## Force and Motion

### Description

Second grade students push, pull, and manipulate things to see what will happen. This unit will teach students how forces can effect an object's motion. Students will gain knowledge of how a push and pull can alter the speed and direction of an object. In order to master the standards, students will use science and engineering practices to study force phenomena.

### Key Words to Know

- **Force** – a push or pull that makes something move
- **Motion** – the act of moving
- **Object** – anything that can be seen
- **Position** – a place or location
- **Pull** – to draw or tug toward oneself or itself
- **Push** – to press upon or against a thing with force in order to move it away

### At Home Vocabulary Strategies

1. Read aloud with your child.
2. Use vocabulary words in daily conversations.
3. Build a word wall or window.
5. Relate words to real life experiences.
**Children’s Literature** *(Available at your local public library or Amazon).*


### Force and Motion

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The Motion Song:
an object affects the motion of the object.

b. Design a device to change the speed or direction of an object.

c. Record and analyze data to decide if a design solution works as intended to change the speed or direction of an object with a force (a push or a pull).

**Science and Engineering Practices**
- Obtain, evaluate and communicate information.
- Plan and carry out investigations
- Design solutions
- Analyze and interpret data

**Crosscutting Concepts**
- Cause and Effect
- System and System Models

**Core Idea**
- Forces

### 3. _____ caused by the mud makes the car move slower.

A. Friction  
B. Air  
C. Gravity

**Online Literature**

- [Force and Motion](https://www.youtube.com/watch?v=rfeVINL7d9U&t=45s)
- [Brainpop: Forces](https://www.brainpop.com/science/energy/forces/)
- [Bill Nye: Forces and Motion](https://www.youtube.com/watch?v=8iKhLGK7Hpk&t=2s)

**CHANGES TO SCIENCE STANDARDS:** Students are expected to perform the practices while learning the content and understanding the crosscutting concepts.
**Science and Engineering Practices**
Students can use their understanding to investigate the natural world through the practices of science inquiry, or solve meaningful problems through the practices of engineering design.

**Crosscutting Concepts**
Provide students with connections and intellectual tools that are related across the differing areas of disciplinary content and can enrich their application of practices and their understanding of core ideas.

**Core Ideas**
Core ideas cover the four domains: physical sciences, earth and space sciences, life science, and engineering and technology.

Quoted text from Peter A'Hearn