Lesson 2.4
What My Sister Taught Me About Magnets
Lesson Overview

Students read *What My Sister Taught Me About Magnets*, which presents a fictional account of two sisters discussing and investigating magnets. Students again use the strategy of setting a purpose for reading, this time using the text feature of the table of contents to do so. As they read, students identify specific information in the text related to their reading purpose. After reading, students return to the text to consider an important new text feature—data tables. Students work together to think about what makes the table a useful way of presenting data and about why and how the girl in the story uses tables to organize information in her investigation notebook. This lesson reinforces concepts about magnets introduced earlier and provides another opportunity to read science text and make sense of a data table.

**Anchor phenomenon:** The floating train rises, floats above the track, then later falls back to the track.

**Investigative phenomenon:** The results of a young girl’s magnet investigations.

**Students learn:**

- Magnets can attract or repel other magnets.
- Magnets can attract some metal objects.
- Magnets can have different shapes and different strengths.
- Tables are a way of organizing data so that patterns are easier to find.
- Tables have features that help readers interpret the data they presented.
- Recording the results of an investigation is a way to remember what happened and share it with others.
- Scientists use notebooks to record their ideas.
The book is introduced, and the teacher uses the table of contents to set the purpose for reading—to find out more about magnetic poles.

Instructional Guide

1. **Revisit the Investigation Question.** Focus attention on the Investigation Question on the board: *In what ways can magnetic forces make an object move?* Let students know that they will read a book today that will help them continue to answer this question.

2. **Project or hold up a copy of the book and introduce it.** Let students know that today they will read a book called *What My Sister Taught Me About Magnets.*

This is a book about a girl who loves magnets and how she investigates those magnets.

3. **Discuss genre.** Explain that this book is another example of fictional text, like the first book they read, *Forces All Around.* This book tells about two sisters who are investigating magnets. Even though the two characters in the book are fictional, the information in the book about magnets is true.

4. **Review Magnet Anticipatory Chart to consider possible purposes for reading.** Remind students that scientists set a purpose before they investigate or read. Point to the Magnet Anticipatory Chart and ask students to point out questions the class has not fully answered yet. Then invite students to point out things the class has learned that they might want to know more about.

When scientists set a purpose before reading, they think about what questions they are trying to answer and use that to determine what their purpose for reading should be.

5. **Distribute books.** Distribute one copy of the book to each pair of students.

6. **Examine table of contents.** Project or hold up your copy of the book and show students the table of contents on page 3. Explain that the table of contents can be useful when setting a purpose. Have pairs read through the table of contents.

7. **Invite students to suggest possible purposes for reading.**
 Based on what we have learned so far about magnetic force and the question we are investigating, what could be a good purpose for reading?

Have pairs or small groups discuss ideas, then call on volunteers to share. Write all ideas on the board. As needed, encourage students to add more ideas related to topics in the table of contents, or related to what the class has already learned about magnets.

8. Help the class agree on a purpose for reading. Help the class choose a purpose for reading. There are many possible purposes that will work, including:

- Find out about different kinds of magnets.
- Find out why magnets sometimes attract and sometimes repel other magnets.
- Find out why magnets attract some metal objects but not other.
- Find out more about the distances at which magnetic force can act.
- Find out more about the strength of magnetic forces.

9. Record class’s reading purpose on the Setting a Purpose for Investigating and Reading chart. In the “Reading” column, write the purpose you agreed on. Let students know that this is the purpose they should have in mind as they read today. You can also let them know that students will have the chance to decide on the purpose for reading with a different book later in the unit.

Teacher Support

Instructional Suggestion

Providing More Experience: Today’s Daily Written Reflection

What was your favorite magnet trick? Why? This prompt (on page 19 in the Investigation Notebook) asks students to think back on what they did with magnets in Lesson 1.6. It encourages them to do more than simply state the trick; it asks them to explain why it was interesting to them. This Daily Written Reflection offers an opportunity for students to think about the forces between magnets more carefully as they reflect on investigations they did in the previous lesson and reconsider the importance of those investigations.

Background

About the Book: What My Sister Taught Me About Magnets

What My Sister Taught Me About Magnets tells the story of a girl who loves to investigate magnets. She investigates the similarities and differences between magnets of different shapes, sizes, and strengths and makes discoveries about magnetic poles and what magnets attract. Through a series of "explanations"—similar to the explanations students will construct in the unit—she describes how she compares different magnets and tells her older sister what she has learned by investigating. What My Sister Taught Me About Magnets models ways of investigating magnetic force, recording data, making explanations, and using comparative language. It also supports students' investigations by providing them with information about the properties and types of magnets.
Instructional Suggestion

Pedagogical Goals: Reasons for Having the Class Generate Possible Purposes
A goal of this unit is to help students gain practice and ability setting a purpose for investigating and reading, a key element of the science practice of planning and conducting investigations and the science practice of obtaining information. The unit is designed to gradually give students more independent responsibility with this practice. In this lesson, students get a first opportunity to generate possible purposes. The class then agrees on one purpose, because it is likely at this point that many students will generate possible purposes that do not relate to what the class has been investigating or that will not match the information actually in the book. Later in the unit, students will get to pick their purpose more independently. This book is intended to reinforce earlier ideas about magnetic force, and offer opportunities to extend that learning with more details. Because of this there are many possible purposes for reading that will work in this lesson. This makes it relatively likely that you will be able to choose a purpose that students generated and that the class shows interest in.
Pairs read the book and mark evidence that helps them learn more about magnetic force, related to the purpose for reading the class chose.

Instructional Guide

1. Refer to the Partner Reading Guidelines. Remind students that they will now read in the same way that they did last time. Briefly review the Partner Reading Guidelines.

2. Distribute sticky notes for marking evidence. Distribute a few sticky notes to each pair of students. Remind students that they should mark evidence related to the class’s reading purpose.

3. On-the-Fly Assessment: Students read with a purpose. Partners read and mark evidence. Circulate and assist as needed, paying attention to students’ use of a purpose to guide their reading.

Embedded Formative Assessment

On-the-Fly Assessment 7: Reading with a Purpose

Look for: As you circulate, make note of how well students are able to use the purpose that was provided to guide their reading of the text. Are they talking with their partners about the purpose the class agreed on? Do they connect their reading to the experiences they had with magnetic force in earlier lessons?

Now what? If not, provide more reminders of what the purpose is and why setting a purpose is helpful. Point out when you notice students mentioning or focusing on the purpose. Next time students are asked to read with a purpose, help them reflect on whether or not they’ve met the purpose and model what it would look like to read with that purpose. Depending on how many students need this support, you could provide it to students individually, in a small group, or to the whole class. Early in the unit, students are given a purpose to read; later in the unit, they will be selecting their own purposes for reading.
The book is introduced, and the teacher uses the table of contents to set the purpose for reading—to find out more about magnetic poles.

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1. **Revisit the Investigation Question.** Focus attention on the Investigation Question on the board: *In what ways can magnetic forces make an object move?* Let students know that they will read a book today that will help them continue to answer this question.

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