

Design a rollercoaster!

- Marbles
- 6 ft. segment of ½ in. foam pipe insulation, cut in half lengthwise
 - Note: “½ in.” refers to the pipe size; the insulation will be a larger diameter.
- Masking tape
- Table or chair

1. Divide students into groups of 3-4 and distribute materials to each team.
2. Outline the challenge.
 - Each team must design and build a rollercoaster that is fun, reliable and safe – the marble “passenger” should be able to complete the entire track without falling off three times in a row.
3. Have students spend time planning. Think about:
 - Support: Use walls, chairs and tables to build a support structure for the track. Secure track to the supports using masking tape.
 - Potential and kinetic energy: How high does the starting position need to be to keep the marble on the track through loops and turns?
4. Build, test and improve.

- Add design constraints (e.g. every rollercoaster must have three hills and one loop).
- Challenge teams to create the longest track.
- Plan the footprint of an amusement park and decorate the rollercoaster.

[Build a Marble Roller Coaster](#), Science Buddies

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