

Objects in Motion t NISEnet

Materials DoS 2: Provide Appropriate and Appealing Materials
the materials need to be right for your activity and for your youth.

wooden dowel/chopstick

playdough

string

small binder clip

kitchen scale (optional)

Learning Goals DoS 5: Achieve the STEM Goal
When your activity is purposeful, every step leads youth toward the learning destination.

1. Objects in the universe interact in complex but predictable ways.
2. Stars, planets, moons and other objects in space orbit around each other because of gravity.
3. NASA scientists use what we know about the laws of physics to make new predictions & discoveries.

Resources DoS 1: Be Prepared
Organizing your activity gives youth more time for learning.

<http://www.nisenet.org/catalog/exploring-universe-objects-motion-2018>

There is a video demonstration of the activity. The activity guide can be printed as a table sign for participants. Read the activity guide ahead of time; it contains key vocabulary and explains the background for the learning goals. Read the facilitator guide; it has prompts on how to talk to participants about gravity and validate their learning experience. Print the ratio sheet if you would like participants to weigh ratios using a kitchen scale as an extension to the lesson.

Intro: 5min. Example: Gravitational forces exist between any objects with mass, and are certainly present in space. Gravity is the force that keeps us planted firmly on the ground, causes an apple to fall from a tree, and creates a pull between orbiting bodies in space. The model we build today will demonstrate that the mass of one object can affect the motion of another object even if that object is very small. Even small objects can make a big difference!

Activity: 20min.

1. Slip the sling over the wooden rod. Make two balls of playdough that are about the same size. Stick one onto each end. Hang the rod and playdough from the string and slide the sling until you find the point where the rod