discussion and share their ideas.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2020 J Taylor Education.

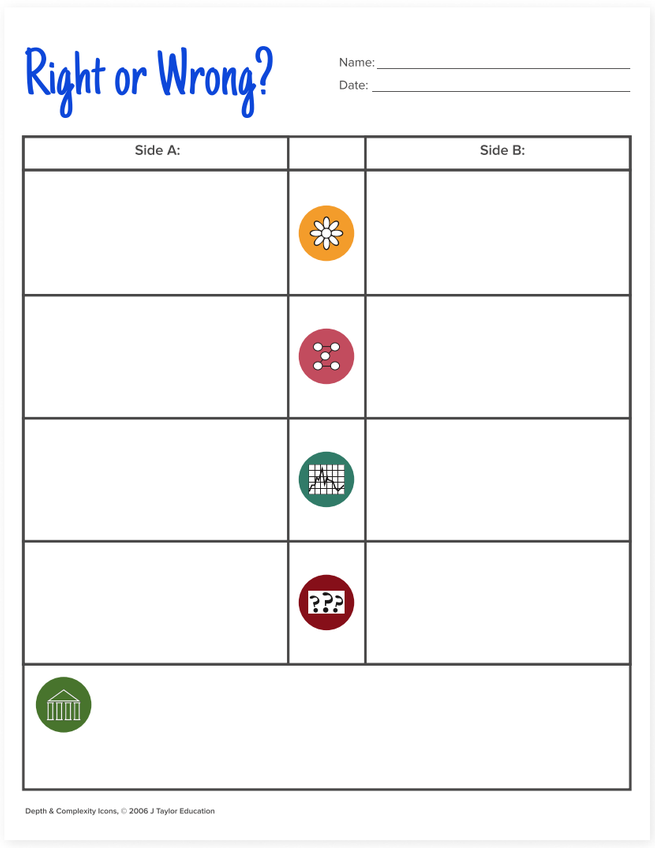


Differentiation

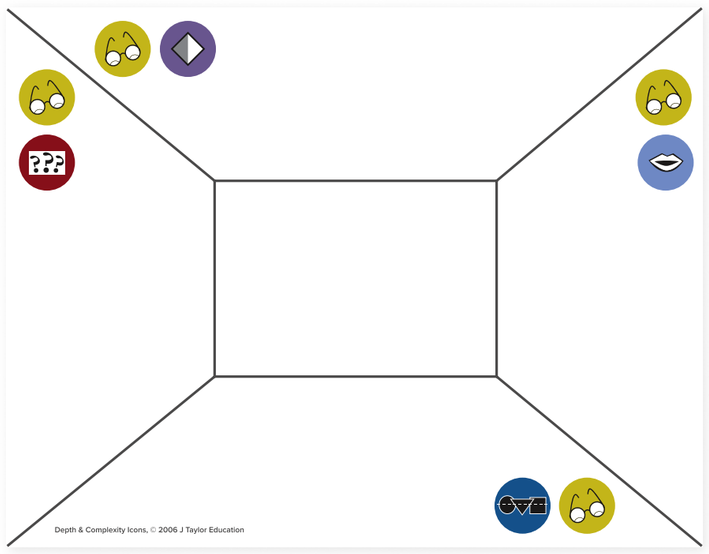
Product Differentiation by Learning Profile

All students in the class will be working with GOs on the same topic; the change comes in the icons used for their particular strengths (Q+ grouped together, V+ grouped together, NV+ grouped together, as well as which GO each group is using). The whole class can them come back together and discuss at the end, getting exposure to other icons and ideas.

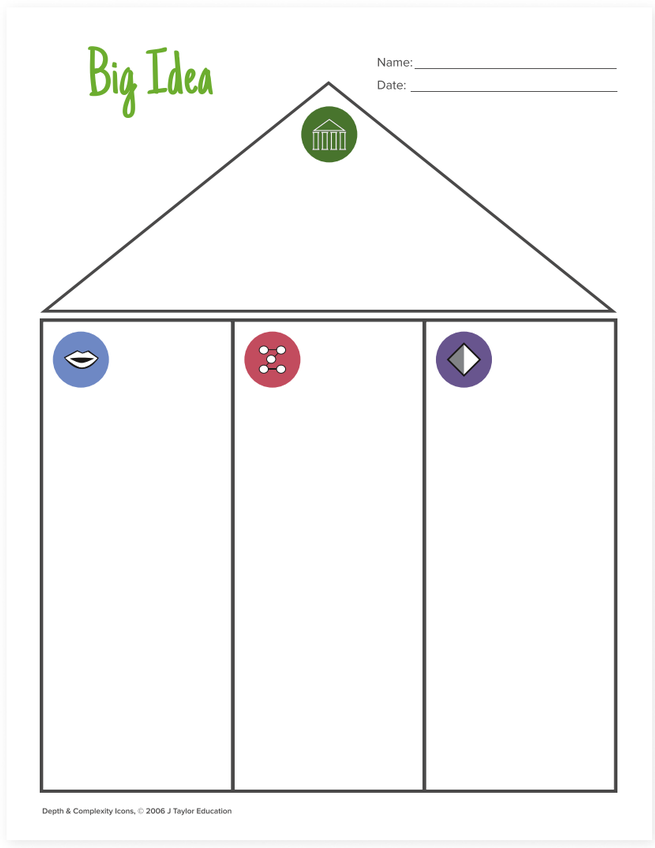
Right or Wrong?



Frames with Multiple Perspectives



Big Idea



Displayed icons are suggestions.

Click here for an instructional video.

Interdisciplinary Connections

Students of all learning strengths benefit from interdisciplinary connections.

While a student with a quantitative strength may gravitate to math and science courses, they can transfer their learning to other areas. Use these questions to facilitate the connection:

- **In what other classes have you seen this topic discussed? How are the discussions alike? Different?**
- **What themes emerged in the discussion that are present in other courses?**
- **What patterns can you recognize in this topic, and where do you see those in other areas of study?**

While a student with a verbal strength may gravitate toward writing, language, and explanation, they can transfer their learning to other areas. Use these questions to facilitate this connection:

- **How does this topic connect with what you have learned in other areas of study?**
- **What themes emerged here that you can identify in other subjects? Areas of life?**
- **Is there any terminology used here that you have seen used in other areas of study?**

©2024 Riverside Assessments, LLC. All rights reserved. Depth & Complexity Icons, © 2006 J Taylor Education. Big Idea (3 columns) Depth and Complexity Graphic Organizers © 2020 J Taylor Education. Right vs. Wrong Depth and Complexity Graphic Organizers © 2020 J Taylor Education.

Differentiation

While a student with a nonverbal strength may gravitate toward technical writing or visual representations, they can transfer their learning to other areas. Use these questions to facilitate this connection:

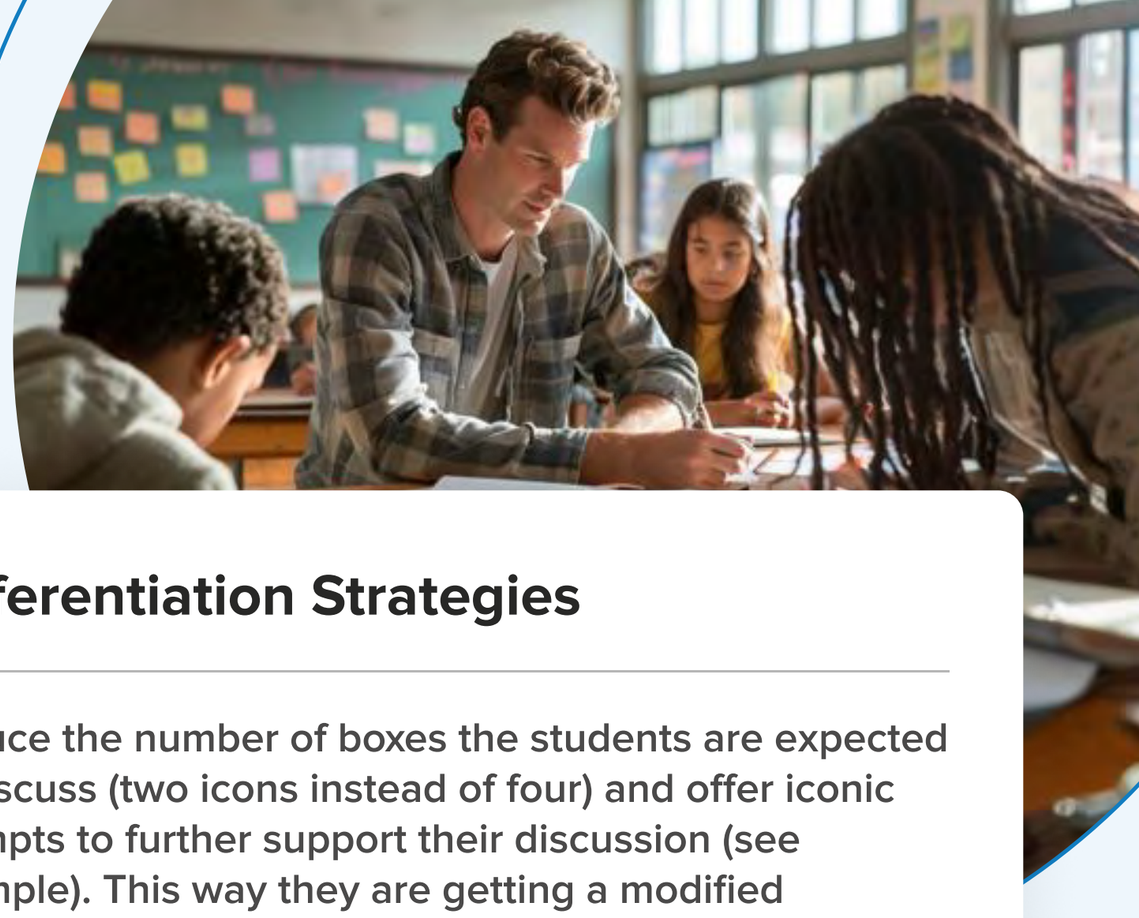
- **Where can you see this topic addressed in other areas of study? What connections do you find?**
- **How do the biases and gaps in knowledge about this topic connect to those of other areas of study?**
- **How can you apply this content/approach to problem-solving/theme to other subjects? Disciplines? Areas of life?**

GO: graphic organizer; NV: nonverbal; Q: qualitative; V: verbal.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2020 J Taylor Education.



Special Applications: Differentiation



Subpopulation	Application	Differentiation Strategies
Special Education/504	**Depth & Complexity Conversational Roundtables**	Reduce the number of boxes the students are expected to discuss (two icons instead of four) and offer iconic prompts to further support their discussion (see example). This way they are getting a modified experience but still being challenged cognitively.
	Inquiry Learning	Reduce the number of tasks they are expected to complete as part of the discovery process. Also, build in tiered support so students don't feel overwhelmed by the self-direction of the inquiry learning task. Teachers can also work more directly with students needing extra support. This way they are getting a modified experience but still being challenged cognitively.
	Think Like a Disciplinarian	Reduce the number of tasks they are expected to complete as part of the TLAD collaborative process. Also, build tiered support into the lesson so students don't feel overwhelmed by the self-direction of the learning task. Teachers can also work more directly with students needing extra support. This way they are getting a modified experience but still being challenged cognitively.
	3-2-1 Exit Ticket	Reduce the number of boxes the students are expected to discuss (two icons instead of three, or one response per icon) and offer iconic prompts to further support their discussion. This way they are getting a modified experience but still being challenged cognitively.
	CAP Activity	These students may benefit from a terms list if they are being asked to use new vocabulary. You could allow them to offer visual representations of ideas to allow the brain work to happen but to keep it focused on the content and not the skills of reading or writing. Allow the student(s) to have the text read to them.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2012 and 2020 J Taylor Education.

Subpopulation	Application	Differentiation Strategies
Special Education/504	**Depth & Complexity Graphic Organizer: Details Deep Dive**	Reduce the number of boxes/icons/segments the students are expected to discuss (two icons instead of four) and offer iconic prompts to further support their discussion. This way they are getting a modified experience but still being challenged cognitively.
Multilingual Learners	**Depth & Complexity Conversational Roundtables**	Icons for Depth and Complexity are excellent for this group of students because they use dual-coding theory. Through rehearsal, these images can show students who are ML what kind of thinking you are looking for in the activity. Consider notes in pictures that are later turned into words, vocabulary lists that will support during the activity, and the opportunity to work together or in partners to ease the stress of the discussion.
	Inquiry Learning	Students learning English will be best served in inquiry learning by visual representations in research and in demonstration of understanding as they dig into a topic. They will also benefit from a support document with terminology defined in simple language to enhance understanding while preserving the neurological challenge of the inquiry.
	Think Like a Disciplinarian	Students learning English will be best served in TLAD by visual representations in research and in demonstration of understanding as they work to take on the role of a disciplinarian. They will also benefit from a support document with terminology defined in simple language to enhance understanding while preserving the neurological challenge of the collaboration.
	3-2-1 Exit Ticket	Icons for Depth and Complexity are excellent for this group of students because they use dual-coding theory. Through rehearsal, these images can show students who are ML what kind of thinking you are looking for in the activity. Consider notes in pictures that are later turned into words, vocabulary lists that will support during the activity, and the opportunity to work together or in partners to ease the stress of the discussion while facilitating development of speaking and listening skills.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2012 and 2020 J Taylor Education.

Subpopulation	Application	Differentiation Strategies
Multilingual Learners	**CAP Activity**	Icons for Depth and Complexity are excellent for this group of students because they use dual-coding theory. Through rehearsal, these images can show students who are ML what kind of thinking you are looking for in the activity. Consider notes in pictures that are later turned into words, vocabulary lists that will support during the activity, and the opportunity to work together or in partners to ease the stress of the discussion. They can also subgroup in their CAP task to do Think-Pair-Share and then work together as a full group, while facilitating development of speaking and listening skills.
	Depth & Complexity Graphic Organizer: Details Deep Dive	Icons for Depth and Complexity are excellent for this group of students because they use dual-coding theory. Through rehearsal, these images can show students who are mL what kind of thinking you are looking for in the activity. Consider notes in pictures that are later turned into words, vocabulary lists that will support during the activity, and the opportunity to work together or in partners to ease the stress of the discussion while facilitating development of speaking and listening skills.
Twice-Exceptional (2e)	**Depth & Complexity Conversational Roundtables**	Consider not having this group write in the boxes, but draw the points made. Allow them the option to work in smaller groups together or to brainstorm on their own first and then come together. Also consider letting them use speech-to-text software to complete the discussion. These students often have fantastic insights but are hesitant to share or speak out.
	Inquiry Learning	Consider allowing this group autonomy both in the direction of the inquiry and in the presentation of those findings. Perhaps they take notes in comic strip form or utilize interdisciplinary connections like music or visual art. Additionally, terminology may overwhelm these students, so having a support document is helpful. Of course, utilizing speech-to-text and text-to-speech software is also helpful in eliminating unintended barriers to learning.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2012 and 2020 J Taylor Education.

Subpopulation	Application	Differentiation Strategies
Twice-Exceptional (2e)	**Think Like a Disciplinarian**	Consider allowing this group to share their findings with their group in a variety of self-chosen methods. Perhaps they take notes in comic strip form or utilize interdisciplinary connections like music or visual art. Additionally, terminology may overwhelm these students, so having a support document is helpful. Of course, utilizing speech-to-text and text-to-speech software is also helpful in eliminating unintended barriers to learning. Offering guidance through a TLAD support note document is also helpful.
	3-2-1 Exit Ticket	Consider not having this subpopulation write in the boxes, but draw the points made. Allow them the option to work in smaller groups together or to brainstorm on their own first and then come together. Also consider letting them use speech-to-text software to complete the discussion. These students often have fantastic insights but may be hesitant to share or speak out.
	CAP Activity	Consider allowing visual representations of ideas instead of or alongside words. Offer smaller group discussion prior to larger group if possible. Utilize speech-to-text software or offer alternatives to reading texts should you use any readings or literature in your CAP activity. Allow students to complete tasks at home if they desire.
	Depth & Complexity Graphic Organizer: Details Deep Dive	Consider not having this group write in the boxes, but draw the points made. Allow them the option to work in smaller groups together or to brainstorm on their own first and then come together. Also consider letting them use speech-to-text software to complete the discussion. These students often have fantastic insights but are hesitant to share or speak out.
Gifted Learners/HiCap	**Depth & Complexity Conversational Roundtables**	You can further challenge GT students by combining icons. In this instance, ask them to consider the Trend of the Patterns they find, the Details that make each Rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2012 and 2020 J Taylor Education.

Subpopulation	Application	Differentiation Strategies
Gifted Learners/HiCap	**Inquiry Learning**	You can further challenge GT students by offering less guidance than what the rest of the class may be getting. GT students are highly engaged when offered inquiry opportunities, but they will need to have some control over the direction of their inquiry. These students may need more clarity about the end goal, permission to use more sophisticated sources when researching, and more complex ideas to pursue.
	Think Like a Disciplinarian	You can further challenge GT students by offering less guidance than what the rest of the class may be getting. GT students are highly engaged when offered inquiry opportunities, but they will need to have some control over the direction of their collaborative work. These students may need more clarity about the end goal, permission to use more sophisticated sources when researching, and more complex ideas to pursue.
	3-2-1 Exit Ticket	You can further challenge GT students by combining icons. In this instance, ask them to consider the Trend of the Patterns they find, or the Details that make each Rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. (This should be done for each of the three thinking strengths [V+, Q+, NV+] so all students get the appropriate challenge.)
	CAP Activity	You can further challenge GT students by combining icons. In this instance, ask them to consider the Trend of the Patterns they find, or the Details that make each Rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing. (This should be done for each of the three thinking strengths [V+, Q+, NV+] so all students get the appropriate challenge.)
	Depth & Complexity Graphic Organizer: Details Deep Dive	You can further challenge GT students by combining icons. In this instance, ask them to consider the Trend of the Patterns they find, or the Details that make each Rule necessary, and so on. By using ionic intersections, the neurological activity is more challenging but still in line with what other students are doing.

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2012 and 2020 J Taylor Education.

CAP: creative, analytical, practical; GT: gifted/talented; ML: multilingual learner; NV: nonverbal; Q: qualitative; TLAD: think like a disciplinarian; V: verbal.

“All of the critical thinking strategies in the world are meaningless if educators don't believe that ALL students are capable of excellence.” — Colin Seale

References

Laskowski, T. (2023). Colin Seale on closing the critical thinking gap. ASCD, 80(7). https://www.ascd.org/el/articles/colin-seale-on-closing-the-critical-thinking-gap

Seale, C. (2021). ThinkLaw. https://thinklaw.us/

©2024 Riverside Assessments, LLC. All rights reserved.
Depth & Complexity Icons, © 2006 J Taylor Education. Depth and Complexity Graphic Organizers © 2012 and 2020 J Taylor Education.

