

# Paper Plate Marble Maze – STEM Activity

Created by Justin Bower, Logan County 4-H Educator

## Intended Audience:

1<sup>st</sup> - 3<sup>rd</sup> Graders

## Lesson Objectives:

Youth will –

- Engineer a marble maze on a paper plate
- Explore basic engineering principles like planning, design, and construction
- Test how small movements can impact balance

**Time:** 20 minutes

## Supplies:

- Paper Plates (heavy paper and high edges)
- Scissors
- Marbles
- Popsicle Sticks
- Glue Sticks / Tape
- Pipe Cleaners
- Construction Paper
- Other craft supplies

## BALANCE - ENGINEERING

### BACKGROUND

This activity explores the idea of balance and engineering. Balance means that the person or object is evenly spread out so that the object may remain upright and steady. Engineering is the use of scientific principles to design and build machines, structures, and other items (bridges, tunnels, roads, vehicles, and buildings).

### WHAT TO DO

- 1) Provide each child with a paper plate and access to the various craft supplies.
- 2) Have each youth think about a plan about how they want to engineer their marble maze.
- 3) Using the scissors, put two holes (one that the marble won't fall through) on opposite sides of the plate.
- 4) Use the craft supplies (popsicle sticks, pipe cleaners, construction paper, etc.) to create a maze that goes from one side of the plate to the other.

### CHALLENGES

- 1) Can each child get their marble from start to finish without dropping it?
- 2) Trade mazes with a friend.
- 3) Race your friend to complete your maze and then switch.

### QUESTIONS

- What supplies did you choose? Which ones worked better?
- How much movement did it take to move the marble around?
- If you made your maze over again, what would you do differently?



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES



[logan.osu.edu](http://logan.osu.edu)

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit [cfaesdiversity.osu.edu](http://cfaesdiversity.osu.edu). For an accessible format of this publication, visit [cfaes.osu.edu/accessibility](http://cfaes.osu.edu/accessibility).