

Move It! Tubes and Balls

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 explore how balls move in tubes by experimenting with balls of different sizes, weights and textures. They will explore Force and Motion concepts 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 with drawing and/or models.

What's needed: A collection of balls of different sizes, weights and textures, cardboard tubes or plastic gutters for rolling balls.

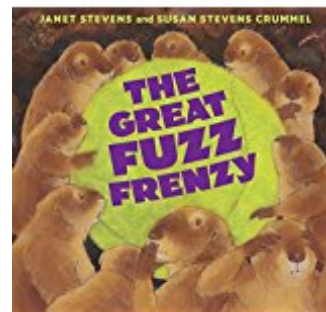
Books for story time and explorations:

Move It! by Adrienne Mason: Read page 10, "Make it Move." Discuss how the children made the items on page 10 and 11 move.

The Great Fuzz Frenzy by Janet Stevens

Maggie's Ball by Lindsay George (or your favorite book about balls)

[More 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*.

After reading *The Great Fuzz Frenzy*, discuss how the ball moved through the Ground Hog's tunnel. Place the cardboard tubes on ground so the children can see. Place a tennis ball in a tube. Ask: How can we make the ball move? How can you make the ball move without using your hands? Try out children's suggestions.

Give each child a tube and a ball. Ask: How can you make the ball move back and forth through your tunnel? How can you keep the ball from falling out of the tube? What can you do to make it stop? Give children plenty of time to explore moving the tennis ball through their tube.

Suggest children work with a partner and try to pass the ball to their partner's tube. Give children different balls to experiment with.

Prompts/questions you can ask:

What will happen if you raise one end of the tube higher?

How are the balls different? How are the balls the same?

Which ball will roll the fastest through the tube?

What other ideas can we think up using the tubes and balls?

STEM Programming for Young Children: How to Do It

STEM Discovery Center: Provide tubes and balls for children and families to explore in a passive program set up in the youth library. Include a laminated set of directions/challenges as well.

Display ideas: Display different [books about balls](#).

Promotion opportunities: Take photos and place in local newspaper as well as on the library's Facebook page. Make a [Documentation Panel](#) of your Move It! programs.

