

Rover Design Challenge

Lesson Objective: Students will use the Engineering and Design Process to create a rover to explore the surface of Mars. Students will work in small groups of 3-4 students to design a model rover. They will test their rovers on a ramp and measure the distance the rover rolls.

Ask: NASA has asked you to be part of the Rover Design Team! Your mission is to design a rover that can travel the furthest distance.

Read: *Space Explorers: Rovers* by Jennifer VanVoorst

Materials List:

- 1 cardboard tube
- 4 plastic drink lids
- 12 in. masking tape
- 1 piece construction paper
- 2 wooden dowels
- 2 bendy straws
- Ruler
- Scissors
- Cardboard ramp to test how far the rover can travel

Imagine: How will you use the materials to help design a rover that can roll the furthest distance? Brainstorm ideas for a rover that can roll down a ramp. Make sure to consider the following:

- What will the body of the rover look like?
- How will the rover move? (Hint: Think about simple machines we have learned about!)

Draw a sketch of at least one of your ideas. Don't forget to label your picture!

Build, Test and Improve

	Does your rover roll?	How far did it roll?	How can you improve your rover design?
Trial 1:	Yes/No		
Trial 2:	Yes/No		
Trial 3:	Yes/No		

Reflect:

- What was the hardest part about this challenge?
- What was your favorite part about this challenge?
- What did you learn from the challenge?
- What would you change if you could do this challenge again?

