

## Prompt: Wall Marble Maze

### Objective:

- Build a wall marble maze ramp that the marble has to jump from one part of the track/pathway to another several times

### Activity that Involves problem-solving and strategic thinking:

- Understanding the concept of gravity and momentum in making the marble jump
- Identifying different materials that can be used to create the maze ramp
- Problem-solving skills in designing a pathway that allows the marble to jump multiple times

### Standards addressed:

- **CCSS.MATH.CONTENT.K.G.A.2:** Correctly name shapes regardless of their orientations or overall size.
- **CCSS.ELA-LITERACY.L.K.1.A:** Print many upper- and lowercase letters.
- **NGSS.K-PS2-2:** Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.
- **CCSS.ELA-LITERACY.SL.1.1:** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- **NGSS1-PS4-1:** Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

### Background knowledge needed:

- What is a maze?

### Materials:

- Toilet paper or toweling tubes, cardboard, wrapping paper tubes, foam, popsicle sticks, tape, marbles

### Questions or statements to elicit engagement:

- I notice the marble keeps falling off here. What could you do about that?
- How are you going to use...?
- What happened when you did...?

### Vocabulary:

- Angle, chute, design, elevation, force, friction, incline, ramp, steep, structure, tube, tunnel
- Exciting Verbs: swerve, slide, jump, roll, tumble, bounce, launch, crash
- Comparatives and Superlatives: faster/fastest, heavier/heaviest, farther/farthest

### Reflections:

- What worked well?
- What part of your design made your marble go the fastest?
- How did you test your design?
- What part of your design do you like best or would you change? Why?
- When you made your design, how did you decide where things should go?

**Extension/Adding more complexity:**

- Could the maze start in two different spots?
- Do different size marbles travel differently? What do you notice?