

Unit 3: Connecting Places, Connecting People

WEEK 8 Lesson 2

**Science and Engineering: Quadrat Study 6**  
Rocks in our Quadrats

This lesson connects to and continues the year-long Quadrat Study.

<b>Big Idea</b>	Every place has many stories.
<b>S &amp; E Guiding Question</b>	What can we observe in one small area over time?
<b>Content Objective</b>	I can record observations and make connections among the rocks I observe in my quadrat. (2-PS1-3, Practice 4)
<b>Language Objective</b>	I can describe rocks in speaking and writing. (L.6.2.a, W.2.2.a)
<b>Vocabulary</b>	<b>distribution:</b> the way something is shared in a group or spread over an area <b>isolate:</b> to set apart <b>quadrat:</b> a small area of habitat, usually selected to collect data about the distribution of plants or animals
<b>Materials and Preparation</b>	<p>This lesson occurs outdoors. Review children’s entries in Science and Engineering packets from the previous quadrat study. Select a few that show different and informative observations.</p> <ul style="list-style-type: none"><li>● hula hoops or equivalent lengths of rope or twine knotted to enclose a circle, one for each child</li><li>● Science and Engineering packets</li><li>● writing and drawing tools, in one or more containers to carry outdoors</li><li>● chart paper and markers</li><li>● hand lenses</li><li>● 3-5 rocks of the same kind, collected from the schoolyard and washed off</li><li>● one large, sturdy container, for carrying rocks children collect</li></ul>

<p><b>Opening</b> 12 minutes</p>	<p><i>Today we're going back out to the schoolyard to continue our quadrat study. Remember, in a <b>quadrat study</b> scientists study the <b>distribution</b> of objects or organisms in an area—or how many of something there are.</i></p> <p><i>When we last observed the quadrats, you observed solid objects in your quadrats. Let's take a look at some of your observations.</i></p> <p>Show the selected examples. Use a simplified Science Circle protocol to guide the conversation.</p> <p><i>What do you notice about some of the objects these scientists found and recorded?</i></p> <p><i>Today you are going to continue to investigate solid objects in your quadrat. Specifically, you are going to take a closer look at the rocks in your quadrat. I was outside earlier, and I noticed that there were a few rocks on the ground that looked alike.</i></p> <p>Show the rocks collected earlier.</p> <p><i>I wondered if they might have been a part of the same rock at some point. So I washed them off and used a hand lens to look at them even closer.</i></p> <p>Point out similarities among the rocks.</p> <p><i>As you revisit your quadrats today, pay close attention to any rocks you find there. Individually and as a group, we will try to see if we notice any patterns in the rocks in our schoolyard.</i></p> <p>Distribute packets. Take the children out to the schoolyard with quadrat markers (hula hoops/ropes) and writing and drawing tools. Bring the container for collecting rocks.</p> <p>Direct children to return to their same spots.</p>
<p><b>Investigation</b> 16 minutes</p>	<p>Once outside, offer reminders as needed for placing quadrat markers on the ground.</p> <p><i>Now that you are at your quadrat, find and choose one rock to write and draw about. Use your hand lens to look closely at that rock, and draw a detailed picture of it, magnified. Look around your quadrat to see if there are other rocks that look and feel similar to the one you chose. If so, pick some up and look at all of them together.</i></p> <p>As children work, circulate to support their investigation and representation. Ask the following questions.</p> <ul style="list-style-type: none"> <li>● <i>What do you notice?</i></li> </ul>

	<ul style="list-style-type: none"> <li>● <i>Could they all be smaller pieces of the same rock?</i></li> <li>● <i>Are they naturally occurring, or were they placed there by people?</i></li> <li>● <i>If they were placed there by people, why?</i></li> </ul> <p>Identify a few children to share their work with the whole group. Bring the children back indoors.</p>
<b>Discussion</b> 2 minutes	Set aside all materials except children’s packets and rocks. Ask identified children to share and describe their work. Encourage them to use precise vocabulary.
<b>Closing</b>	<p style="text-align: center;"><i>What can we observe about rocks in our quadrats? What makes us think that a smaller rock might be a piece of a larger rock?</i></p> <p>Invite children to describe the rocks they found, encouraging them to use the “Me, too” signal to make connections with each other.</p> <p>Place the rock collection in the Discovery Studio for further investigation.</p>
<b>Standards and Practices</b>	<p><b>L.6.2.a</b> Use words and phrases acquired through conversations, reading, and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy, that makes me happy).</p> <p><b>W.2.2.a</b> With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.</p> <p><b>2-PS1-1.</b> Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p>
<b>Ongoing assessment</b>	<p>As children work to record their observations, take note of their approach to the task, particular interests, and how they might be best supported with ongoing outdoor learning.</p> <p>Review children’s packets.</p> <p style="padding-left: 40px;">What details do children include in their rock observations? How do children describe the origin of the rocks they observe? Have they included any labels or other notations?</p> <p>This is a year-long investigation. As children continue this work, look for greater details in their drawing and writing and increasingly meaningful connections to current unit content.</p>