Move It! Ramps 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 compare how balls move on ramps with different slopes. 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 or flat boards and blocks or books to raise and lower ramps. Balls of the same size for the explorations.

**Books for story time and explorations:**
- *Move It!* by Adrienne Mason
- *Roll, Slope, Slide* by Michael Dahl
- *Oscar and Cricket* by Geoff Waring
- [Favorite books about balls](http://www.prekinders.com/science-ramps/)

**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:** Introduce children to the ramps and materials. Using one of the ramp materials, talk with children about what a ramp is: a flat surface with one end higher than the other. An object placed on a ramp will roll, slide or stay put. Ramps help objects move.

Demonstrate with one ball, first with the surface flat.
Ask: What are some ways we can make the ball move?

Place one end of the surface on a book or block and explain that this is now a ramp. Ask: What do you think will happen if we put the ball on our ramp?

Make a steeper ramp (raise that end higher). Ask: What do you think will happen when the ramp is steeper?

Allow children time to build, change and talk about the ramps they make and what they observe happening.

**Data representation:** This activity is a great opportunity for children to *represent* their data. Here are some directions for making a child’s recording sheet:
**STEM Discovery Center:** Set up a passive program area. Display ramp and ball materials and laminated instructions with prompts/questions for an interactive Discovery Center.

**Community resources:** A walk to a local playground with a slide could be an educational trip to test various larger objects to see if they slide or roll. (Basketball, Frisbee, etc.)

**Promotion opportunities:** Library display of photos and children’s projects, social media, library website. Make and display a Documentation Panel of your Move It! programs.