

Science
Unit 1: Rocks and Minerals

Essential Understandings	<ul style="list-style-type: none"> ▪ There is evidence of past life, extinct species, and environmental changes. ▪ Processes change the earth.
Essential Questions	<ul style="list-style-type: none"> ▪ How do we know about past life, extinct species and environmental changes? ▪ How are fossils formed? ▪ What is a rock? ▪ What are some physical properties of rocks and minerals? ▪ How can the physical properties of rocks and minerals change? ▪ How does the earth's surface change?
Essential Knowledge	<ul style="list-style-type: none"> ▪ The study of rocks and fossils shows past life, extinct species, and environmental changes over time. ▪ Fossils can help us understand how organisms have changed. ▪ Fossils are formed in sedimentary rocks. ▪ A rock is a naturally formed mineral mass. ▪ The physical properties of rocks and minerals are color, texture, hardness, shape, reaction to light, streak, etc. ▪ The physical properties of rocks and minerals can change through erosion, weathering, heat and pressure. (e.g., rocks to sediment to soil; shale to slate.) ▪ The earth's surface undergoes steady or sudden changes due to forces of wind, water, ice, volcanism, and shifting of tectonic plates.
Vocabulary	<ul style="list-style-type: none"> ▪ <u>Terms:</u> <ul style="list-style-type: none"> ○ extinct, fossil, physical change, chemical change ▪ <u>Rocks:</u> <ul style="list-style-type: none"> ○ sedimentary, igneous, metamorphic, minerals, conglomerate, soil ▪ <u>Rock Cycle:</u> <ul style="list-style-type: none"> ○ rock formation, transformation, weathering, erosion, sediments ▪ <u>Physical Properties of Rocks:</u> <ul style="list-style-type: none"> ○ color, texture, hardness, shape, reaction to light, streak

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Essential Skills	<ul style="list-style-type: none"> ▪ Explain how fossils are formed. ▪ Compare fossils to one another and to living organisms. ▪ Identify kinds of rocks (e.g., igneous, sedimentary and metamorphic). ▪ Identify parts of the rock cycle (e.g., rock formation, transformation, weathering, erosion, sediments). ▪ Identify physical properties of minerals.
Related Maine Learning Results	<p><u>Science</u> D. The Physical Setting D2.Earth Students describe the properties of Earth’s surface materials, the processes that change them, and cycles that affect the Earth.</p> <ul style="list-style-type: none"> c. Explain how wind, waves, water, and ice reshape the surface of Earth. d. Describe the kinds of materials that form rocks and soils. <p>E. The Living Environment E5.Evolution Students describe the fossil evidence and present explanations that help us understand why there are differences among and between present and past organisms.</p> <ul style="list-style-type: none"> b. Compare fossils to one another and to living organisms according to their similarities and differences.
Sample Lessons And Activities	<ul style="list-style-type: none"> ▪ Classify rocks. ▪ Make models of rock formations. ▪ Sing “Rapid Rock Rap.”
Sample Classroom Assessment Methods	<ul style="list-style-type: none"> ▪ Use a Venn diagram to compare fossils and living organisms. ▪ Complete a diagram of the rock cycle.

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**Sample
Resources**

- Publications:
 - Album of Rocks and Minerals - Tom McGowen
 - The Hermit Thrush Sings - Susan Butler
 - Janice VanCleave's Rocks and Minerals - Janice Van Cleave
 - Rocks and Minerals - David Lambert
 - Rocks and Minerals - Keith Lye
 - Rocks and Minerals - Chris Pellant
 - Rocks and Minerals - Illa Podendorf
 - Rocks and Minerals - Ann Squire
 - Rocks and Minerals - Tracy Staedter
 - Rocks and Minerals - Herbert Zim
- Videos:
 - All About Rocks and Minerals