

Rocks and Minerals

In this lesson students will learn about the difference between rocks and minerals, as well as understand the steps in the rock cycle. This is a hands-on lesson, designed with inquiry science in mind. It teaches grades 2-5 about changes in the earth, focusing on types of rocks.

After this lesson, students will be able to:

- List the three types of rocks.
- Compare and contrast rocks and minerals using a Venn diagram.
- Write the steps of the rock cycle.

Prior Knowledge: No extended prior knowledge is needed for this lesson. Some knowledge of geographical features such as mountains, volcanoes, etc. would be helpful in talking about the rock cycle.

Materials:

- Classroom rock collection (such as our [Deluxe Rocks & Minerals Collection](#) or the [Washington School Rock Collection](#))
- Projector—to show the Rock Cycle chart (see the second to last page)
- Rock Cycle worksheet (see the last page)
- Poster board (half sheet for each student) and markers
- Rocks and minerals [field guide](#)
- Whiteboard and markers (or use a chalkboard, SmartBoard, etc.)

Lesson Model: 5Es

ENGAGE: To get your class excited about rocks, bring a rock collection to class. Show them the wide variety of specimens, pointing out the differences in color, shape, and texture. You can also pass out different kinds of rocks for each student to study closer. Be sure to collect the rocks back in the box before moving on to the next part of the lesson.

EXPLORE: Ask your class if they can think of places to find rocks. They might say in the park or in their driveway. Talk about how mountains are made of rock and so are volcanoes. Ask for your students to raise their hands and say the name of a place that contains rocks. Some more examples are a cave, tunnel, riverbed, or beach. There are many different kinds of rocks! The rock in your mother's ring is definitely not the same as the rock you found in your backyard. Have each child draw a picture of a rock and describe where the rock came from. Explain that you will be learning more about how rocks are made next.

EXPLAIN: Show the Rock Cycle chart, using a slide projector or slideshow presentation on the computer. Make sure that every child can see the chart, moving some nearer to the front if need be. After reading each step on the chart, ask for a volunteer. Tell the volunteer that they are going to take a tour of the Rock Cycle! Have the volunteer hold up his or her drawing of a rock. What kind of rock did they choose? Start the Rock Cycle tour off at one of three types of rock—metamorphic, sedimentary, or igneous—depending on which rock the student drew a picture of. *Note:* If it was a picture of a pebble or stone found in the backyard or driveway, you can guess that it is a metamorphic rock. Go through the tour, traveling until the rock has changed forms twice (for example, it started out as sedimentary, and changed into a metamorphic then igneous rock). Show samples from the rock collection as you talk about the tour, to give students more visuals. You can also pass out different kinds of rocks for students to hold as you talk.

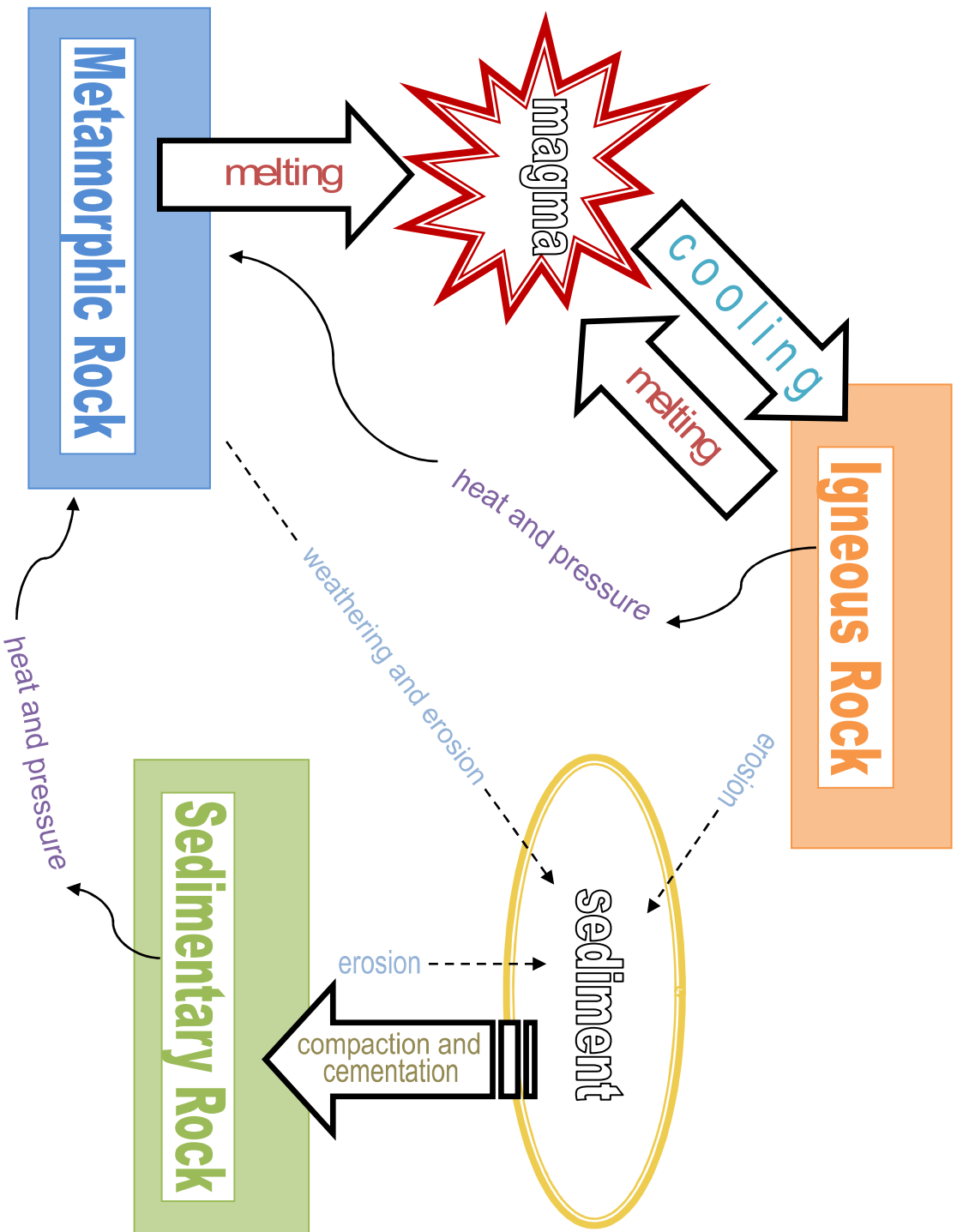
ELABORATE: What is the difference between rocks and minerals? Have students choose one type of rock (quartz, gneiss, etc.) and make a poster about the specimen they chose. They must include this information: 1) the name of the rock or mineral, 2) the category (if any) the rock falls into on the rock cycle, 3) where it is found, 4) if it's common or rare. Encourage students to research their rock using field guides, or an internet source. You can also have students decorate their posters using markers, stickers, handmade illustrations, or pictures printed from a computer, or cut out of a magazine. Hang the posters together to make a great big rock collection inside the classroom! When the display is finished, invite your students to read each of the posters and find which ones are rocks and which are minerals. Draw a Venn diagram (two circles that overlap slightly) on the whiteboard. Label one side 'Minerals' and the other side 'Rocks.' Have students come up and write details about rocks and minerals. To contrast, they can write in the parts of the circles that don't overlap. To compare, they can write something in the part of the circles that overlaps.

EVALUATE: Remind students what they learned about the rock cycle and how each of the three types of rock can be changed into another type. You may want to show the colorful Rock Cycle chart again, so all students can see. Hand out the rock cycle worksheets and take down the chart, so students will have to rely on memory. Have each student work individually on filling in the rock cycle worksheet and turn in the completed assignment for you to check their work. Students could also color their worksheets if they like.

Accommodations for Diversity: If students will struggle to fill in the rock cycle worksheet by themselves, divide the class into small groups of 3-4 students. Each individual will be assessed based on their group's performance, not on individual performance.. If a student struggles with writing, they may forego the poster project and choose instead to do a short oral presentation on the rock they have chosen. Make sure their presentation includes visuals, so it meets similar requirements to the poster project.

Ideas for Assessment: This lesson has several components which can be used to assess student learning. To see how students have progressed in their understanding, compare what they wrote about a rock in the Explain section and what they wrote about a rock in the Elaborate section. You can design a rubric for grading the poster based on these criteria: 1. Appealing use of pictures and colors. 2. Addressed all four questions (name, category, location, common/rare). 3. Adequate grammar and spelling. The rock cycle worksheet should be used to assess whether you need to go over the rock cycle again or not. Were the majority of students confused, or could they successfully fill in the blanks to complete the worksheet?

The Rock Cycle



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