



STEM Skill Booster: Logic Puzzles

Supplies

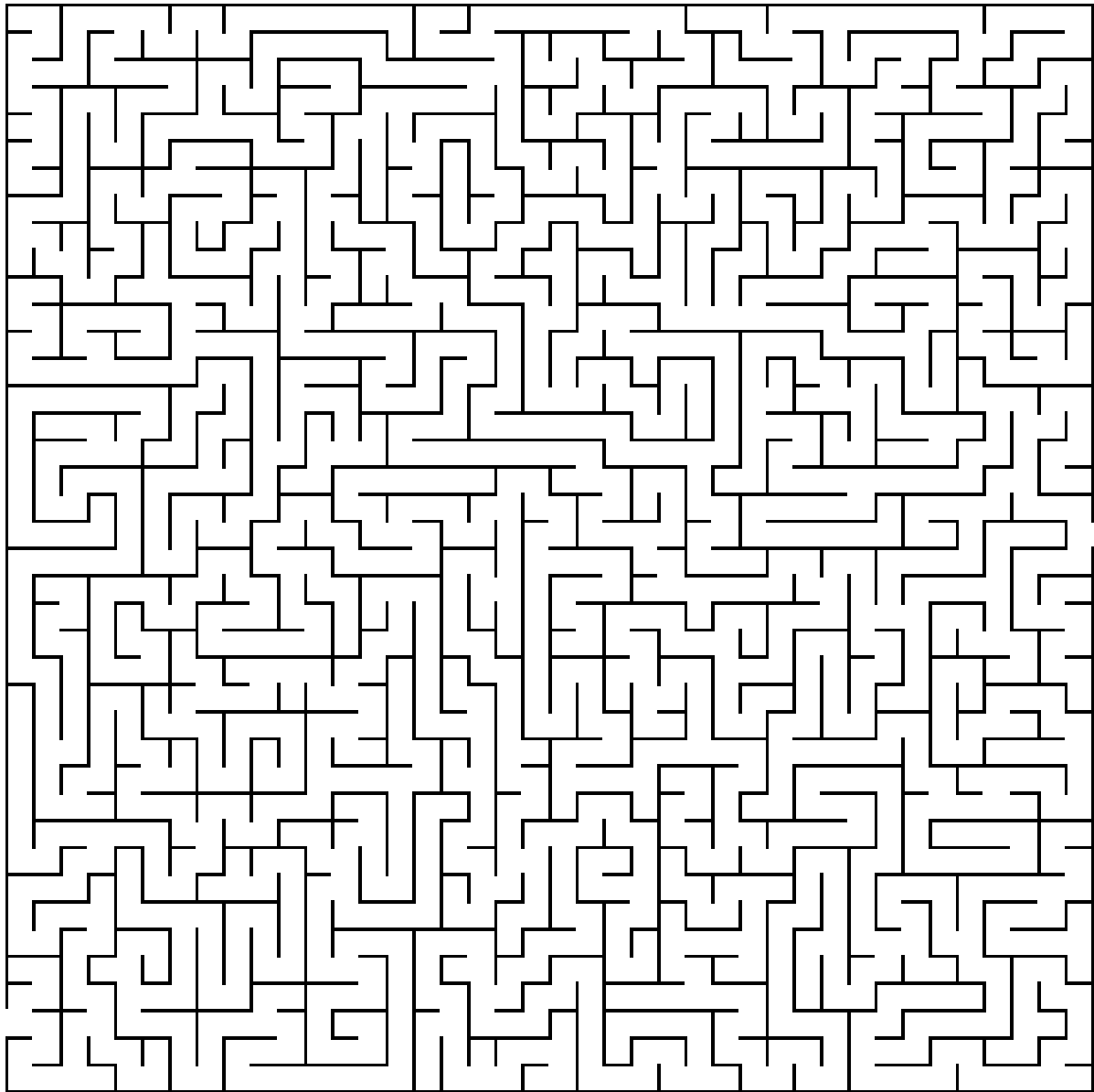
- Puzzle Packet
- Pencil/Pen (not included)
- Scissors (not included)

Instructions

Can you solve the sphinx's logic puzzles? Design an unsolvable maze? Answer brain-twisting riddles? Follow along to build your logic and puzzle solving skills to beat the sphinx. Flip the page to pass through mazes, solve riddles and even create your own puzzles along the way.

STEM Concepts

- **Problem Solving** – process of finding solutions to difficult tasks, puzzles or concepts
- **Maze** – a setup of paths designed as a puzzle through which one has to find a way out or to the finish
- **Tangram** – a dissection puzzle of flat shapes which are put together to form shapes
- **Riddle** – challenge to think outside the box and beyond the obvious answer to explain a situation or solution
- **Deductive Reasoning** – using what you know is true or what you know is not true to figure out other facts or answers.



Design Your Own Maze

Use the space below to create your own maze. Make sure to create one clear path for someone to follow, with a start and finish. Then add in other paths that mislead or come to a dead end. Next, have your family try it out. Are they able to solve it?

Theseus and the Minotaur Labyrinth

Help Theseus find the Minotaur in the labyrinth!



A Labyrinth is like a maze with only one entrance or exit. It is meant to have a clear, solvable path.

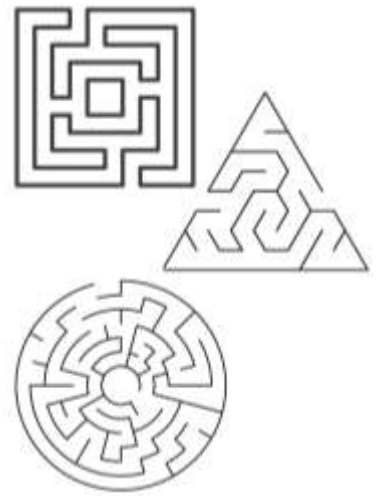
Build It: Labyrinth

Do you know the difference between a maze and a labyrinth?

A maze is a complex branching puzzle through which the solver must find a route. This is different from a labyrinth, which has a clear path and is not meant to be difficult to navigate. Labyrinths have only one exit and entry; mazes might have several.

Make your own labyrinth by gluing cut up straws to a paper plate. You could also use string or yarn instead of straws. You can design it like a maze, but remember that a labyrinth only has one exit. When your pieces are dry, try going through your labyrinth with a marble or small ball.

Or make your own life-size labyrinth outside. Grab sidewalk chalk and draw out your labyrinth that you and your family can actually walk through!



Riddles

A riddle is a challenge to think outside the box and beyond the obvious answer to explain a situation or a solution. See if you can figure out the answer to these riddles. Answers can be found on the last page of the packet.

1. If there are 3 apples and you take away 2, how many do you have?
2. How far can a dog run into the woods?
3. This patch of land stands alone. What is it?
4. What falls but never breaks?
5. You are currently trying to solve one. What is it?
6. What smells the most in the kitchen?
7. What travels around the world but stays in one spot?
8. What goes inside boots and outside shoes?
9. What has four eyes but can't see?
10. Where can you find cities, towns, shops, and streets but no people?
11. What is full of holes but still holds water?
12. If a brother, his sister, and their dog weren't under an umbrella, why didn't they get wet?
13. A young boy lives on the 10th floor of a 10-story apartment building. Each morning he rides the elevator down from the 10th floor to the first floor and goes to school. When he comes home from school, he gets on the elevator, rides to the 5th floor and then walks the final five sets of stairs to the 10th floor. Why?
14. Bobby throws a ball as hard as he can. It comes back to him, even though nothing and nobody touches it. How?

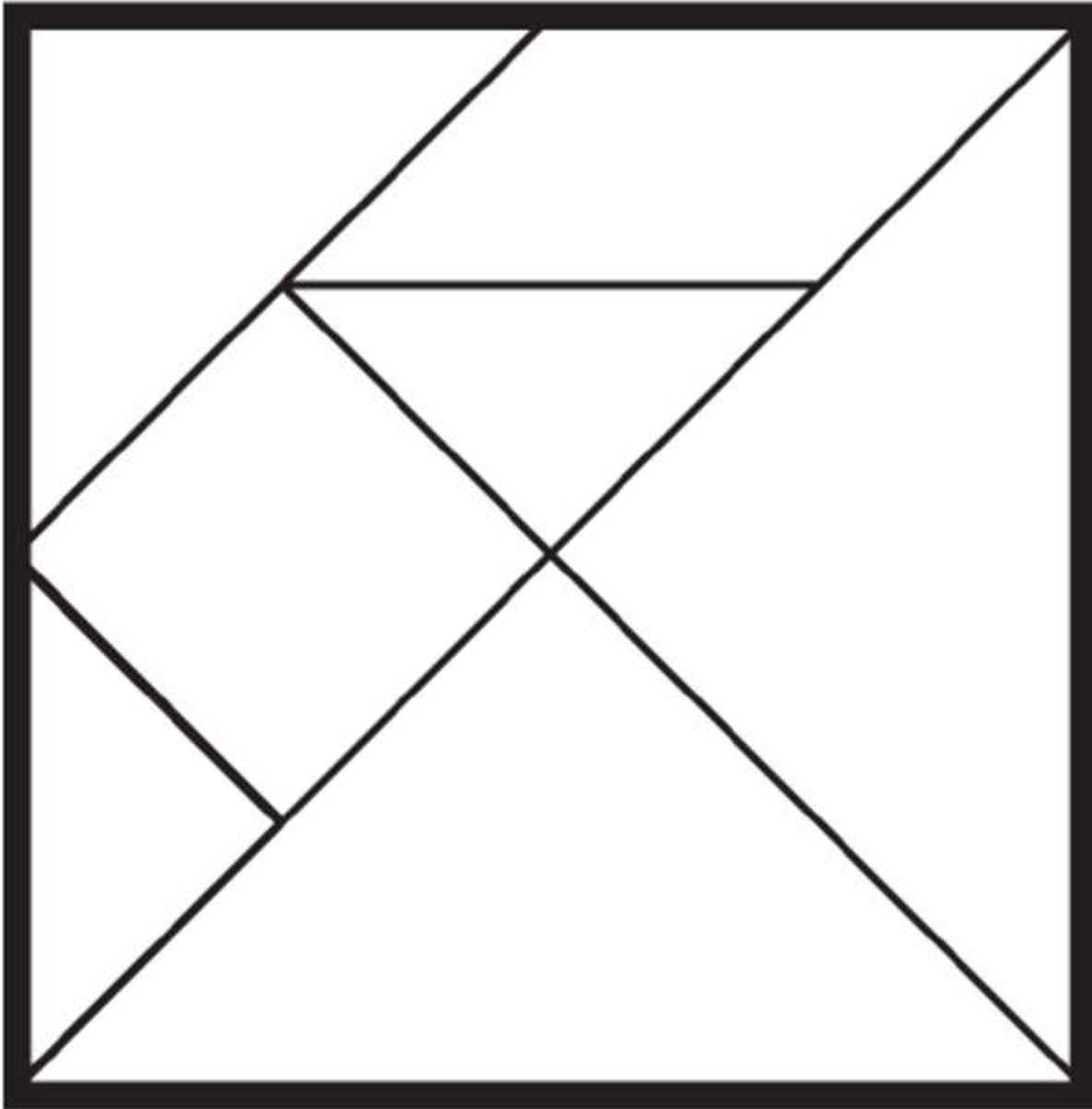
Now try to write your own!

Riddle: _____

Answer: _____

Tangram

A tangram is a dissection puzzle of seven flat shapes which are put together to form shapes. Cut out each of the seven shapes below. Then rearrange them to see what shapes, patterns or designs you can make. For an added challenge, name an animal and try to make it using these pieces. Or try to fit all the pieces back together to form a square.



Logic Grid Puzzle

Logic grid puzzles use a grid to keep track of your deductive reasoning as you read clues. Mark an “O” in the grid to show a match or an answer and mark an “X” to show that you know something does not go together.

Four Kids went to an unusual pet store. Each child picked out a different animal to take home. Can you match the child with their new friend?

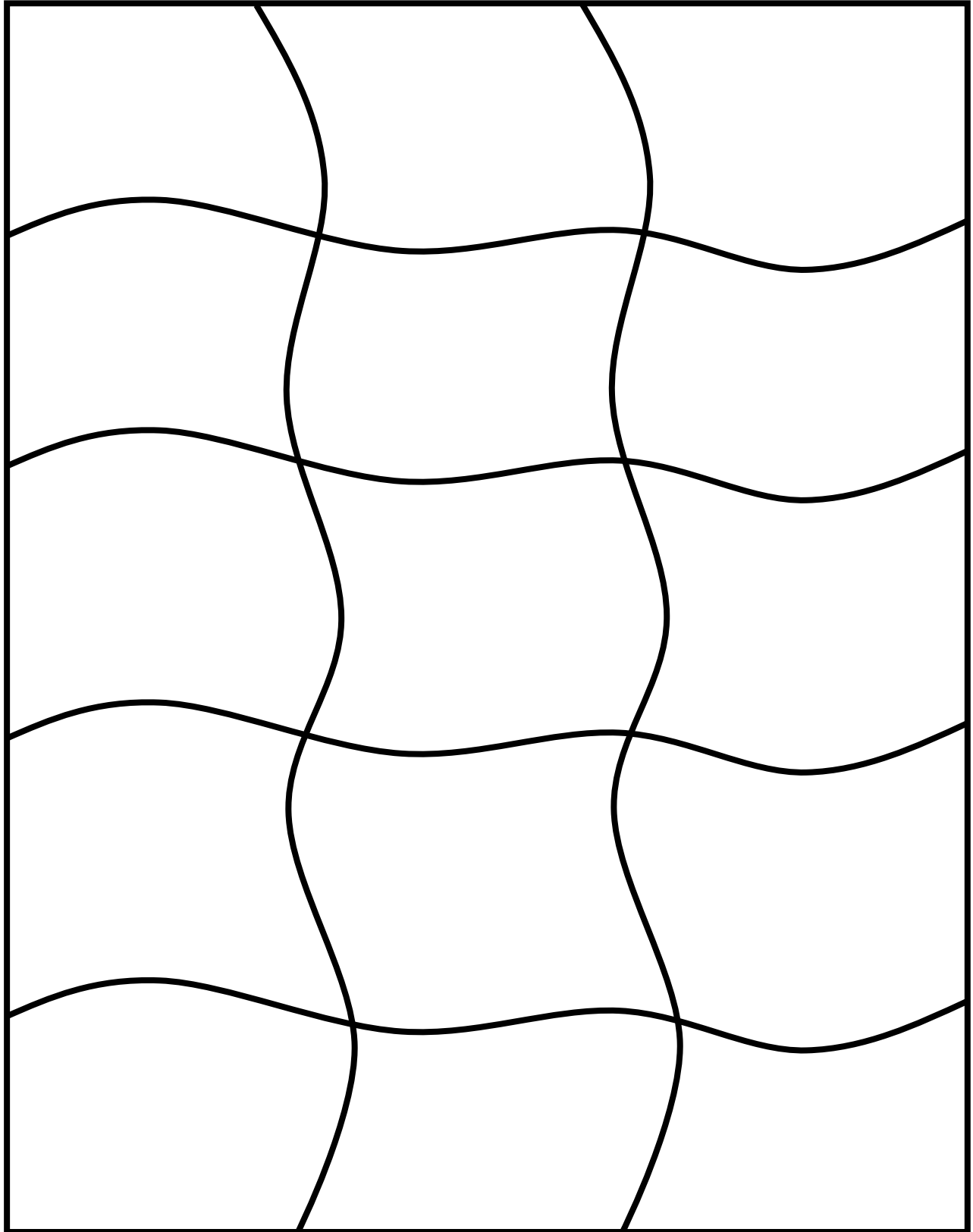
	Troll	Water Horse	Mermaid	Dragon
Dave				
Wendy				
Molly				
Tracy				

Clues:

1. No child has a pet that starts with the same letter as their name.
2. Dave does not have a pet that lives in the water.
3. Molly is allergic to smoke.
4. Wendy loves to fly.

Jigsaw Puzzle

Design your own jigsaw puzzle. Draw or color a picture in the box below. Then cut apart each section by following the lines. Once all pieces are cut out, put your puzzle back together.



Word Search

A word search is a puzzle that consists of words placed onto a grid, with additional letters, making it difficult for the solver to find. To solve, find each of the words listed on the right column within the puzzle. Note: words can be found vertically, horizontally or diagonally.



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Imagine Your Story - Word Search

F A H B D R L L O R T D J B E
T H G I N K N T G D R A G O N
E R X Q N J L Q M Z S T O R Y
T N A I G E E A P Q T C I A B
A F S R W H E Y C X N D E R S
U W A J O Y J U R I G S S U Y
N Y P I B Y Y B Q K G Q S C R
I S M E R M A I D S J A Z H I
C A P D I Y K L J R G Y M A A
O T K H D Z T Y T E I C I W F
R N I I I F I A P Y G N O M E
N A N H G N J Z L H X W J P T
A F G M P Y X D N E L T S A C
W V S C V F R E N I G A M I S
C A U R T G W I Z A R D B K A

DRAGON
UNICORN
TROLL
SPHINX
GNOME
FAIRY
PEGASUS
MERMAID
WIZARD
IMAGINE
STORY
FANTASY
GIANT
FAIRYTALE
KNIGHT
ROYALTY
QUEEN
KING
CASTLE
MAGICAL

Answer Key

Riddles

1. Answer: You have two, because YOU took away two.
2. Answer: To the middle of the woods or halfway, because after that, the dog would be running OUT. Into represents the distance from any edge to the middle, and after that point the dog is running out of the woods.
3. Answer: an island
4. Answer: night
5. Answer: riddle
6. Answer: a nose
7. Answer: a stamp
8. Answer: ankles
9. Answer: Mississippi
10. Answer: a map
11. Answer: a sponge
12. Answer: It wasn't raining
13. Answer: He is only tall enough to reach the button for the 5th floor. The higher-numbered buttons are out of his reach.
14. Answer: He throws it straight up.

Logic Grid Puzzle

	Troll	Water Horse	Mermaid	Dragon
Dave	O	X	X	X
Wendy	X	X	X	O
Molly	X	O	X	X
Tracy	X	X	O	X