More Than Meets The Eye

Mirrors and Mazes | Student Investigation

Introduction:
Mirrors are everywhere! In our homes, schools, cars, bathrooms - we can even see our own reflection in something as simple as water. Large telescopes, like the James Webb Telescope, use curved mirrors to collect light from stars and galaxies to create pictures of these objects. The bigger the mirror, the better picture we see! Webb's primary mirror is 6.5 meters across, the largest mirror ever launched into space!

Activity 1 | **Mirror, Mirror on the Wall**

Research mirrors:

1. What are mirrors made of?

2. How are they made?

3. Why do we use mirrors?

Activity 2 | **Name that Mirror**

With a partner, discuss the different mirrors that you have used or seen today. Examples might include bathroom mirror, rear-view mirror of a car, side-mirror or a car or a hand-held mirror.

Explore mirrors and reflection using:

1. Aluminium foil
2. Back-silvered on glass or plastic
3. Make-up/compact mirror

Activity 3 | **Did you know?**

Mirrors work by reflecting light from the shiny surface back to our eyes. We see a "mirror-image." What does this mean?

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Now that we've explored mirrors and their uses, let's try a reflection challenge.

Collect the following materials:

- Two Mirror Maze pages
- Maze 1 - "Maze without mirror"
- Maze 2 - "Maze with mirror"
- One pencil
- Timer or Stopwatch

Working with a partner, take turns completing this challenge.

1. Start with Maze 1.
2. Use a pencil to complete the maze as quickly as you can while your partner times you.
3. Record the time on your Maze 1 paper.
4. Next, complete Maze 2, but this time, have your partner hold a mirror at the top of the maze. Looking ONLY in the mirror, complete the maze using the reflection of the maze in a mirror. (NOTE: Be sure you are only looking in the mirror to complete Maze 2. Have your partner cover your drawing hand with their hand or a piece of paper so you can't see the maze!)
5. Record the time on your Maze 2 paper.
6. Switch with your partner.

Discussion/Extension:

1. Compare the time it took to complete each maze. Which maze was faster to complete? Why do you think this is?

2. What did you find difficult about completing Maze 2 (the maze with the mirror?). What happened when you tried to draw a line left, right, up, or down?

Do you think you can improve your time on Maze 2? How could you achieve this? (Try Maze 2 several times to see if your time improves.)

Activity | **Mirror Mazes**

Maze 1 Maze Without A Mirror

Name:

Time to complete maze:

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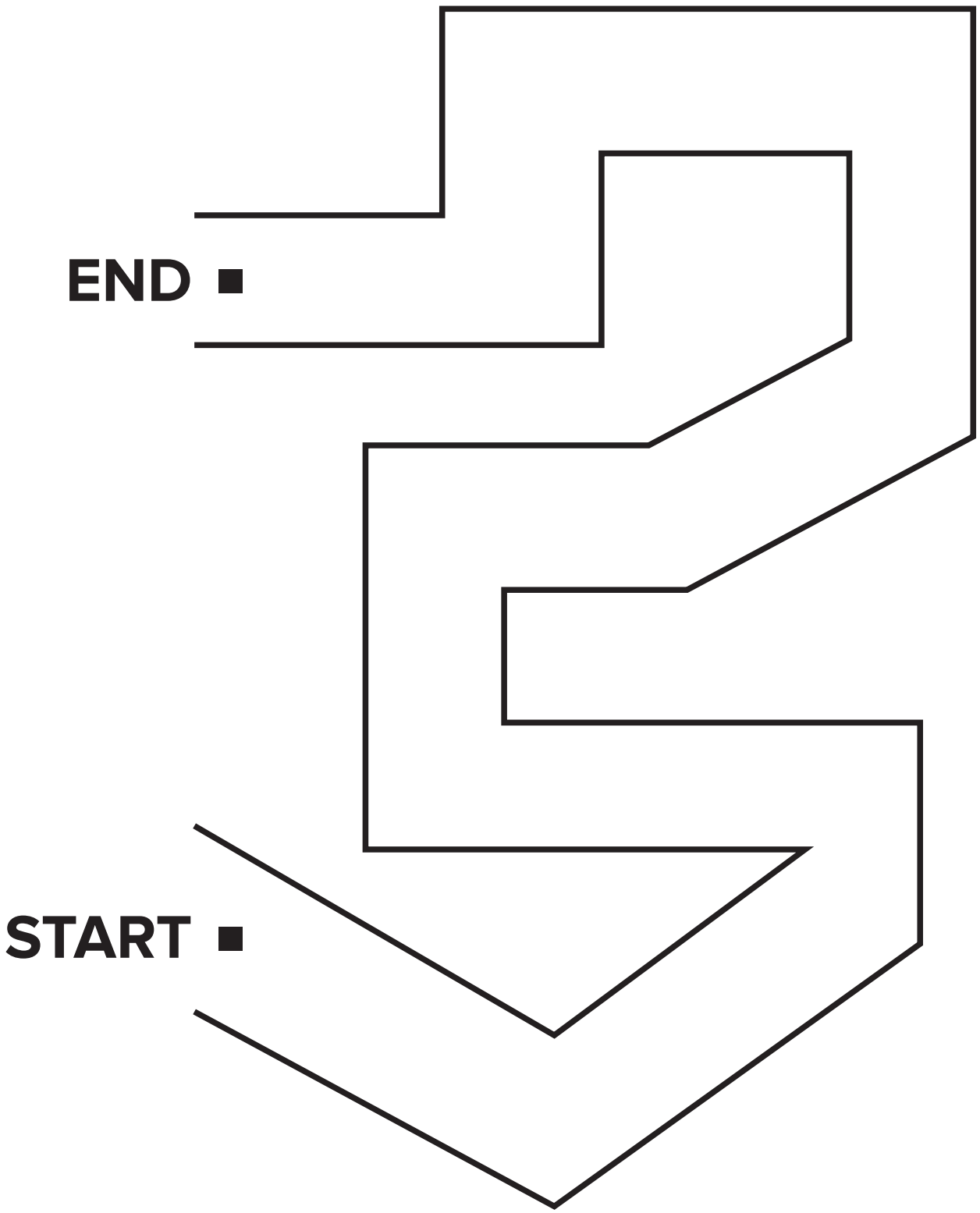

Activity | **Mirror Mazes**

Maze 2 Maze With A Mirror

Name:

Time to complete maze: