

# MINERALS IN MY LIFE

Grade 1 (may be adapted for grades K-3)

Stage 1 – Desired Results	
<b>Goals</b> Students learn the importance of rocks and minerals and how we use them to enrich our lives.	
<b>Understandings</b> <i>Students will understand that:</i> <ul style="list-style-type: none"><li>Minerals form the basis for life.</li><li>We use minerals in many ways every day.</li><li>Minerals come from the earth.</li><li>Some minerals may be recycled.</li><li>Without minerals, our lives would be very different.</li></ul>	<b>Essential Questions</b> <i>Students will consider such questions as:</i> <ul style="list-style-type: none"><li>What are minerals and why are they important to us?</li><li>How do we use minerals?</li><li>How does a rock that contains a mineral become something we can use?</li><li>What happens to a mineral after I have used it?</li><li>What would our lives be like if we did not have minerals to use?</li></ul>
<b>Knowledge</b> <i>Students will know:</i> <ul style="list-style-type: none"><li>Six different minerals (copper, gypsum, molybdenum, fluorite, salt/halite, quartz) and how they are used in our daily lives.</li><li>A mineral may have to be processed before it can be of use to us.</li></ul>	<b>Skills</b> <i>Students will be able to:</i> <ul style="list-style-type: none"><li>Define/explain what a mineral is.</li><li>Identify six mineral samples by their characteristics.</li><li>Give an example of one use for each mineral.</li><li>Analyze how their lives would be different if a given mineral did not exist.</li></ul>
Stage 2 – Assessment Evidence	
<b>Performance Tasks</b> <i>Students will complete:</i> <ul style="list-style-type: none"><li>Learning journal entries as assigned.</li><li>One of the following:<ul style="list-style-type: none"><li>A one-page report about a mineral of the student's choice.</li><li>An information sheet or poster about one mineral, to be used as a classroom reference.</li></ul></li></ul>	<b>Other Evidence</b> <i>Students will:</i> <ul style="list-style-type: none"><li>Be on task with questions and related discussion.</li><li>Use grade-appropriate geological terms when identifying and discussing minerals.</li></ul>

## Stage 3 – Action Plan

### Materials Preparation

- Six mineral specimens (copper, gypsum, molybdenum, fluorite, salt/halite, quartz)
- Products or pictures of items made from these minerals. (For examples of how minerals are used in our lives, go to [www.mii.org](http://www.mii.org).)
- Magnifying glasses (one for every student)
- Resource and trade books on rocks and minerals
- Student journals or science notebooks for recording observations
- Poster board (one for each group of four students)
- Crayons, markers, scissors (one for each group of four students)

### Learning Activities

#### One week prior to minerals unit

Each day, place one or two mineral samples in a conspicuous place in the classroom. If possible, bring samples of finished household products made from each sample to help students begin to make connections.

You may wish to provide pictures of products (cut out from magazines or printed from the internet) and encourage students to match a household product to the mineral from which they think it came.

Provide magnifying glasses and books/resources to allow students to begin to explore the samples.

Allow students to touch the samples and write down any questions they might have about the sample(s).

Encourage them to think about these samples using prompts such as:

- *You probably have used something made from this item today. Can you think of what you have used that may have come from a mineral like this?*
- *What special things do you notice about this sample?*
- *If you could describe this mineral sample to your grandmother during a telephone call, what would you tell her about it?*

#### Launching the unit

Give every student a journal for writing about his/her observations or set aside pages in a science or writing notebook. Have students write a response to one of the prompts you asked the previous week.

### Additional Learning Activities

#### Classifying

Have groups of four students work together to classify the samples in at least two different ways. Discuss what observations they made that led them to each classification. Compare the results from each group. *How many different ways to classify these samples did the class create? What seems to be the “favorite” way of classifying them? Do you think geologists (scientists who study rocks and minerals) classify them in the same way? Why or why not?*

Students should write their favorite method for classifying these samples in their individual journals or notebooks and should include at least two sentences explaining why. Ask them to illustrate and label the samples using descriptive words (bumpy, rough, smooth, shiny, etc.)

## **How we use resources**

Ask students to compare the mineral samples with household item made from those minerals. Ask them to guess what item came from each sample. *Do they look the same? How are they alike? Different? How can a rock or mineral change and become a (name the item – e.g., copper pipe)? Can you think of anything else we use that may have been mined?*

Students should record one observation about each sample in their journal or notebook.

## **Classroom posters**

Small groups of 4-5 students each are assigned one of the samples. Each group should work together to create a small poster that includes a drawing or sketch of the sample (in color), the scientific name and any common names by which the sample may be known and uses for the mineral. Posters can be displayed with their respective sample for a parent evening or school science fair.

## **My life without (name one of the mineral samples)**

Each student will write about what his/her life would be like without one of the minerals. (Students may select their sample of choice or the teacher may assign one to each student.) Writing may be poetry or prose but should include how we currently use the mineral in our lives and what specific things might change if we did not have the mineral.

## **Arizona Academic Standards Addressed**

### **Science**

#### **Strand 1: Inquiry Process**

Concept 1: Observations, Questions, and Hypotheses

Concept 2: Scientific Testing (Investigating and Modeling).

Concept 3: Analysis and Conclusions

Concept 4: Communication

#### **Strand 6: Earth and Space Science**

Concept 1: Properties of Earth Materials

### **Writing**

#### **Strand 1: Writing Process**

Concept 1: Prewriting

#### **Strand 2: Writing Elements**

Concept 4: Word Choice

Concept 5: Sentence Fluency.

Concept 6: Conventions

#### **Strand 3: Writing Applications**

Concept 2: Expository

Concept 6: Research

### **Reading**

#### **Strand 1: Reading Processes**

Concept 4: Vocabulary

#### **Strand 3: Comprehending Informational text**

Concept 1: Expository Text

# **National Science Education Standards Addressed**

## **Unifying Concepts and Processes**

Systems, order, and organization

Form and function

## **Science as Inquiry**

Abilities necessary to do scientific inquiry

Understandings about scientific inquiry

## **Earth and Space Science**

Properties of earth materials

## **Science and Technology**

Abilities to distinguish between natural objects and objects made by humans

## **Science in Personal and Social Perspectives**

Types of resources