

# Forces, Balance, and Motion

*Students explore how push and pull work to affect motion using toys, magnets, and more!*

## **SUMMARY:**

Students will conduct different experiments to explore how push and pull can cause an object to move faster, slow down, or change direction! They will experiment with magnets and familiar objects to create changes in movements.

## **EDUCATIONAL VALUE:**

This workshop provides students with an opportunity to explore force using materials of different sizes, shapes, and properties. They will use magnets to change the direction and speed of objects to reach a desired destination! They will work to balance items based on positions and weights of the materials. Hands-on activities encourage students to interact with the concepts presented. This lesson provides an opportunity to develop scientific skills through inquiry based instructional methods.



## **TAKE-HOME MESSAGE:**

- 1 A force is a push or pull, and can change the motion of an object in three ways: go faster, slower or change the direction of the motion.
- 2 A force (push or pull) is needed to start objects moving, keep objects moving or stop objects that are moving.
- 3 Magnets exert an unseen force that makes some things move without touching them, they have poles that attract or repel each other.
- 4 The size of the change in motion of an object is based on the amount of force applied to the object, and balance is associated with position and weight.



## **TAKE-HOME PRODUCT:**

Mad Science® Gravity Assisted Launcher

## **North Carolina Essential Standards:**

Understand how forces (pushes or pulls) affect the motion of an object.

- 1.P.1.1 Explain the importance of a push or pull to changing the motion of an object.
- 1.P.1.2 Explain how some forces (pushes and pulls) can be used to make things move without touching them, such as magnets.
- 1.P.1.3 Predict the effect of a given force on the motion of an object, including balanced forces.