

Rocks and Minerals

Grade-Level Expectations

The exercises in these instructional tasks address content related to the following science grade-level expectations:

- ESS-E-A1, ESS-E-A5** Recognize and describe that rock is composed of different combinations of minerals (GLE 45)
- ESS-E-A5** Compare and group common rocks according to their characteristics (i.e., igneous, metamorphic, sedimentary) (GLE 50)

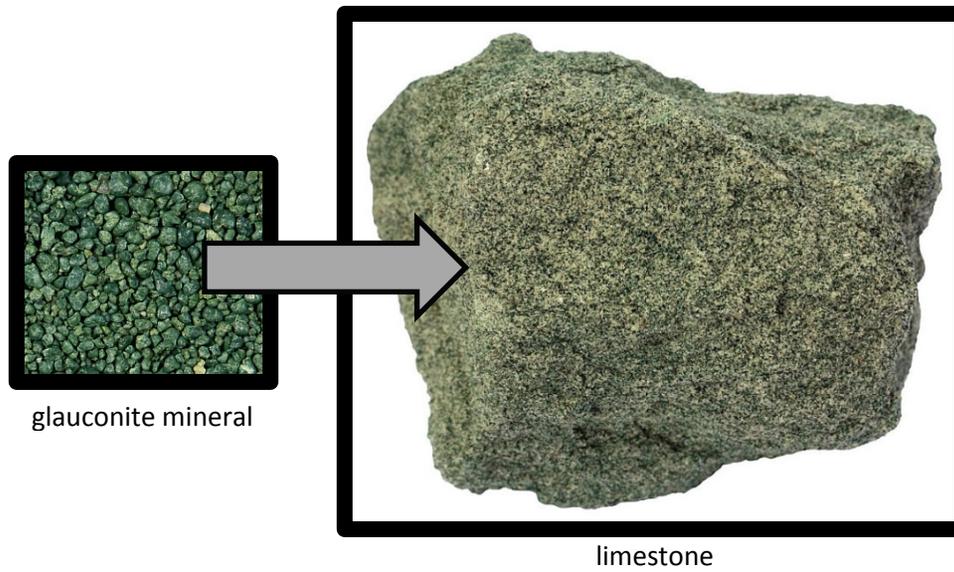
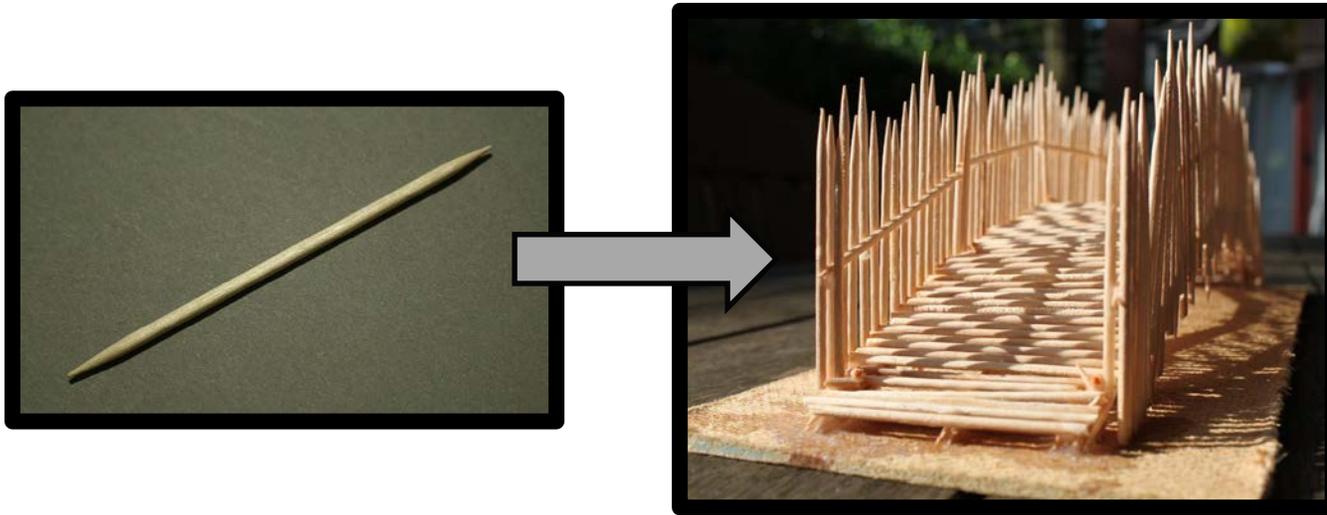
Contents

- These instructional tasks contain a set of document- or resource-based exercises about *rocks and minerals*.
- Teachers may choose to use or modify the tasks as part of an instructional lesson or as a formative or summative assessment.
- The printable student version excludes teacher directions.

	Objective(s)
<u>Scaffolding Exercise 1</u>	<ul style="list-style-type: none"> · Describe the relationship between minerals and rocks
<u>Scaffolding Exercise 2</u>	<ul style="list-style-type: none"> · Read and analyze sources to gather background information about types of rocks
<u>Scaffolding Exercise 3</u>	<ul style="list-style-type: none"> · Determine an area where certain types of rocks may be found
<u>Culminating Exercise</u>	<ul style="list-style-type: none"> · Classify rocks based on their physical appearance · Compare common and varying characteristics of rocks
<u>Scoring Rubric</u>	
<u>Scoring Notes</u>	
<u>Printable Student Version</u>	

Scaffolding Exercise 1

Teacher Directions: Have students work with a partner to describe the relationship between the illustrations below.



Scaffolding Exercise 2

Teacher Directions: Have students visit <http://www.sciencekids.co.nz/sciencefacts/earth/rocksandminerals.html> to research types of rocks and fill in the following chart.

	Igneous	Sedimentary	Metamorphic
How it is formed...			
Where it is formed...			
Other interesting facts...			
Examples...			

Scaffolding Exercise 3

Teacher Directions: Have students respond to the following prompt.

Sam took a trip around the United States and gathered rocks from a few of his favorite places. Sam's stops are shown on the map below.



Custer National Forest

Niagara Falls

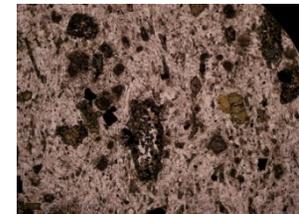


Grand Canyon



Hawaii Volcanoes National Park

Sam's Rock



Sam picked up the rock shown in the picture on one of his stops.

Determine which of Sam's stops on the map above shows where this rock was found. Use evidence from the maps and/or pictures to support your answer.

Sam picked up 5 rocks when he went on a walk in the park near his house. He took a picture of each rock.



A



B



C



D



E

- Key
A: Basalt
B: Conglomerate
C: Pumice
D: Sandstone
E: Breccia

Classify the rocks by type.

Igneous _____

Sedimentary _____

Compare igneous and sedimentary rocks. Include at least one similarity and one difference.

Rubric	
Key Elements: A. Response correctly classifies all five rocks. B. Response correctly compares igneous and sedimentary rocks by providing at least one similarity and at least one difference between the two types of rocks.	
2 Points	Response includes both key elements. Response contains no scientific errors.
1 Point	Response includes one of the two key elements. Response may include scientific errors.

A well-developed response should demonstrate a correct and thorough understanding of rocks. The response should be clear, include specific details, show a higher level of reasoning skills where appropriate, and address the key elements of the task.

Scoring Notes

Student responses will not be an exact imitation of the responses below. These are given only as examples.

- A.** Response correctly classifies all 5 rocks.

Igneous: A and C

Sedimentary: B, D, and E

- B.** Response correctly compares igneous and sedimentary rocks by providing at least one similarity and at least one difference between the two types of rocks.

Similarities:

Igneous and sedimentary rocks are both made of minerals.

Igneous and sedimentary rocks are both part of the rock cycle.

Igneous and sedimentary rocks are both found in nature.

Differences:

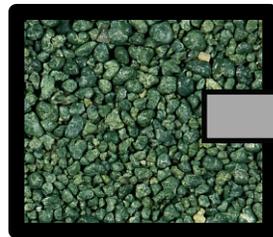
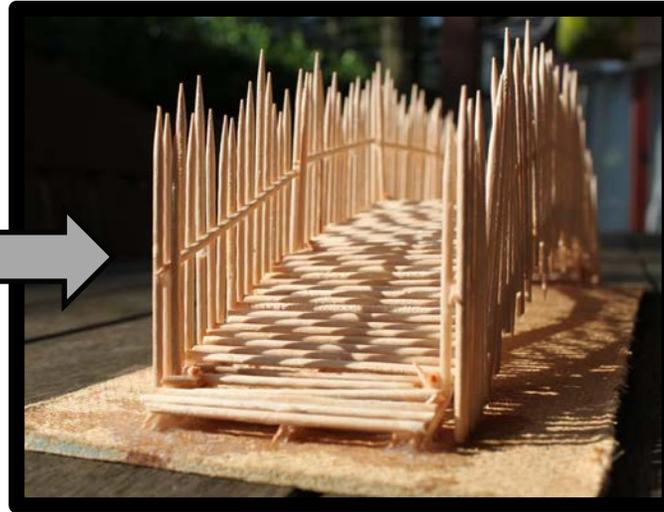
Igneous rocks are made when magma or lava cools. Sedimentary rocks are made when small pieces of sand or other rocks are pressed together.

Igneous rocks are often made inside the Earth's layers but sedimentary rocks are formed on the surface of the Earth.

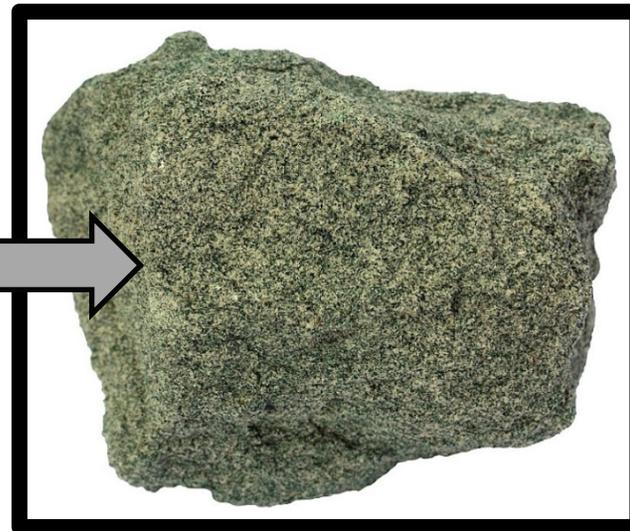
Igneous rocks can sometimes be formed quickly, but sedimentary rocks always take a long period of time to form.

**Printable
Student Version**

Work with a partner to describe the relationship between the illustrations below.



glauconite mineral



limestone

Visit <http://www.sciencekids.co.nz/sciencefacts/earth/rocksandminerals.html> to research types of rocks and fill in the following chart.

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Where it is formed...			
Other interesting facts...			
Examples...			

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