

# Teaching Resource Fluent Titles



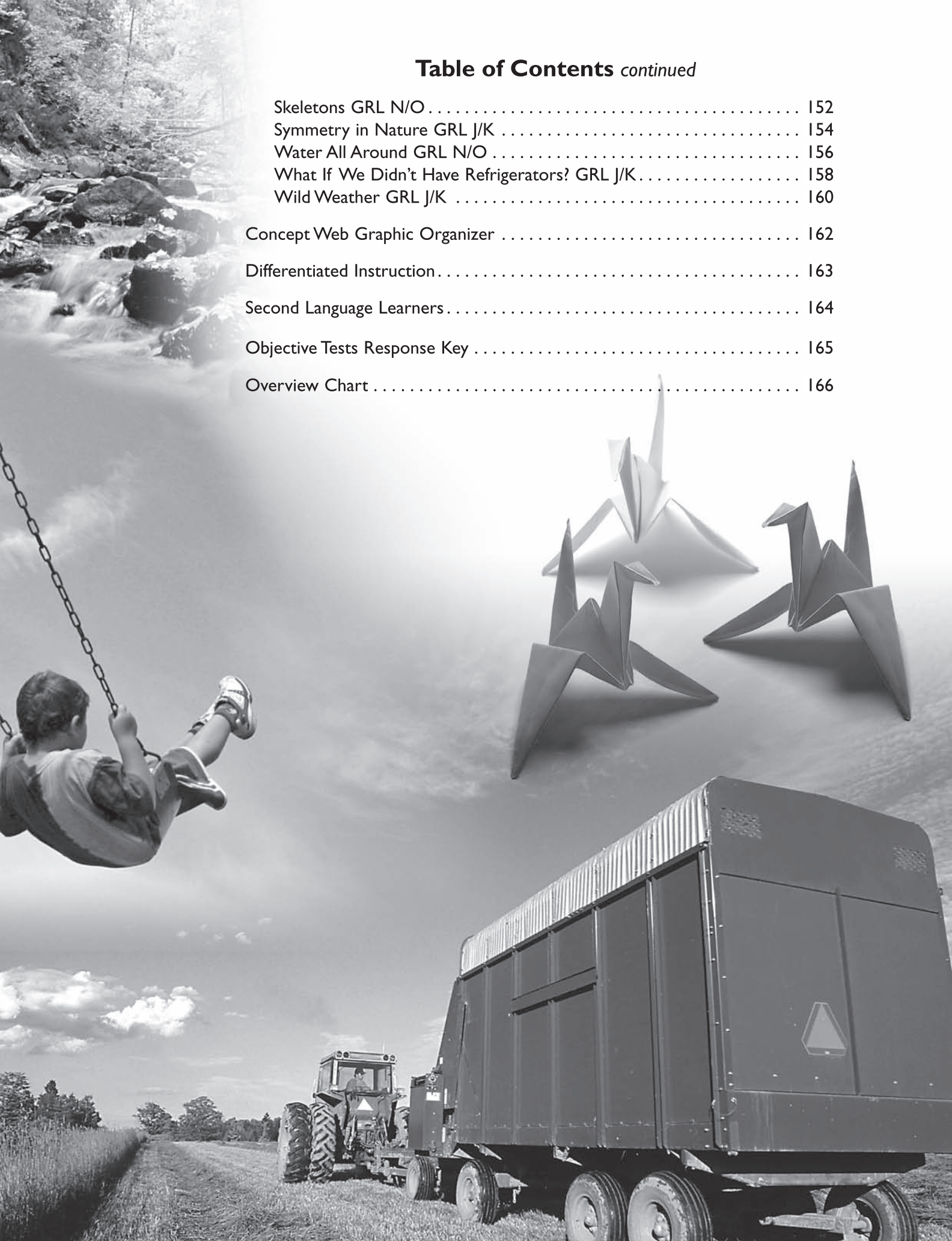
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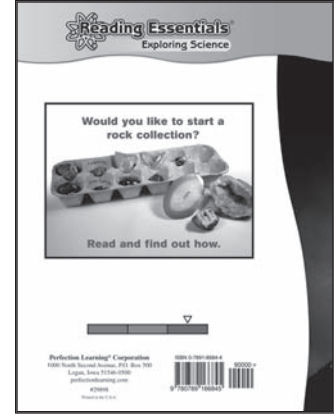
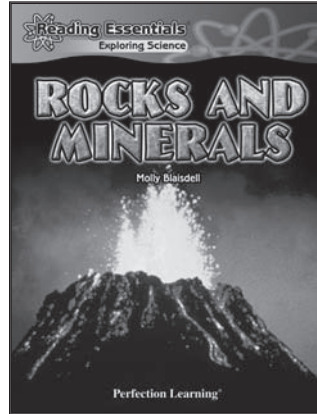
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# Rocks and Minerals

by Molly Blaisdell



## Literacy Essentials

### Fluent

**Guided Reading Level:** L/M

**Early Intervention Level:** 20

**Word Count:** 676

**Content-Area Vocabulary:** conduct, electricity, gem, identify, igneous, lava, magma, metal, metamorphic, mineral, nonmetals, pressure, rock, rock cycle, scepter, sediment, sedimentary, semimetals, silicon

### Language Arts Skills:

- recognizes parts of a book (TOC, photographs, diagrams, glossary, etc.)
- generates questions about the content topic
- uses a graphic organizer
- uses specific details and information from texts to answer questions
- recognizes parts of speech
- uses context clues to construct meaning
- applies content knowledge
- draws conclusions
- reads aloud with fluency and expression

## Content Essentials

**Text Type:** Description, Definition

**Text Features:** Glossary, Table of Contents, Index, Photographs, Labels, Diagrams, Chart, Sidebars

**National Science Education Standards**

**Earth/Space Science:** CONTENT STANDARD D

### Properties of Earth Materials

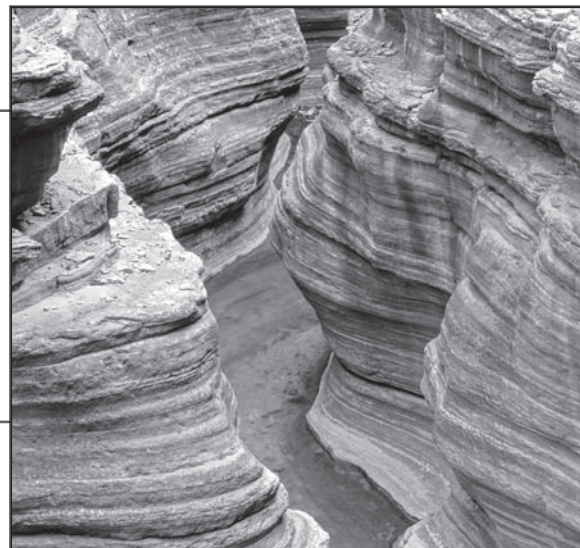
- Earth materials are solid rocks and soils, water, and the gases of the atmosphere. The varied materials have different physical and chemical properties, which make them useful in different ways, for example, as building materials, as sources of fuel, or for growing the plants we use as food. Earth materials provide many of the resources that humans use.

### Science Concepts

- Rocks are made of minerals.
- The three types of rocks (igneous, sedimentary, metamorphic) and how they are formed
- Description of the rock cycle
- Types of minerals and how they are identified

## *A Little Background*

In *Rocks and Minerals*, readers discover igneous, sedimentary, and metamorphic rocks and their role in the rock cycle. They also explore minerals and the properties that can be used to identify them. Sidebars, diagrams, and photographs round out the text.



# Exploring Rocks and Minerals

## Preview the Book

- Read aloud the title and author of the book. Have students skim through the book, previewing the Table of Contents, headings, photographs, charts, etc. Then ask them to predict what they will learn in the book.

### *Jump Start* (ELL & Struggling Readers)

Preteach content words. Introduce key words by arranging them in categories. The book will build an understanding of the content words, but introducing them in categories will provide helpful background knowledge. Use the Glossary to introduce the remaining words. Review how to find boldfaced words from the text in the Glossary.

Types of Rocks	Types of Minerals
igneous	metals
metamorphic	nonmetals
sedimentary	semimetals

## Let's Read Before Reading

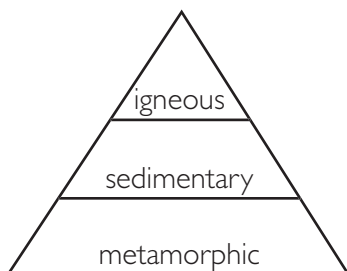
- Conduct a think-pair-share to consider the following questions:

*What is a rock? What is a mineral?*

Then ask students to generate questions they have about rocks and minerals. Post the list of questions in the classroom.

## During Reading

- Help students make a pyramid organizer to record facts about the three types of rocks. Draw a large triangle on a piece of paper. Divide the triangle into three sections for igneous, sedimentary, and metamorphic rocks. Ask students to write down key words or phrases about each type of rock as they read.
- After each chapter, refer to the students' list of before-reading questions and answer those that were addressed in the text. Help students locate answers to any remaining questions.



## After Reading Comprehension

- Share information recorded on the pyramids. Then discuss the rock cycle diagram on page 15. Ask students to clarify what the arrows show and what the labels mean.
- Review minerals by asking the following questions:

*What are the three types of minerals? (metals, semimetals, nonmetals)*

*Which type of mineral conducts electricity well? (metals)*

*Which type of mineral doesn't conduct electricity? (nonmetals)*

*Which type of mineral tends to form crystals? (nonmetals)*

*How many minerals are there? (more than 3000)*

*What six properties of minerals are used to identify them? (shape, surface, color, ability to draw, hardness, how they break)*

## Word Study

- **Name That Noun!** Write the following words on the board: *scientist, London, sand, Earth, nature, beauty, Africa, king, volcano, and collectors*. Explain that words that “name something” are called *nouns*. Nouns can be people, places, things, or ideas. Ask students to look at the words on the board and determine whether they are names of people, places, things, or ideas. Have students use definition clues to identify important content nouns on the reproducible.

## Think Like a Scientist

- Start a class rock collection. Invite each student to bring in a rock or mineral. Give students an opportunity to share their rocks and then display them in the classroom. You may also wish to classify the rocks according to size, texture, color, type of rock, etc., as an extension.
- *Mineral Investigation.* Use one of the rocks from your collection to model the use of the six questions on pages 17–19. Answer the questions together and try to identify the mineral. Discuss whether the mineral is a metal, nonmetal, or semimetal. If necessary, use additional sources on rocks and minerals. Make these sources available for the reproducible activity in which students will choose their own mineral to investigate.

## Fluency Practice

The text from *Rocks and Minerals* is provided on pages 148–149 of this resource for fluency practice.

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## Name That Noun!

The content words below are all nouns. They are names of things related to rocks and minerals. Read the clues for each word. Then write the correct noun on the line.

gem

lava

magma

metal

mineral

nonmetal

rock

sediment

1. I am a mineral that has been cut and polished. I am prized for my beauty.

Name that word: \_\_\_\_\_

2. I am melted rock that erupts from a volcano.

Name that word: \_\_\_\_\_

3. I am a mixture of two or more minerals. I make up the inside and outside of the Earth.

Name that word: \_\_\_\_\_

4. I am one of a group of similar minerals that conduct heat and electricity. Copper is an example of me.

Name that word: \_\_\_\_\_



*continued*

**Name That Noun!** *continued*

5. I am melted rock. When I cool inside the Earth, I form new rocks.

Name that word: \_\_\_\_\_

6. I am pieces of broken-down rocks. I settle in layers in riverbeds and oceans.

Name that word: \_\_\_\_\_

7. I make up rocks. There are more than 3000 different kinds of me.

Name that word: \_\_\_\_\_

8. I am one of a group of similar minerals that don't conduct electricity. I tend to form crystals.

Name that word: \_\_\_\_\_



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## Mineral Investigation

Choose a mineral to investigate. It may be one you already have at home or one you find outside. Answer the following questions to help you identify your mineral.

1. What is the shape of the mineral?

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2. What does the surface look like?

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3. What color is the mineral?

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4. Try drawing with your mineral on a piece of black construction paper (or white if your mineral is black). Can you see the mark? What color is it?

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5. How hard is the mineral? What things can it scratch? What things can scratch it?

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*continued*

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**Mineral Investigation** *continued*

6. Try breaking your mineral. If you can break it, how does it break? What shape do the pieces look like?

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7. Can you tell if your mineral is a metal, nonmetal, or semimetal? What would you guess it is? Why?

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8. Do you know what your mineral is? If you still don't know, try using books about rocks and minerals to identify it.

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# Objective Test

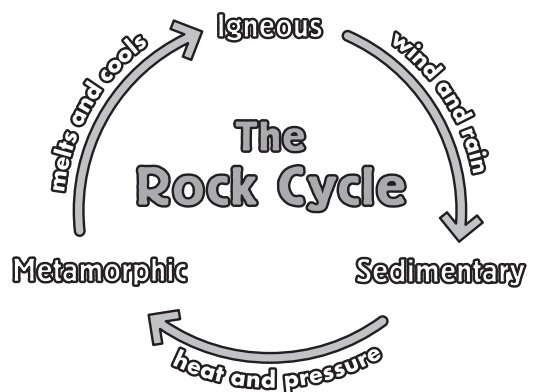
**Directions:** Match each word and its meaning.

- |                     |   |
|---------------------|---|
| _____ 1. magma      | a. steady force   |
| _____ 2. mineral    | b. substance on Earth that is not a plant or an animal                      |
| _____ 3. pressure   | c. solid material such as dirt and sand that settles at the bottom of water |
| _____ 4. rock cycle | d. melted rock inside the Earth   |
| _____ 5. sediment   | e. ongoing formation of new rocks   |

**Directions:** Choose the best answer.

6. Rocks are made of two or more
  - a. gems.
  - b. minerals.
  - c. sediments.
7. Melted rock that erupts from a volcano is called
  - a. lava.
  - b. sediment.
  - c. silicon.
8. Layers of broken-down rocks press together to become
  - a. sedimentary rock.
  - b. igneous rock.
  - c. metamorphic rock.

9.



According to the diagram of the rock cycle, what causes sedimentary rock to become metamorphic rock?

- a. wind and rain
  - b. heat and pressure
  - c. melting and cooling
10. A bendable mineral that conducts electricity is a
- a. nonmetal.
  - b. semimetal.
  - c. metal.