

DIY MARBLE RUN

STEM CHALLENGE

Build a marble run using cardboard tubes and tape. Explore how the design of your marble run affects the speed and movement of the marbles. Your challenge is to make the marble take the longest time to reach the finish line.

INSTRUCTIONS:

Design Phase: Have students sketch a simple design for their marble run.

Build Phase: Using the provided materials, students will build their runs. They can work individually or in teams.

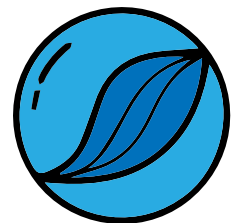
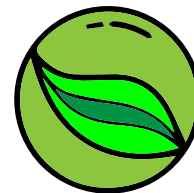
Test Phase: Test your marble run! Record the time it takes for your marble to complete the run. After your first test, try adjusting the design to make the marble move even slower. Can you make the marble take the most amount of time to finish the run?

Record your results here:

First Test: _____

Second Test (after changes): _____

Third Test (with new ideas): _____



Slowest Marble Challenge:

Now that you've tested your marble run, see if you can make the marble take the longest time to get from start to finish! Experiment with angles, obstacles, or materials to slow down the marble's movement.

Reflection: Have students discuss what worked well and what didn't. Did the marble move slower as you made changes? How did your design affect the speed?

REFLECTION QUESTIONS:

What did you change to slow down the marble?

How did the different angles and materials affect the marble's speed?

What was the most fun or challenging part of this experiment?

Write your thoughts here: _____

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Plan Your Marble Run

Checklist:

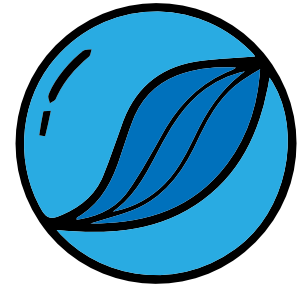
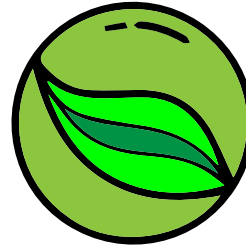
Cardboard tubes (variety of sizes)

Painter's tape

Scissors

Marbles

Tissue boxes (optional for collection)



Sketch your design here.

Things to think about:

What angles will you use?

How will you connect the tubes?

Where will the marble start and finish?

How can you design the run to make the marble move as slowly as possible?