

COMMON CORE
Lessons & Activities

FORCE & MOTION

Reading for Information

Higher-Order Thinking

Writing Prompts

Current Events Analysis

Vocabulary

Cause & Effect

Graphic Organizers

& More!

REPRODUCIBLE

One teacher is allowed to make copies for use in her/his classroom!



About this Book

This Common Core Lessons and Activities Book allows you to immediately meet new Common Core State Standards for English Language Arts, as well as Literacy and Writing in History/Social Studies. It is designed to supplement your Social Studies resources, adding new Common Core rigor, analysis, writing, inference, text-dependent questions, and more into your daily instruction.

How to Use this Book:

- Work through the lessons and activities as a class to teach your students higher-order thinking, analysis, and 21st century skills necessary to meet new Common Core expectations.
- Allow students to work through the lessons independently to build and practice these new skills.
- Include technology, collaboration, presentation, and discussion in the activities as you desire—you can decide how in-depth to go.
- Watch your class develop new abilities to meet the rigor of Common Core State Standards, right before your eyes!

Tips:

- Use some of the pages—or use them all—based on your grade, your students, your curriculum, and your needs.
- Use the pages at their current size, or if you prefer them to be 8-1/2" x 11", enlarge them 125% on your copy machine.
- Download graphic organizers labeled “GO” in the Table of Contents by going to: www.gallopade.com/client/go
- Use the correlations grid to easily see which Common Core standards are covered in each lesson.

Common Core Lessons & Activities: Force & Motion

By Carole Marsh

Published by Gallopade International, Inc.

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Printed in the U.S.A. (Peachtree City, Georgia)

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G: Includes Graphic Organizer

GO: Graphic Organizer is also available 8½" x 11" online
download at www.gallopade.com/client/go

(numbers above correspond to the graphic organizer numbers online)

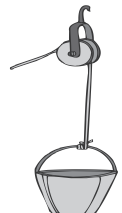
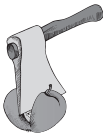
Simple Machines

Read the text and answer the questions.

In science, work (pushing, pulling, and lifting) is moving an object from point A to point B. Doing work requires energy. Six simple machines, or tools, make this work easier. Simple machines allow us to use less force to do more work and save our energy!

- **Inclined plane:** An inclined plane is a slanted, flat surface—like a ramp. An inclined plane makes pushing or pulling an object easier.
- **Wedge:** A wedge is used to push things apart. It is smooth, often sharp, and slanted like a triangle.
- **Screw:** A screw is a simple machine that can be pushed through wood. It holds material like wood together.
- **Lever:** A lever is a bar that pivots on a fixed point called the fulcrum. Levers can help lift heavy objects with less effort.
- **Wheel and axle:** A wheel rotates an attached axle (a cylindrical post) to move objects like a wagon or a wheelbarrow.
- **Pulley:** A pulley is a simple machine that lifts a load using a rope, cable, or chain along a grooved wheel.

1. What is the purpose of a simple machine?
2. A. Which simple machines are useful for lifting objects?
B. Which simple machines are helpful for moving objects?
C. Which simple machines have opposite functions?
3. Use the text to label each simple machine shown below.



4. You need to lift a 400 lb. bag of flour from the ground to a shelf about 5 feet high. Write a short narrative explaining how you might use simple machines to help you move the bag of flour.

EXPERIMENT ANALYSIS

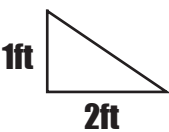
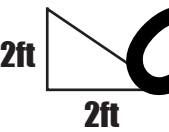
Will It Roll?

Read the text and data table, and answer the questions.

Hernandez learned that friction between two surfaces caused objects to slow down. Hernandez wondered about how different types of surfaces might affect moving objects. He knew that certain surfaces caused more friction than others, but he was not sure exactly what that meant.

So, he conducted a quick experiment using incline planes, marbles, and several different surfaces. He placed the incline planes on the different surfaces and rolled marbles of different weights down the slope. Hernandez recorded how far away from the incline plane the marbles traveled on each surface.

The first surface he chose was a smooth wood floor. The second surface he tested was a patch of short-cut grass. The third surface he tested was a thin layer of sand.

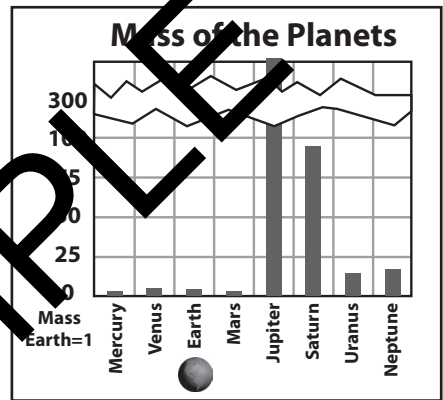
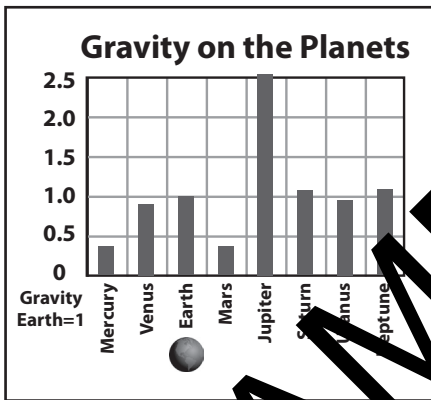
 1ft 2ft	Marble Mass	Surface 1	Surface 2	Surface 3
	5 grams	15 feet	2 ½ feet	3 inches
	3 grams	11 feet	1 ½ feet	1 inch
	1 gram	6 feet	½ foot	½ inch
 2ft 2ft	Marble Mass	Surface 1	Surface 2	Surface 3
	5 grams	21 feet	4 feet	5 inches
	3 grams	15 feet	2 feet	2 inches
	1 gram	11 feet	1 foot	1 inch

- Use the text to make a list of all the materials that you would need to recreate this experiment.
- Write the question that Hernandez's experiment attempts to answer.
- Which surface provided the least friction? How can you tell?
 - List at least two other surfaces that might have similar results.
- Which surface provided the most friction? How can you tell?
 - List at least two other surfaces that might have similar results.
- Cite evidence from the text to support the inference: "A greater amount of friction is required to stop an object with greater mass."

Pulling Things Together

Read the text, look at the graphs, and answer the questions.

Gravity is an invisible force exerted by all objects that pulls other objects toward its center. On Earth, for example, we say the Earth's gravity pulls objects "down" toward the center of the Earth. Earth's gravity is what keeps objects on Earth from floating into space. Earth's gravitational pull also reaches out into space, pulling the moon in orbit around the Earth. The sun's gravity is so strong that it keeps all objects in the solar system orbiting around the sun.



- According to the text, what force causes planets to orbit the sun?
 - What force causes the moon to orbit the Earth?
 - Does the moon also orbit the sun? Explain why or why not.
- With a partner, design a simple experiment to show that gravity pulls objects "down" to the center of the Earth.
- What information is given in each graph?
 - Infer why Earth's mass and gravity are used as a scale.
- Which planet has the greatest mass?
 - Which planet has the least mass?
 - Which planet has the strongest gravity?
 - Which planet has the weakest gravity?
- What is the relationship between mass and gravity?
- All objects in the solar system are pulled by the sun's gravity. What can you infer about the mass of the sun?

RESEARCH & PRESENTATION

Newton's Laws

Complete the instructions for Parts A, B, and C.

PART A: In a small group, choose one of Newton's three laws of motion to research in depth. Complete the KWL chart by writing what you already **know** about Newton and his laws and at least five questions about what you **want** to learn. Then use at least two online resources to answer the questions you asked. Record your answers under "What I **learned**."

Be sure to define the law, explain any unfamiliar terms, and draw an illustration to represent the law.

What I already know :	What I want to learn:	What I learned :
Summary of Newton's _____ law.	Illustration of Newton's _____ law.	

PART B: Summarize Newton's _____ law in a digital media presentation or poster presentation. Use illustrations and examples to explain each part of Newton's law.

PART C: Give your presentation to the class. Discuss how each of Newton's laws affects your life. How might Newton's laws be useful for predicting motion?

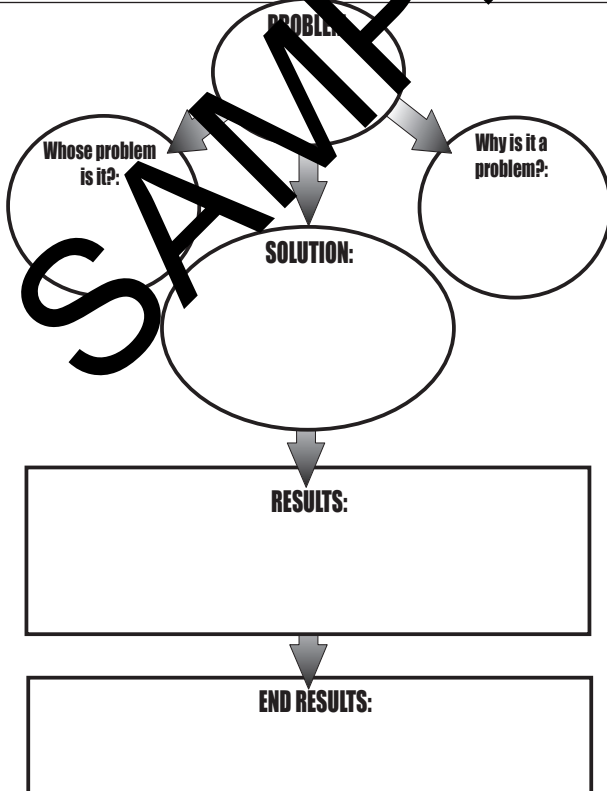
Magnetic Forces

You work for the *Daily Thunder*, your school newspaper. Readers send you their problems, and you solve them. Complete the problem-solution-results graphic organizer for each case. Use what you know about the repelling and attracting properties of magnets to help you.

Case #1: At lunch, my purse is always coming open and sometimes my things fall all over the floor. I need a way to keep it closed. Can you help?

Case #2: When I was playing outside, I lost my metal necklace in the dirt and sand. It is silver, but has several iron pieces in it. Can you help?

Case #3: My mom has threatened to take away my cell phone if I keep leaving the front door open. Who has time to close doors? I certainly don't! What do you suggest?



Correlations to Common Core State Standards

For your convenience, correlations are listed page-by-page, and for the entire book!

This book is correlated to the Common Core State Standards for English Language Arts grades 3-8, and to Common Core State Standards for Literacy in History, Science, & Technological Subjects grades 6-8.

Correlations are highlighted in gray.

PAGE #	READING										WRITING										LANGUAGE						SPEAKING & LISTENING									
	<i>Includes:</i> RI: Reading Informational Text RST: Reading Science & Technical Subjects										<i>Includes:</i> W: Writing WHST: Writing History/Social Studies, Science, & Technical Subjects										<i>Includes:</i> L: Language LF: Language Foundational Skills						<i>Includes:</i> SL: Speaking & Listening									
2	RI	1	2	3	4	5	6	7	8	9	10	W	1	2	3	4	5	6	7	8	9	10	L	1	2	3	4	5	6	SL	1	2	3	4	5	6
	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
3	RI	1	2	3	4	5	6	7	8	9	10	W	1	2	3	4	5	6	7	8	9	10	L	1	2	3	4	5	6	SL	1	2	3	4	5	6
	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
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	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
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	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
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	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
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	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
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	RST	1	2	3	4	5	6	7	8	9	10	WHST	1	2	3	4	5	6	7	8	9	10	LF	1	2	3	4	5	6							
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COMPLETE BOOK	RI	1	2	3	4	5	6	7	8	9	10	W	1	2	3	4	5	6	7	8	9	10	L	1	2	3	4	5	6	SL	1	2	3	4	5	6
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For the complete Common Core standard identifier, combine your grade + "." + letter code above + "." + number code above.

In addition to the correlations indicated here, the activities may be adapted or expanded to align to additional standards and to meet the diverse needs of your unique students!

Common Core Lessons & Activities Books

Social Studies Titles:

- Declaration of Independence
- U.S. Constitution
- Bill of Rights
- Road to the Civil War
- The Civil War: Key Battles & Events
- Jamestown
- Key Events of World War II
- Civil Rights Movement
- Branches of Government
- Basic Economic Concepts
- Women's Suffrage and the 19th Amendment
- The American Revolution
- Explorers
- The Olympics
- Underground Railroad
- Forms of Government: Democracy, Monarchy, & Oligarchy & More
- Ancient Greece
- Ancient Egypt
- Native Americans
- Indian Removal & the Trail of Tears
- Investors & Inventions
- Map Skills
- Westward Expansion
- Communities

Science Titles:

- Habitats
- States of Matter
- Cell Structure
- Weather
- Water Cycle
- Energy
- Solar System
- Sound
- Mammals
- Light
- Rocks and Minerals
- Oceans
- Heredity & Genetics
- Magnetism
- Natural Resources
- Ecosystems
- Force & Motion
- History of the Earth
- Life Cycles
- Wave Properties
- Landforms
- Classification of Organisms
- Electricity
- The Scientific Method

COMMON CORE Lessons & Activities

Are you expected to change how you teach because of new CCSS for English Language Arts & new CCSS for Literacy and Writing in History/Social Studies and Science?

Are you expected to continue to meet existing science and social studies standards, AND integrate new, more rigorous expectations for reading, writing, analysis, inference, and more into your daily instruction?

This series of 48+ little books is a **HUGE** help!

Common
Core at an
Uncommon
Value

Supplement the resources you already have by choosing the books in this series that meet the science and social studies topics you teach. Each book will provide you with ready-to-use reproducible pages that are the exact kinds of Common Core lessons and activities you need to meet the new added requirements of Common Core!

**"You'll want these for
every topic you teach!"**

-Amy Johnson, Common Core Specialist

You don't have to
start from scratch.

This brand new series
meets Common Core

State Standards for ELA + Common Core State Standards for
Literacy and Writing in History/Social Studies and Science!