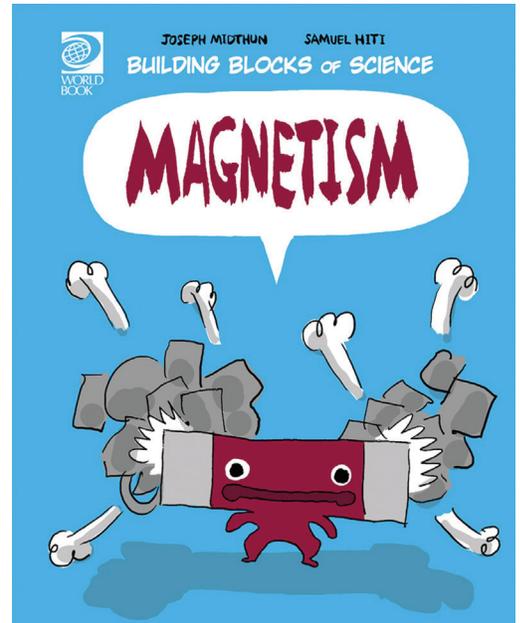


BUILDING BLOCKS OF SCIENCE

PHYSICAL SCIENCE

LESSON PLAN & GUIDED DISCUSSION

Each of the 10 *Building Blocks of Science* volumes features a whimsical character which guides the reader through a physical science topic. This series is perfect for students across a spectrum of reading comprehension and science mastery levels.



General Information	
Title:	Opposites Attract
Materials:	<ul style="list-style-type: none"> • A magnet • A needle • A paper clip • A cork (cut a small disk off each cork) • A glass bowl • Water
Objective:	<p>Students will participate in a group discussion on the topic of magnetism. Following the discussion, they will create their own compasses. They will learn that Earth is surrounded by a magnetic field, and that the poles of Earth's magnetic field are near the geographic North Pole and South Pole. This activity will demonstrate that the needle on a compass is magnetic and will line up with Earth's magnetic field.</p>

Lesson	
Group discussion questions:	<p>Make sure your students have grasped the major concepts of this lesson through an informal group discussion. This is an opportunity for you to highlight the most important points in the book and to clarify any uncertainties your students may have. Use the questions below as a guideline but feel free to generate your own!</p> <ul style="list-style-type: none"> • Are there any examples of magnets in nature? Name some. • How is it that magnets pull on objects without touching them? • How does a compass work? • How does distance affect a magnet's pull?
Procedure	<p>Have each pair follow these instructions:</p> <p>Have your students rub the needle with the magnet about 30 times in one direction. Make sure they know not to rub the needle back and forth.</p> <p>Students can now test the needle's magnetic power by trying to pick up the paper clip with the needle. If the needle picks up the paper clip, it is ready. If it does not pick up the paper clip, instruct them to rub the needle again with the magnet.</p> <p>Put some water in the bowl and set it on a flat surface. Place the needle and cork into the bowl. Carefully place the needle on top of the cork.</p> <p>The needle will point toward the magnetic pole.</p>
Vocabulary for the Word Wall:	<p>As a class, decide on a few vocabulary words that were particularly relevant to this activity. For example,</p> <ul style="list-style-type: none"> • force • pole • magnetic field • repel <p>Pass out a few index cards and ask students to write the vocabulary word on the front of the card and its definition on the back. Students can refer to the glossary on p. 30 as a reference. There are probably not enough words for everyone in the class to make a card so just be mindful that each kid gets a turn at some point during this unit.</p> <p>Post the cards on a "WORD WALL" bulletin board in your classroom.</p>

Common Core Standards highlighted in this lesson

Standards:

ELACC4RI3

Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

ELACC4RI4

Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

ELACC4RI7

Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

ELACC4SL1

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own.