MONTH 2

Logic & Strategic Thinking

Monthly Learning Goals

Month 2 helps students strengthen their logical reasoning by using clues, organizing information, testing possibilities, and determining what must be true. Students will learn to approach unfamiliar challenges carefully and strategically.

Through logic grids and matchstick puzzles, students will practice both deductive reasoning and visual problem solving. The emphasis is on explaining how each clue or move contributes to a complete solution.

By the End of This Month, Students Should Be Able To:

- Use clues to eliminate impossible choices.
- Organize information in a logic grid or another useful representation.
- Determine what must be true and explain why.
- Test possibilities systematically instead of guessing randomly.
- Solve visual puzzles by moving or rearranging parts strategically.
- Compare different solutions and identify efficient approaches.
- Persist when a problem requires several attempts or revisions.

Skills We Will Practice

Deductive Reasoning
Using clues to determine what can, cannot, or must be true.

Systematic Organization
Recording information clearly so possibilities can be compared.

Visual Problem Solving
Rearranging shapes and matchsticks while tracking each condition.

Strategic Experimentation
Testing an idea, checking the result, and revising when needed.

Mathematical Communication
Explaining the sequence of reasoning that leads to a solution.

This Month's Activities

- Logic-grid puzzles
- Clue and elimination challenges
- Matchstick puzzles
- Visual rearrangement problems
- Multiple-solution challenges
- Solution analysis and discussion

Connection to the Rest of the Year

Month 2 builds on the pattern recognition introduced in Month 1. The ability to organize possibilities, follow constraints, and justify conclusions will support later work in counting, probability, competition mathematics, and open-ended investigations.

SUPERSTAR WORKSHEETS

Drinks & Snacks
Logic Puzzle

Name:

Date:



		drinks				snacks			
		milk	juice	water	soda	apple	cookie	crackers	nuts
Name	Max								
	Zoe								
	Ian								
	Joe								
snacks	apple								
	cookie								
	crackers								
	nuts								





INSTRUCTIONS:

Four friends each have a favorite drink and a favorite snack!

Use the clues to figure out which drink and snack belongs to each person.

Put an X in each box that can't be right.

The box without an X shows the answer!

CLUES:

1. Joe munches on salty nuts every day.
2. Zoe brings crackers and fills her bottle with water.
3. Max dunks his cookie in cold milk.
4. Ian never wants soda.
5. Ian bites into his apple.



Images ©© Rainbow Sprinkles Studio, Kari Bolt, Littlefield, Bunny on a Cloud, Greetings the Classroom Clipart

Logic Puzzle

There are four children, Amanda, Bill, Cathy, and Dorothy that are in first, second, third, or fourth grade. Each child has a different favorite color: blue, red, pink or green. Use the clues below to figure out what grade each child is in and what their favorite color is.

	1st	2nd	3rd	4th	Blue	Red	Pink	Green
Amanda								
Bill								
Cathy								
Dorothy								

Blue				
Red				
Pink				
Green				

CLUES:

1. The 4th grader is a boy who does not like pink.
2. Dorothy is the youngest and likes blue.
3. Cathy is one grade ahead of Amanda.
4. The 2nd grader likes red.



© WooJr.com. All Rights Reserved.

SUPERSTAR WORKSHEETS

Drinks & Snacks
Logic Puzzle

Name:

Date:



Name	drinks				snacks			
	milk	juice	water	soda	apple	cookie	crackers	nuts
Max		X	X	X	X		X	X
Zoe	X	X		X	X	X		X
Ian	X		X	X		X	X	X
Joe	X	X	X		X	X	X	





snacks					
apple	X		X	X	
cookie		X	X	X	
crackers	X	X		X	
nuts	X	X	X		

INSTRUCTIONS:

Four friends each have a favorite drink and a favorite snack!

Use the clues to figure out which drink and snack belongs to each person.

Put an X in each box that can't be right.

The box without an X shows the answer!

CLUES:

1. Joe munches on salty nuts every day.
2. Zoe brings crackers and fills her bottle with water.
3. Max dunks his cookie in cold milk.
4. Ian never wants soda.
5. Ian bites into his apple.



Logic Puzzle

There are four children, Amanda, Bill, Cathy, and Dorothy that are in first, second, third, or fourth grade. Each child has a different favorite color: blue, red, pink or green. Use the clues below to figure out what grade each child is in and what their favorite color is.

	1st	2nd	3rd	4th	Blue	Red	Pink	Green
Amanda	X		X	X	X		X	X
Bill	X	X	X		X	X	X	
Cathy	X	X		X	X	X		X
Dorothy		X	X	X		X	X	X

Blue		X	X	X
Red	X		X	X
Pink	X	X		X
Green	X	X	X	

CLUES:

1. The 4th grader is a boy who does not like pink.
2. Dorothy is the youngest and likes blue.
3. Cathy is one grade ahead of Amanda.
4. The 2nd grader likes red.

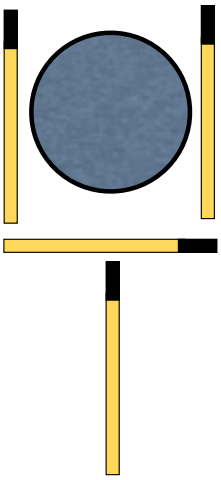


© WooJr.com. All Rights Reserved.

Match Stick Puzzles

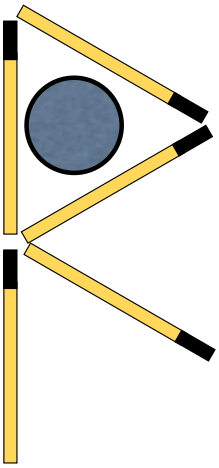
Free the Circle 1

The object of the puzzle is to move 2 matchsticks to get the circle outside the glass. At the finish, the glass must be exactly the same shape as before.



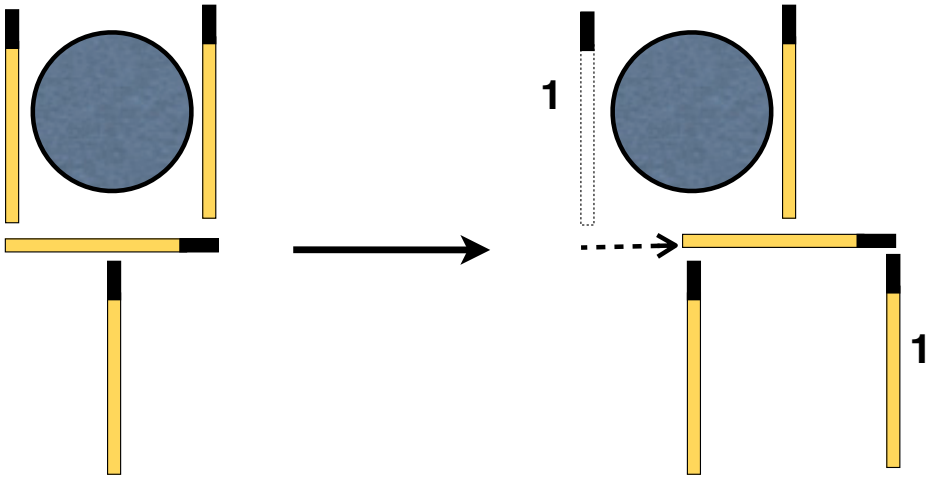
Free the Circle 2

The object of the puzzle is to move 2 matchsticks to get the circle outside the glass. At the finish, the object must be exactly the same shape as before.



© 2017 Joseph Eitel

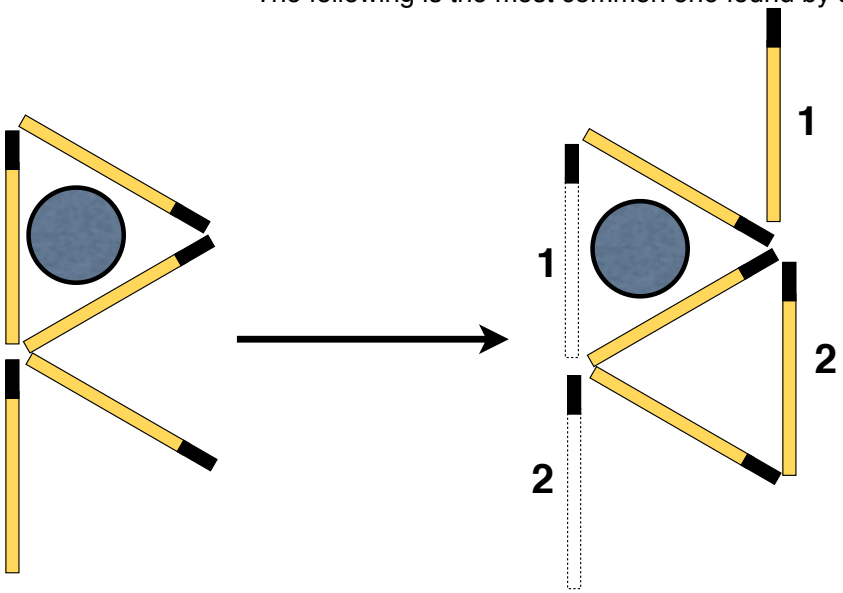
Solution Free the Circle 1



Solution Free the Circle 2

There are several solutions.

The following is the most common one found by students.

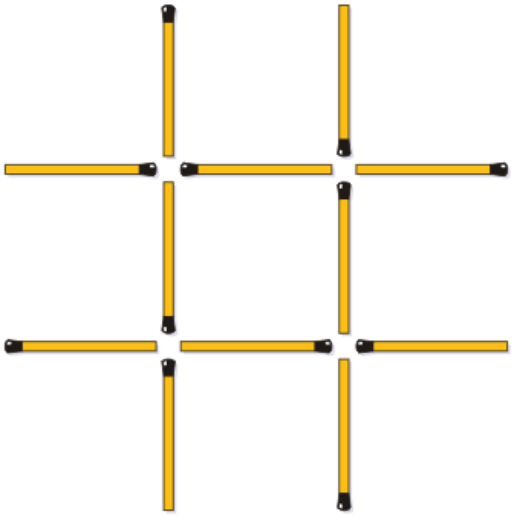


© 2017 Joseph Eitel

Matchstick Puzzle 3

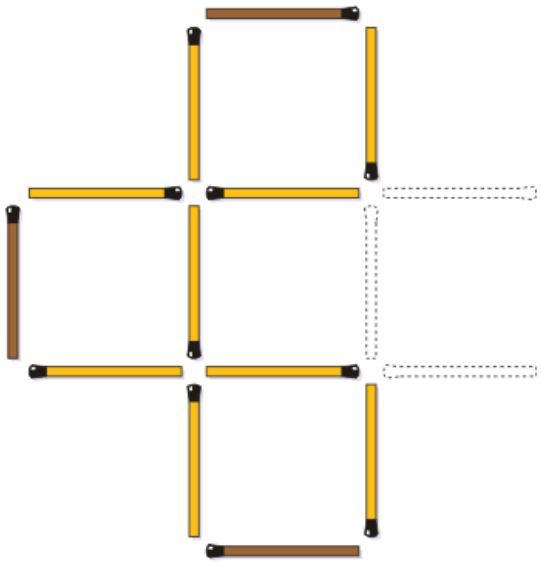
Take twelve matchsticks and arrange them into the grid shown above.

Now move only three matchsticks to get exactly three perfect squares.



© 2017 Joseph Eitel

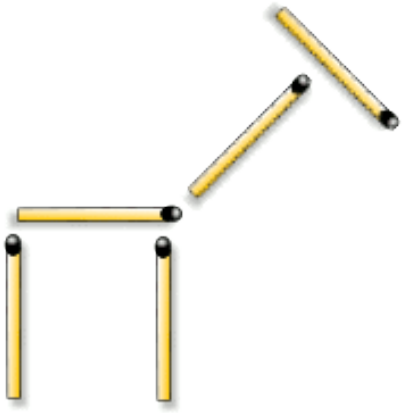
Matchstick Puzzle 3 Solution



© 2017 Joseph Eitel

Matchstick Puzzle 4

Move only one matchstick so that the horse faces a different direction.



© 2017 Joseph Eitel

Matchstick Puzzle 4 Solution

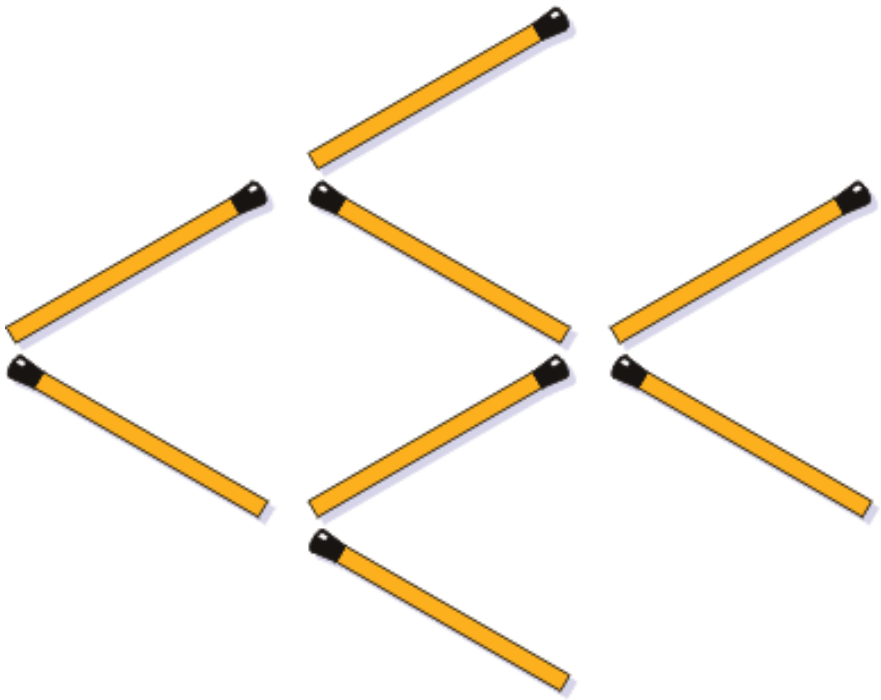


© 2017 Joseph Eitel

Matchstick Puzzle 5

1. Arrange 8 matchsticks to form the fish swimming left as shown in the illustration.

The object of the puzzle is to move 3 matchsticks to make the fish swim **in the opposite direction, i.e. to the right.**

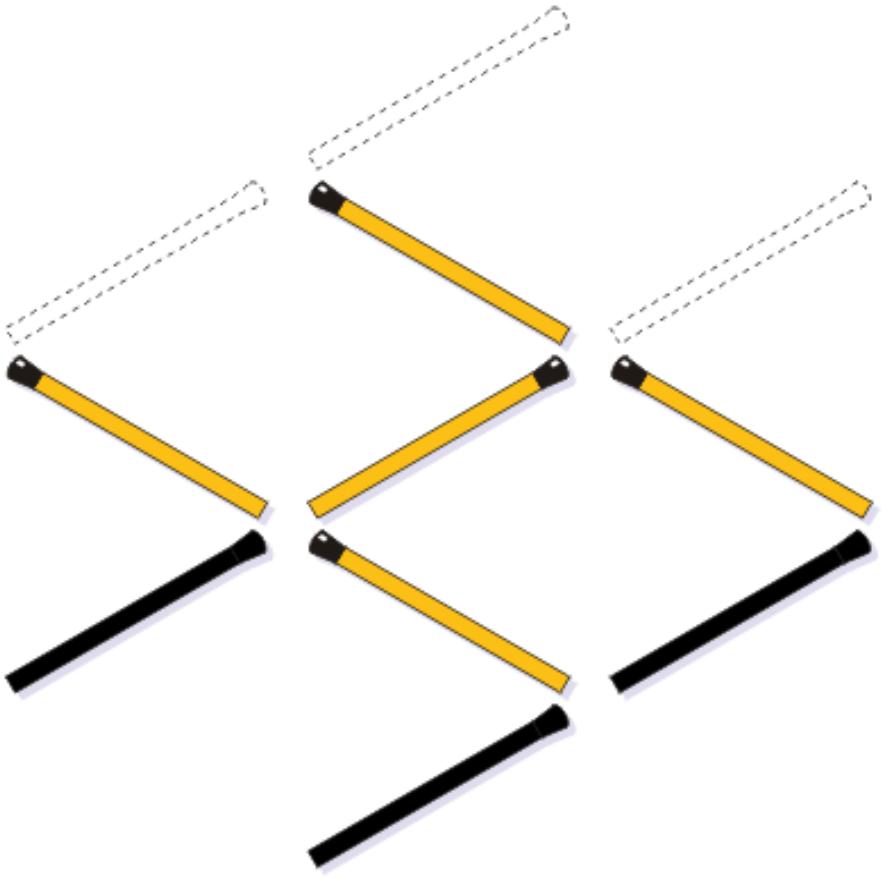


© 2017 Joseph Eitel

Matchstick Puzzle 5 Solution

1. Arrange 8 matchsticks to form the fish swimming left as shown in the illustration.

The object of the puzzle is to move 3 matchsticks to make the fish swim in the opposite direction, i.e. to the right.

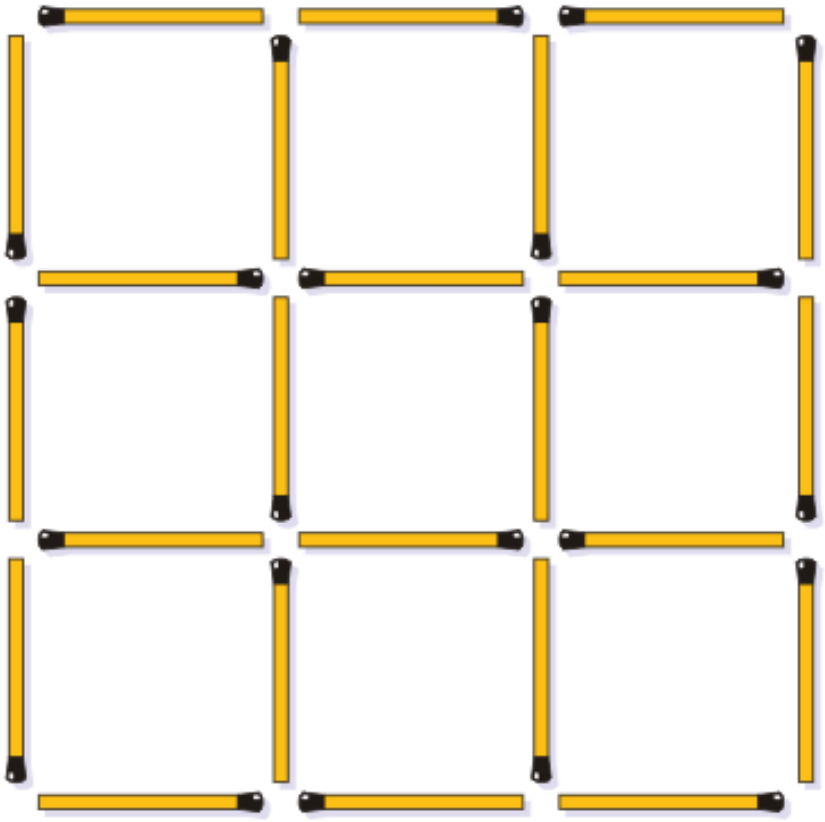


© 2017 Joseph Eitel

Matchstick Puzzle 6

24 matchsticks are used to form the figure in the illustration.

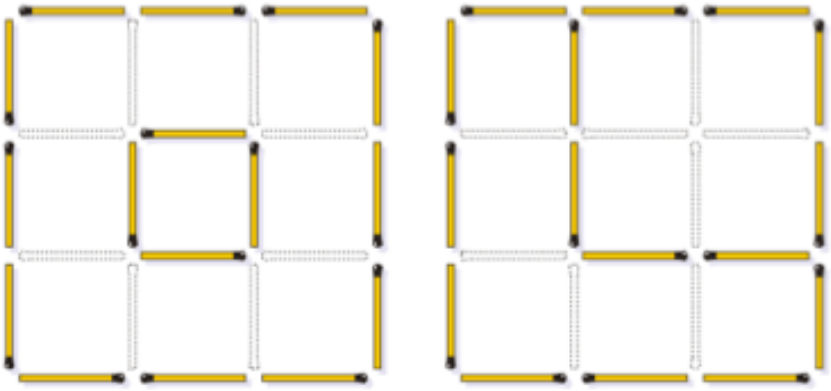
Remove 8 matchsticks and end up with just two squares.



© 2017 Joseph Eitel

Matchstick Puzzle 6 Solutions

There are 2 different solutions.



© 2017 Joseph Eitel