Using Cause and Effect 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

Utah land formation poster
- Erosion Word Strips - Rock Slide Set (pdf)
- Erosion Word Strips - Desert Wind Set (pdf)
- Erosion Word Strips - Land Slide Set (pdf)
- Erosion Word Strips- Wave Action Set (pdf)

Chart paper
Tape

Additional Resources

Books

- *A Grand Canyon Journey: Tracing Time in Stone*
, by Peter Anderson (1997); ISBN 0-531-20259-3
- *Planet Earth*
(Creative Discoveries Vol. 12, by Diane Costa de Beauregard (2001); ISBN 0-88682-953-4
- *The Seven Wonders of the Natural World*
(Wonders of the World), by Reg Cox and Neil Morris (2001); ISBN 0-7910-6049-7

Background for Teachers

It is assumed that *Introducing Text Structures in Science* 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 cause and effect texts in science. The principles taught in this lesson may be adapted for use in any of the Science Core Curriculum Objectives where cause and effect is emphasized. Look for the phrase "explain the reasons" in the Science Core Curriculum. This activity is intended to mesh with the activities about weathering and erosion in Standard II. Students will write about the causes and effects of a simple Earth process. The geologic processes of Earth are the result of forces within Earth and on the surface of Earth. The cause and effect structure is ideal to explain about these processes. This activity should be used after students have had several experiences learning about weathering and erosion. For information about weathering and erosion, consult the *Teacher Resource Book*.

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

Show a picture of a rock formation that shows evidence of erosion. If possible, show a poster from

one of Utah's national parks such as Arches, Bryce, Capital Reef, Canyonland, or Zion National Park. Discuss the processes that made the formation as it appears today.

Instructional Procedures

Brainstorm all the processes or forces that cause Earth's surface to be changed (e.g. ice, water, rain, wind, gravity, plants, animals, uplift, volcanic action, etc.). As an optional activity, review by reading a passage or showing a video clip about the effects of water, wind, and frost on the land.

Arrange the class in groups of three to four students. Give each group an envelope containing *Erosion Word Strips*. Challenge students to arrange the phrases in order in a cause and effect chain of events (or flow chart).

Have groups share their cause and effect charts. Correct any errors.

Use the charts as the organization structure for writing a paragraph. Depending on the experience of the class, you may write the paragraph as a class shared writing activity or have individual students write their own paragraphs.

Share the paragraphs with the class.

Extensions

Rather than giving students all of the word strips, use a list generated with the class. You may start with the final event such as a rockslide, an arch, a canyon, etc. Have students go backward to discover the actions that lead to the particular event. Then make a list of the actions (causes). Finally, write a paragraph that explains the causes and effects.

If students are very inexperienced writers you may teach this activity in a small guided reading or writing group with more teacher scaffolding. You may want to model the writing process and write the paragraph thinking aloud as you compose the writing.

As students become experienced with organizing cause and effect writing, have them make their own cause and effect charts based on experience or reading and write paragraphs from these charts.

Look for cause and effect structures in other fifth grade science core standards. For example, consider the cause and effect in changes in the states of matter, the action of magnets, or the effects of parents' traits on their offspring.

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 cause and effect organization to write in social studies and other content areas to reinforce the text structure.

Assessment Plan

Use informal assessment strategies to determine if students understand this text structure.

Use the Science Writing Rubric. Adapt as necessary for cause and effect writing.

Authors

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