

On a Roll



VIRTUAL Field Trip

to the California Science Center



Focus Question:
How can we make something move?

Buzzword:
Force

Use 1 game board to play on your own, or tape 2 together to play with a friend!

THE SITUATION

Your friend, Ada, invented a brand new game. She is challenging you to beat her high score of 20 points!

The Rules: Choose a tube.



No pennies



Two pennies stacked in the middle



One penny at each end

Roll your tube into any of the zones on the gameboard. Do this 10 times.

Score the most points to win!





EXPERIMENT: PART I

Materials:

- Cardboard tubes (from toilet paper rolls, paper towels, or mailing tubes)
- Tape
- Pennies
- Pencil
- Paper
- Game board on page 5

Before you challenge Ada, plan and carry out an investigation to compare how the tubes move on the game board.

1. Build each of the tubes from page 1. Tape down the pennies so they stay in place.
2. Decide how you will test the tubes:
 - What do you need to keep the same in every test?
 - What are you changing in every test?
 - How many times should you test each tube before you choose one to challenge Ada?
3. Test each tube.
4. Record your observations below, or on a separate piece of paper.

OBSERVATIONS



What patterns did you notice while you were testing? Use them to help you pick a tube to beat Ada's score!

WHAT'S GOING ON?



1. What do you think caused the tubes to move?
2. What do you think caused the three tubes to move differently from each other?

HYPOTHESIS

1. Circle which tube you will choose to challenge Ada.



2. Explain why you chose that tube:





EXPERIMENT: PART 2

Time to challenge Ada! Use what you learned in your investigation to beat her high score: 20 points!

Rules:

1. Only play with one tube.
2. Start with your tube on the starting line.
3. Only touch your tube once per turn.
4. You get ten turns.
5. Keep score.



High Score!
How many ways can you combine scores to equal a sum of 20 points or more?



SCORE

Turn	Points
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Total Score =

Take another game board here to play with a friend!

Zone 3 = 2 points

Zone 2 = 5 points

Zone 1 = 1 point

1. Place
tube here
to start.



START



2. Roll your
tube into
a zone to
score points!

