

ThinkUp!™

Adventures in Logic with ThinkUp!



January 29 is National Puzzle Day— a day set aside where we tip our hats to one of the many ways we can exercise our brains. Studies have shown spending time regularly solving puzzles improves memory, cognitive function, and problem-solving skills. So let’s pump some mental iron with a few puzzles and a little help from the **Inquire** critical thinking trait!

Note: Preview literature and Internet websites for appropriate content to match your district guidelines.

Getting Started

Critical Thinking Trait Focus: Review the **Inquire** critical thinking trait with students and explain they will be using it to help solve logic puzzles and create one as a class.



Inquire: I seek information that excites my curiosity and inspires my learning.

Learning Standards Focus: analyze relationships to connect and communicate ideas; use a problem-solving model and evaluate the reasonableness of the solution; use data analysis to solve problems by collecting, organizing, displaying, and interpreting data.

Vocabulary: logic, variable, deduction, solution, solve, process

Materials: logic puzzles in print or online (see links below), simple logic puzzle template to project or create a poster

Instruction

Activity Directions

1. Introduce students to logic puzzles using a short title or excerpt to read aloud (see literature connection titles below).
2. Prompt students with thought-provoking questions to facilitate the development of the **Inquire** critical thinking trait. Examples include:
 - “Distinguish between ___ and ___.”
 - “What steps would you take to solve ___?”
 - “How would you prioritize ___”
3. Allow students to work individually, in pairs, or in small groups to use deductive reasoning to solve logic puzzles.
4. Facilitate a discussion with students to review their processes and strategies used to solve logic puzzles.



5. Lead a guided writing exercise where students choose variables in the classroom and formulate a set of clues to create a logic puzzle. For example:

Story: Oh no! Mr. Lujan's class is a mess at the end of the day. Help him sort out his students' belongings by matching each student to his/her style of backpack and the grade each received on a math assignment.

- **Clue 1.** Mr. Lujan's four students are Jamal, the student with the unicorn backpack, the student who earned an 86 on his math assignment, and the one who earned a 72.
- **Clue 2.** The student with the unicorn backpack made 20 points higher on the math assignment than Abel.
- **Clue 3.** Darlene has a yellow backpack.
- **Clue 4.** The assignment that had 86 points belongs in the Spider-Man backpack.

		student				backpack			
		Jamal	Linsey	Abel	Darlene	Spiderman	unicorn	raccoon	yellow
Math grade	72	X	X	X	●	X	X	X	●
	86	X	X	●	X	●	X	X	X
	92	●	X	X	X	X	X	●	X
	99	X	●	X	X	X	●	X	X
backpack	Spiderman	X	X	●	X				
	unicorn	X	●	X	X				
	raccoon	●	X	X	X				
	yellow	X	X	X	●				



Reflect

After students have used the **Inquire** trait to solve and create logic puzzles, facilitate a discussion about their thinking and learning. Guide students as they focus on how the Inquire critical thinking trait helped them complete the task. Emphasize the importance of using the **Inquire** trait to better understand how deductive reasoning and problem-solving can benefit their math skills.

Literature Suggestions

Books about Logic and Deductive Reasoning: *Deductive Detective* by Brian Rock, *Pigeon P.I.* by Meg McLaren, *Your Fantastic Elastic Brain* by JoAnn Deak, Ph.D.

Online Logic Puzzles

[Puzzle Baron](#), [Brainzilla](#), [aha! Puzzles](#), [logiclike](#)

Additional Web Resources

[Benefits of Using Logic Puzzles from Practical Primary Teacher](#)

[More about Logic Puzzles from Keep 'Em Thinking](#)



Think It Out! Simple Logic Puzzle Template