

## Move It! Ready, Set, Roll!

**Remember:** In order to effectively build science understanding, *young children need opportunities for sustained engagement with materials and conversations that focus on the same set of ideas over weeks, months, and years* (National Research Council, 2007). This means you should plan to do the same programs with different materials and books over and over again...or a series of programs focused on the same STEM content and experiences.

**In this program:** Children will further explore ramps by making their own ramps and testing various types of balls to see how they roll. They will explore their ideas, observing how ramps help things move while using STEM inquiry practices: they will raise questions; explore materials; engage in simple investigations; observe, describe and compare; share and discuss ideas; and represent their ideas.

**What's needed:** Several ramps made from cardboard, flat boards, foam, metal gutters, etc. and blocks or books to raise and lower ramps; various types of balls (golf balls, foam balls, tennis balls, ping pong balls, rubber balls, etc.) or toy cars (Matchbox®); empty plastic liter bottles; masking tape to mark start line on the floor.

### Books for story time and explorations:

[Books about force and motion](#)

**First:** Conduct your usual story time routine, just like you normally would, while introducing the concepts of *force and motion* as well as *rolling and sliding*.

**Exploration:** Using masking tape, mark a starting line on the floor. Place one ramp (or more, depending on the size of your group) and several different types of balls on the mark.

Place a fun toy anywhere from 8-10 feet away from the starting line.

Children will take turns trying to reach the object by using the ramps to roll balls.

Talk together about what could be done to the ramps to make the balls go farther. Ask: What happens when you increase the slope of the ramp? What happens when you lower the ramp?

Children may use blocks or books to alter the height or direction of the ramp.

After children have had time to explore and change the ramps, gather the group together and have them share what they discovered. Encourage them to explain which balls worked the best and why, as well as what they had to do to change their ramp in order to reach their goal.

### Prompts/questions you can ask:

What do you notice about the ball that went farthest? Fastest?

How did you get the ball to reach the object?

What would happen if we moved the object farther away from you?

How would you need to change your ramp to have your ball reach it?

**Take-home ideas:**

Make a ramp instructions handout for families to take home to continue the exploration.

(instructions)

Include information about “Looking for ramps”

**Display ideas:** Books about cars, ball sports, force and motion, speed, velocity, ramps etc.

**STEM Discovery Center:** Set up a passive program area. Provide ramps and balls for children and families to explore. Include a laminated set of directions/challenges as well.

Promotion opportunities: social media, Front Porch Forum, local newspapers, make and display a [Documentation Panel](#).

