

Using Compare and Contrast to Write in Science

Summary

The purpose of this activity is to teach writing in a science context using the text structure of compare and contrast.

Group Size

Small Groups

Materials

Chart paper

Tape

- [Magnetism Fact Strips](#) (pdf)

Additional Resources

- *Working with Electricity and Magnetism*
, by Kathy Furang (2004); ISBN 1-4108-0438-0
- *Magnets (Science Alive!)*
, by Darlene Lauw (2002); ISBN 0-7787-0609-5

Background for Teachers

It is assumed that [Introducing Text Structures in Science](#) activity has already been taught using descriptive text structure examples. This lesson is intended to be a model lesson and is not expected to be the only occasion where students write compare and contrast texts in science. The principles taught in this lesson may be adapted for use in any of the Science Core Curriculum Objectives where compare and contrast is emphasized. The use of the verb "compare" in the Core Curriculum signals that this text structure will be useful.

This activity is intended to mesh with the activities about permanent magnets and electromagnets found in Standard III. Students will write about the similarities and differences of these magnets. This activity should be used after students have had several experiences with permanent magnets and electromagnets. For information about permanent and electromagnets, consult the Teacher Resource Book.

Note: During these activities, an emphasis should be placed on the observations that are needed to report effectively.

Intended Learning Outcomes

1. Use Science Process and Thinking Skills
3. Understand Science Concepts and Principles
4. Communicate Effectively Using Science Language and Reasoning

Instructional Procedures

Invitation to Learn

Review the permanent and electromagnets students have experimented with. Recall some of the experiments the class has done with the two kinds of magnets. Discuss how the two kinds of magnets are alike and different.

Instructional Procedures

Give chart paper, tape, and a set of *Magnetism Fact Strips* to each group. Ask the group to place the strips in three categories:

True only for permanent magnets.

True only for electromagnets.

True for both permanent and electromagnets.

Similarities	Only Permanent Magnets	Only Electromagnets
Have a magnetic field Attract iron and steel Have a N and S Pole	Work constantly Cannot be turned off and on Loose magnetism if dropped Magnetic field is strengthened if stroked by a stronger magnet	Must connect to an electrical circuit Stronger if electricity increased Keep a constant amount of strength Can be turned off and on

Have students in one group share their charts with another group. Have them look for areas of disagreement and come to a consensus. Tape their strips in the place.

Share charts the whole class. Come to a class consensus.

Discuss how to organize a paragraph that compares the two kinds of magnets. Explain that you will write about both similarities and differences in the paragraph.

If this is first time writing a compare and contrast paragraph, use a shared writing approach. On chart paper, or an overhead transparency, write a short paragraph as a class that compares and contrasts permanent magnets and electromagnets. Use the strips from the chart to guide your organization and writing. Depending on the experience of your students, have them complete the paragraph after you begin it together.

Have students check to see if all the ideas in the chart are written in their paragraphs. Have them share their paragraphs with each other.

Extensions

Have more experienced writers write their own paragraph to compare and contrast permanent magnets and electromagnets. Have them share their paragraphs with each other.

If students are very inexperienced writers, you may want to model the writing process and write the paragraph yourself, thinking aloud as you compose the writing. Share the writing as you complete the paragraph. Have students try their own paragraphs and share.

Have students generate their own comparisons of permanent and electromagnets rather than using teacher-made fact strips. First, have students list facts about permanent and electromagnets in a T-chart. Next have them place the facts in a Venn Diagram that separates them into three categories:

true only for permanent magnets,

true only for electromagnets, and

true for both.

Revise and edit the original draft to complete the writing process and make a final written piece. Illustrate the text. You may add this to a science portfolio or publish in it some other form, such as a class book.

Use compare and contrast text structure to write about other comparisons in the Science Core Curriculum. For example, have students write compare and contrast paragraphs about physical and chemical changes, or to compare inherited and learned traits of different species.

This activity could be taught in a small, guided reading or writing group with more teacher scaffolding

Use the compare and contrast text structure in social studies and other content areas to reinforce the text structure.

Assessment Plan

This writing lesson focuses on the writing trait of organization. Use informal assessment strategies to determine if students understand and use this text structure. Look for sentences with similarities and sentences with differences.

If you complete the entire writing process with this piece, create or use an informational writing rubric to assess the final written paper. A [Science Writing Rubric](#) is provided. Adapt as necessary for compare and contrast writing.

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