



## **CURIOUS GEORGE: RAMP AND ROLL Lesson Plan**

During this lesson, children explore the following engineering concepts:

- When placed on a ramp, some objects roll, others slide, and others stay put.
- The shape of an object and its placement on a ramp affects how the object moves.

As children go through the activities, they will be using the following science skills:

- Asking questions
- Making predictions
- Planning and conducting experiments
- Making and sharing observations

### **Materials**

- ☐ ramp (created by using cardboard, a game board, or a large picture book)
- ☐ blocks or a box (to prop up your ramp)
- ☐ objects that may or may not roll, such as:
  - balls
  - book
  - crayons
  - crumpled paper
  - plastic cups
  - plastic bottles
  - rolls of tape
  - small blocks
  - socks (a single sock and a rolled pair)
  - spools
  - spoon
  - toy car

## **Directions**

### **1. Make a ramp.**

- Make a ramp by propping up one end of a game board, a picture book, or a piece of cardboard. (Try using a box or a stack of blocks to prop up your ramp.)
- As you make the ramp, talk about what you are doing, using vocabulary words such as *incline* and *angle*.
- Explain that a ramp is a simple machine. Simple machines can be used to make tasks easier.

### **2. Slide or roll?**

- Gather a variety of objects (see Materials above).
- Ask children: *What do you think will happen when you put this at the top of the ramp? Will it slide? Will it roll?* (Use hand motions to show the difference between roll and slide.) *Will it stay put? Why do you think so?*
- Let children try it out. As they experiment, have them sort the objects into things that roll and things that don't.

### **3. Try out variations.**

- Place one of the rolling objects at the top of the ramp, but face it in a different direction. For example, place a car sideways instead of forward, or stand a bottle up instead of placing it on its side.
- Ask children: *What do you think will happen? Will this still roll?*
- Have them test out their predictions.
- Discuss the results.

### **4. Watch the *Curious George* video, “Hundley’s Great Escape.”**

- After they watch the video, ask: *Why didn’t the single ramp work for Hundley? How did Curious George come up with the idea to build a series of ramps?*

### **5. Continue the investigation.**

- Have children notice how far things go when they roll down the ramp. Ask: *How can you make them go further?*
- Raise or lower the ramp. Ask: *What happens when you raise or lower the ramp?*
- Talk about what might make an object roll faster or how you could slow an object down. See which methods work best.
- Put an object such as a phone book or a dictionary at the bottom of the ramp. Race two objects down the ramp and watch to see which will hit the phone book first.

- Discuss ways to vary the rate at which things roll. Ask: *Can you find a way to park a toy car on the ramp without it rolling all the way down, or a way to make a rolling object stop halfway down the ramp?*
- Remind students of what Curious George did in the video to make a ramp tall enough for Hundley. Point out that Hundley used the ramp to go *up* instead of *down*. Choose a location in your classroom that would require more than one ramp to reach. Brainstorm ideas of how to create a series of ramps in order to get to the top. Try them out!

### **Extend with Games**

Invite children to play “Feed Gnocchi” at

[http://pbskids.org/curiousgeorge/games/feed\\_gnocchi/feed\\_gnocchi.html](http://pbskids.org/curiousgeorge/games/feed_gnocchi/feed_gnocchi.html). In this game, children tilt ramps in order to send a meatball to a plate that The Man With the Yellow Hat is holding. (This game is also available in Spanish at [http://pbskids.org/curiousgeorge/games/span\\_feedgnocchi/](http://pbskids.org/curiousgeorge/games/span_feedgnocchi/).)

### **Extend with Books**

Encourage students to use these books as they continue to learn about ramps.

*Curious George Goes Bowling* by H. A. Rey (Houghton Mifflin Harcourt, 2009)

When The Man in the Yellow Hat forgets his bowling ball, Curious George decides that he can roll the ball right to Bowlmor Lanes!

*Mama Zooms* by Jane Cowen-Fletcher (Scholastic, 1993)

A little boy spends busy days zooming up hills, down ramps, and around town with his mom, on her wheelchair.

*Roll, Slope, and Slide: A Book about Ramps* by Michael Dahl (Picture Window Books, 2006)

From skateboard parks, to highway ramps, to ramps on moving vans, this book takes a look at the many ways we use ramps everyday.



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