

Science
Unit 1: Rocks and Minerals

Essential Understandings	▪ There is evidence of past life, extinct species, and environmental changes. ▪ Processes change the earth.
Essential Questions	▪ 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	▪ 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	▪ <u>Terms</u>: ○ extinct, fossil, physical change, chemical change ▪ <u>Rocks</u>: ○ sedimentary, igneous, metamorphic, minerals, conglomerate, soil ▪ <u>Rock Cycle</u>: ○ rock formation, transformation, weathering, erosion, sediments ▪ <u>Physical Properties of Rocks</u>: ○ color, texture, hardness, shape, reaction to light, streak

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Essential Skills	▪ 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	<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. c. Explain how wind, waves, water, and ice reshape the surface of Earth. d. Describe the kinds of materials that form rocks and soils. 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. b. Compare fossils to one another and to living organisms according to their similarities and differences.
Sample Lessons And Activities	▪ Classify rocks. ▪ Make models of rock formations. ▪ Sing "Rapid Rock Rap."
Sample Classroom Assessment Methods	▪ Use a Venn diagram to compare fossils and living organisms. ▪ Complete a diagram of the rock cycle.

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