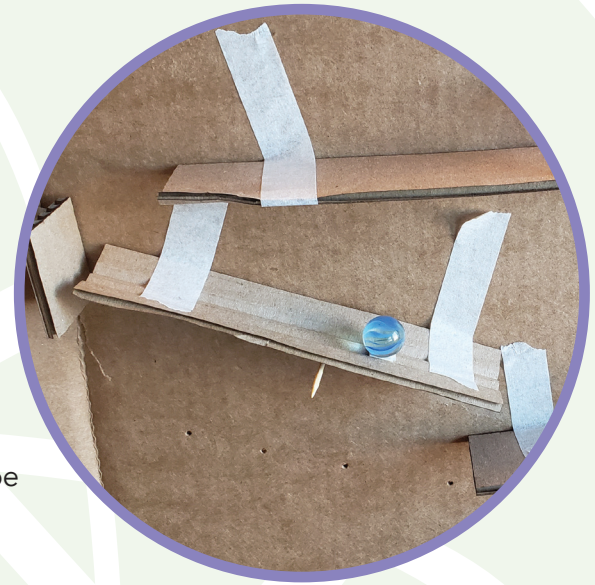
MARBLE RUN

Supplies

- **Box containing kit supplies**
  (Use this box as a base for marble run)
- **Cardboard track pieces**
  (12 in, 6 in, 3 in, 1.5 in)
- **Masking tape**
- **Toothpicks**
- **Two (2) marbles**
- **Design Cards and Pencils**



Optional

- Cardboard toilet paper tubes
- Various containers for marbles to land
- Other bits and pieces you think would be good to use

Instructions

1. Watch the video at **www.cmosc.org/squarespace/marble-run/** for tips.
2. Think about a design for your marble run. Use the pencil and blue cards to draw or sketch it. Where will it start? Where will it end? What will happen in between?
3. Create a track to use as a pathway for the marbles by rolling the cardboard pieces lengthwise around a pencil.
4. Use the box as a base for your marble run (see photo). Tape the cardboard tracks to the box. Try leaning it against a wall or chair to keep it at a good angle. If you want, tape it in place so it does not move while the marble is moving.
5. Use tape to hold the tracks in place on the cardboard box.
6. Use different angles to run the marble back and forth across the face of the cardboard box.
7. Use the toothpicks to stabilize the tracks from underneath. Use caution when inserting into the cardboard box just underneath the track you are stabilizing.

What Is Happening?

1. Whether you push your marble with your finger on the tracks you created, or just let it fall down the track, there are forces at work. A force is a push or pull on an object that makes it move. You can push it with a finger, or let gravity do its work and pull it down toward Earth.
2. How do the angles of the pathways affect the speed of the marble?
3. Can you make the marble go fast? Can you make the marble go slow? Can you make the marble go backwards?

Vocabulary

Force: A push or pull on an object that makes it move

Gravity: A force that attracts things to one another

Angle: When two (2) lines meet at a shared point; they are measured in degrees

Inclined plane: A flat, supporting surface tilted at an angle

Design: A plan or drawing of an idea that shows how something might look or function

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