
MATH: THINKING LOGICALLY

We will wrap up this month’s Teacher’s Corner on STEM in the classroom with math! While students may think of math as just numbers, thinking mathematically means using logic and reason to solve problems. This week students will play with logic puzzles. These puzzles require critical thinking and logic to solve and are a great way to get students thinking mathematically.

LEVEL

Intermediate to Advanced

LANGUAGE FOCUS

Reading, speaking (primary focus); writing (secondary focus)

GOALS

During this activity students will do the following:

- Practice reading skills through logic puzzle clues
- Practice speaking skills through pair/small group problem solving
- Develop critical thinking and logic skills

MATERIALS

- Teacher: whiteboard/chalkboard, markers/chalk, a timing device, printer
- Students: pencils or pens, notebooks or writing paper

PREPARATION

1. Read all of the materials carefully before starting the activity.
2. Read over the logic puzzle in Appendix 1 and the logic puzzle answers in Appendix 2. The answer key has the filled-out logic chart that can be shown to students. It also has the “Answers at a Glance” at the bottom of the page to refer to during the activity.

3. Print out enough copies of the logic puzzle in Appendix 1 for each student. Copies of the answer key in Appendix 2 can also be printed for each student, or the answers can be listed on the chalkboard/whiteboard.
4. Logic puzzles can be challenging for students. If students are struggling to fill in the chart, encourage them to think carefully. In logic puzzles, there are no trick questions or hidden answers; all the information needed to fill in the chart is provided in the clues. Students may need to compare clues or use information in one clue to solve another clue.

ACTIVITY: LOGIC PUZZLE

1. Begin the activity by having students form pairs or small groups of 2-3 students each.
2. Give each pair or small group of students a copy of the logic puzzle in Appendix 1, and read through the directions together.
 - a. **Note:** Depending on the level of your students, review the logic puzzle vocabulary with the class. Each of the items listed is a common type of American dessert.
3. Have the groups work through the logic puzzle.
4. Encourage the groups to take out a separate sheet of paper to write down notes as they work through the puzzle.
5. After all the groups have completed the logic puzzle, compare answers as a class.

Optional Extension Activities:

If students enjoyed working on the logic puzzles, encourage them to create their own. The logic puzzle in this activity can be used as a template, and students can create new names and items, then rearrange them and finally write new clues.



For more advanced classes, remove the clues from the bottom of the logic puzzle in Appendix 1. Then once the students are in pairs or small groups, give one student the clues and the other student, or students, the logic puzzle. The student with the clues should read them aloud to their partner(s), who will then fill in the puzzle. The student(s) filling in the puzzle may not write down the clues but must use only their listening skills!

Appendix 1: Baking Contest Logic Puzzle

Directions: Use the clues below to fill in the boxes of the puzzle. Use an **X** for incorrect information and an **O** for correct information. As an example, the first clue has been completed for you.

		Bakers					Dessert				
		Adrienne	Jacque	John	Curtis	Kate	Fruit Salad	Pudding	Cake	Brownies	Apple Pie
Placement	First				X						
	Second										
	Third										
	Fourth										
	Fifth										
Desserts	Fruit Salad										
	Pudding										
	Cake										
	Brownies										
	Apple Pie										

Clues:

- Curtis didn't finish first.
- Jacque made the cake.
- The person who entered his pudding, the person who finished first, the person who entered brownies, and the person who finished fifth are all different people.
- Kate finished fifth.
- Jacque finished one place before the baker who entered his pudding.
- John is either the baker who finished third or the baker who finished first.
- John finished after the person who entered her apple pie.

Appendix 2: Logic Puzzle Answer Key

Directions: Use the clues below to fill in the boxes of the puzzle. Use an **X** for incorrect information and an **O** for correct information. As an example, the first clue has been completed for you.

		Bakers					Dessert				
		Adrienne	Jacque	John	Curtis	Kate	Fruit Salad	Pudding	Cake	Brownies	Apple Pie
Placement	First	O	X	X	X	X	X	X	X	X	O
	Second	X	O	X	X	X	X	X	O	X	X
	Third	X	X	O	X	X	X	O	X	X	X
	Fourth	X	X	X	O	X	X	X	X	O	X
	Fifth	X	X	X	X	O	O	X	X	X	X
Desserts	Fruit Salad	X	X	X	X	O					
	Pudding	X	X	O	X	X					
	Cake	X	O	X	X	X					
	Brownies	X	X	X	O	X					
	Apple Pie	O	X	X	X	X					

Answers at a Glance:

Placements	Baker	Dessert
First	Adrienne	Apple Pie
Second	Jacque	Cake
Third	John	Pudding
Fourth	Curtis	Brownies
Fifth	Kate	Fruit Salad