

Review of Rocks/Minerals and Fossils (per instruction of mentor teacher)

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Estimated Time: 1 hr. 40 min.

Content Area(s): Science

Grade Level(s): 4th

Number of Students: 30

Stage 1- Desired Results

Established Goals: REVIEW and INTRODUCTION INTO SOIL

Standard 3: Students will **explain** the basic properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil.

Objective 1 Compare and contrast basic properties of minerals and rocks.

Standard 4: Students will **analyze** how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.

Objective 1 Summarize Utah fossils and explain how they were formed.

Objective 2 Students will **point out** how fossils can be used to make inferences about past life, climate, geology, and environments.

Understanding	Essential Questions
<p>Students will continue their understanding of the development and relationship between rocks, minerals, and fossils, and connect their involvement in our every day life.</p>	<p>Review</p> <ul style="list-style-type: none"> • What are the properties of sedimentary, igneous, and metamorphic rocks? • How are fossils formed? • What fossils are indigenous to Utah? • How do rocks and minerals affect my life? (Real life connection)

Stage 2-Assessment Evidence

Objectives	Contextual Factors	Assessments
<p>Student will be able to:</p> <ol style="list-style-type: none"> 1. Summarize the properties of sedimentary, igneous, and metamorphic rocks and explain how fossils are formed. 2. Compare and contrast the properties of sedimentary, igneous, and metamorphic rocks. (Standard3, Objective 1) 3. Explain how fossils are formed and how they make inference about past life, climate, geology, and environments, and where fossils can be found locally and in the State of Utah. (Standard 4, Objective 1 & 2) 4. Discover how rocks and minerals are found in many materials around us and how they affect our lives. (Real-life connection) 	<ul style="list-style-type: none"> • 3-Students need extra time and scaffolding to complete tasks. • 3-Students have a hard time keeping on task-due to distractions. • 1-Student has physical limitations, but is able to process information, but extra time is needed. • 4-Students show gifted qualities. • Ability Levels: Class has a closely related range of academic skills/abilities from low, moderate, and high. • Class does well with class cooperative activities and engagement, but need some management to keep focused. • Classroom management and procedures are well known/performed by students-minimal reminding 	<p>Students will:</p> <p>Pre-assessment-Students will be given a Quick Write to summarize their knowledge of the properties of sedimentary, igneous, and metamorphic rocks; as well as briefly explain how fossils are formed.</p> <ol style="list-style-type: none"> 1. Classify and compare/contrast the properties of sedimentary, igneous, and metamorphic rocks using the class rock collection and organizing information on a foldable. (Formative Assessment) 2. Analyze the formation of fossils and compare the formations in each type of rock (sedimentary, igneous, and metamorphic) explain how fossils make inference about past life, climate, geology, and environments and where fossils can be found locally and in the State of Utah. (Media followed by a Verbal Assessment-Review no Summative Assessment) <p>Post-assessment-Students will be given the Quick Write Pre-assessment again to see if their knowledge of sedimentary, igneous, and metamorphic rocks, and explain the process of how fossils are formed to see if their knowledge has improved.</p>

Stage 3-Learning Plan

Procedures	Time	Materials Resources	Accommodations/ Differentiation/ SIOP
<p>1. Pre-Assessment-Students will be given a Quick Write worksheet to assess their previous knowledge about the different types of rock; sedimentary, igneous, and metamorphic, and to check their understanding of how fossils are formed.</p>	Worksheet: 5 Min.	Pre-Assessment Quick Write	For the students needing extra time allow them to begin beforehand at the back kidney table.
<p>2. Students will be shown the class collection of sedimentary, igneous, and metamorphic rocks and will create a list of properties of each rock on a foldable. Each description will have the certain rocks classification as well as a compare/contrast analysis. What are the properties of sedimentary, igneous, and metamorphic rocks?</p>	15 Min	Foldable	(List previously prepared to pair – up students) Students will be paired up with a partner to help each other as we make the foldable together. Students who need more help will be paired up with a student who is capable of instructing and aiding the other.
<p>3. Students will be shown a video clip (Bill Nye the Science Guy: How Fossils are Formed) How are fossils formed? Students will analyze the formation of fossils and compare the formations in each type of rock (sedimentary, igneous, and metamorphic) and explain how fossils make inference about past life, climate, geology, and environments. Class will discuss how fossils are formed and how they help us gain knowledge about past life, climate, geology, and our local environments. Discuss what fossils have been found locally and what they infer about past life here in town. What fossils are indigenous to Utah? Have students do a <u>Think-Pair-Share</u> and discuss how fossils are formed and compare and contrast their formation for each type of rock. <u>Verbal Assessment</u></p>	Video 28 Min	Video: Bill Nye: How Fossils are Formed.	During video, pause and ask questions to keep students interest and focus.
<p>4. Students will discover how rocks and minerals are found in many materials around us and how they affect our lives. (Real-life connection) Students will also complete a graphic organizer "Rock Mind Map" to show what objects they know contain rocks and minerals and will also explain what one is of most importance to them. (i.e. rocks and minerals help form concrete, windows, pencils, some engine parts, electrical wiring, etc.) How do rocks and minerals affect my life?</p>	Discussion and Think-Pair-Share 20 Min.	15 Min.	Rock Mind Map Graphic Organizer
			Students will work individually on this graphic organizer, but those who need extra time and those who need additional help staying focused will be partnered up with a higher level student to help keep their focus and will be given the opportunity to share ideas of which objects affect their lives.

<p>Post-Assessment--Students will be given the Quick Write Pre-assessment again to see if their knowledge of sedimentary, igneous, and metamorphic rocks, and explain the process of how fossils are formed to see if their knowledge has improved.</p> <p>Closure</p> <p>❖ Closure: Students will discuss their answers of their real life application information from the graphic organizer with a partner and tell what use of rocks is the most important to them-using the strategy of Timed-Pair-Share.(one partner shares while the other just listens, then the roles are switched)</p>	<p>10 Min.</p>	<p>Post-Assessment Quick Write</p>	<p>Additional time will be given to those students how need more.</p>
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Plans for involving parents or families:

Students will show their parents/guardian(s) their "Rock Mind Map" organizer and explain to them the real life connections they made and how the use of rocks are found in everyday objects. And see if they can add to their list by finding objects in their home, with the help of a parent or guardian.

Reflection: SEE ATTACHED SECTION OF TWS