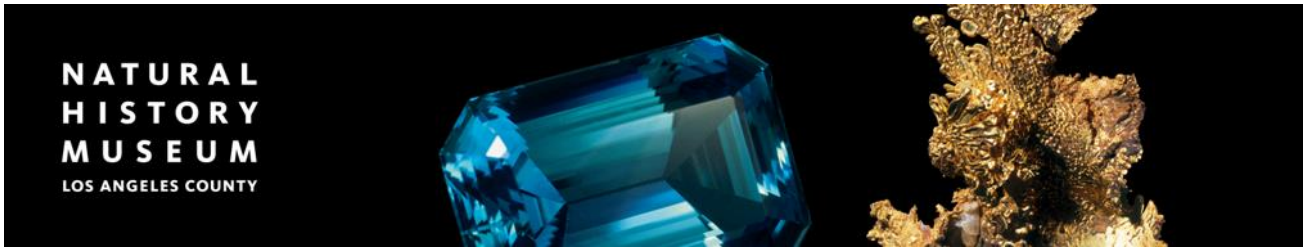


Rocks & Minerals: Guided Discovery

Kindergarten

Duration
Pre-Visit: 10-15 minutes

Visit: 30 minutes

Location
Classroom and Gem & Mineral Hall

Supplies
- KWL chart
- Writing tool
- Clipboard (optional)
- Landscape picture

Standards
NGSS

K-2ETS1-1

CCSS

SL.1.a.b, SL.2, SL.6

CA State

Science K.3.a, 4.a.b.d.e.

Vocabulary
Land

Rock

Compose

Observation

Student Work

Concepts

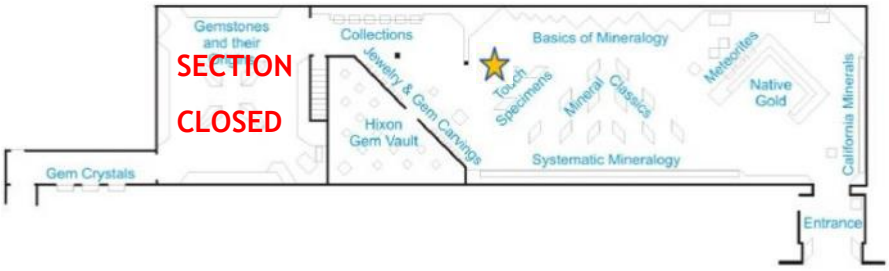
- Rocks are one thing that composes land.
- Land is composed of many different kinds of rocks.

Objectives

- Rocks are one thing that composes land.
- Students will explore the diversity of rocks through observation.

Outline

1. Identify land and brainstorm its components.
2. Discuss what students Know, and Want to Know
3. Observe and make conclusions
4. Reflect using Know-Want to Know-Learned chart (KW/KWL).



Pre-Visit

This is easiest to do in the classroom or outside, but it could take place the bus or in the Museum before you enter the Gem and Mineral Hall.

Gather students around a landscape picture and explain (or review) with them that our earth is made up of, or composed, of three major things: water, air and land. Ask students to point out each component in the picture as you list them. Explain that today we are just going to look at land. Ask them, what might be some things that make up land? Help the students list as many possibilities as the students can come up with (trees, rocks, dirt, plants, mountains, valleys, etc…).

Explain that one of the many things that make up land is rocks. Ask the students, what are some things that we know about rocks? As student come up with ideas, write them down in the 'Know' section of the KWL chart (see page 4). Don't worry about students coming up with correct answers, this is all about them thinking and coming up with as many ideas as possible.

When they are finished, quickly review the list. Next, ask the students, what are some things we would like to know about rocks? Like before, write down their questions underneath the 'Want to Know' section.

Thank them for all their good questions, and explain that we are going to have some time during our trip to the Natural History Museum to investigate a couple of these questions.

Based on your knowledge of the students and the activity, carefully choose a couple questions from the list to explore at the Museum. If necessary, transfer information from a board or chart to a portable version like below, so you can use it at the museum.

Museum Visit

Take students to the Gem and Mineral Hall, and bring along a sheet of the KWL chart and review the KW items with them before entering the Gem and Mineral Hall. Especially with a focus on the questions they asked.

Take students to the back of the hall to the touchable specimens in the back of the room. Have the students walk around and observe all the touchable specimens. Encourage students to use their senses - they are welcome to look at, touch, smell or listen to the rocks (however discourage tasting in this instance. While none of the rocks are toxic, they have been touched by many people!).

While they are making observations, ask them guided questions:

- What do they notice about the rocks?
- What colors or shapes are they?
- How do they feel?
- What about them is the same?
- What makes them different?

Once students have finished exploring, find a comfortable spot near the touchable specimens to sit together and reflect, using the KWL chart as a reference. Review with the students some of the observations they made during the activity. Write down these things under the Learned section. Some discussion questions might include:

- Can any of the things we noticed, or observations, help answer our questions about rocks?
- How did they help/what do they tell us?
- What more did we learn?

Thank students for their observations and thoughts, and encourage them to further explore the Gem and Mineral Hall.

Variations & Extensions

- At the museum, have students describe and draw a specimen in their journals or notebooks as part of observation.

- At the museum, tie in observations with a math objectives. For example you could have them take measurements of length and width and note which specimens are shorter/longer, taller/ shorter. Describe shapes of rock using geometric terminology, or classify/sort the rocks based on the physical attributes that were noticed.

- Take some of the more difficult questions that are harder to answer through preliminary observation, and continue to investigate rocks to try and find the answers. For example, order rock and mineral kits and have students continue exploring through active experimentation; such as sponging water over them, scratching them on tile or glass; look at them through magnifying glasses or even trying to smash them (with careful supervision and safety wear).

- Talk about where or how to look for more information and build a lesson about research.

Guided Discovery

What do we **know?**	*What do we want to* **want to know?**	*What did we* **learn?**