

Make it Go!

Unit Overview



DESIGN CHALLENGE:

How can we make a galimoto toy and use it to demonstrate pushes and pulls?

ANCHORING PHENOMENON:

A galimoto toy moves back and forth.

STORYLINE

In Make it Go!, students are introduced to scientific ideas about pushes and pulls. This unit emphasizes the Crosscutting Concept of Cause and Effect as students design and carry out simple tests to see how pushes and pulls affect motion. Students begin this unit by exploring the difference between natural and engineered objects as an introduction to the unit's Design Challenge. They also consider how engineered items are useful or help solve problems. Then, students hear a story about a boy who engineered his own toy called a galimoto before thinking about what they might need to know to make a galimoto toy of their own.

Next, students investigate pushes and pulls and make observations about how a push or a pull affects the motion of objects. Students learn that a force is needed to start a motion.

Following this initial exploration, students then take their force and motion investigations further as they experiment with the effects of different strengths or directions of pushes and pulls on the speed and direction of objects.

In the final section, students complete their Engineering Design Challenge. Students use what they've learned about force and motion to design, build, test, and redesign a galimoto toy of their very own. Students use these toys to demonstrate various movements including pushes, pulls, change of direction, and change of speed.

OVERVIEW

Section 1 <i>What is a galimoto?</i>	Section 2 <i>How can we make toys move?</i>	Section 3 <i>How can the direction and speed of a toy be changed?</i>	Section 4 <i>How do we make a galimoto?</i>
<i>Total Time: 4 days</i> LESSON 1 Why do humans make things? LESSON 2 What do we need to know to make a galimoto?	<i>Total Time: 6 days</i> LESSON 3 What can we observe about a push? LESSON 4 What can we observe about a pull?	<i>Total Time: 3 days</i> LESSON 5 What must happen in order to change the direction or speed of a toy?	<i>Total Time: 4-6 days</i> LESSON 6 How are we being engineers when we make a galimoto?

Unit 3 Teacher Guide (version 07.25.19) *Make It Go!*
Washington University in St. Louis Institute for School Partnership