

YEAR AT A GLANCE: ***EARTH SCIENCE*** (updated Oct 2024)

	<u>UNIT 1</u>	<u>UNIT 2</u>	<u>UNIT 3</u>	<u>UNIT 4</u>
Title	Measuring Earth	Rocks and Minerals	Earth's Interior	Earth's Changing Surface
Unit Length (weeks taught)	3 weeks	4 weeks	3 weeks	3 weeks
Enduring Understanding (The big ideas, the “why” we include these ideas)	<ul style="list-style-type: none"> • Abstraction and symbolic representation are used to communicate mathematically. Use eccentricity, rate, gradient, standard error of measurement, and density in context. • The Earth and celestial phenomena can be described by principles of relative motion and perspective . • Many of the phenomena that we observe on Earth involve interactions among components of air water and land. 	<ul style="list-style-type: none"> • Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation or design. • The Earth and celestial phenomena can be described by principles of relative motion and perspective. • Many of the phenomena that we observe on Earth involve interactions among components of air, water and land. • Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity. 	<ul style="list-style-type: none"> • Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land. 	<ul style="list-style-type: none"> • Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.

<p>Essential Questions (What do we want students to think about)</p>	<p>What is Earth Science?</p> <p>How do scientists study our surroundings?</p> <p>How can measurements help us to observe?</p> <p>What makes an inference more accurate?</p> <p>How you determine Percent Deviation?</p> <p>How you determine Percent Deviation from a word problem?</p> <p>How can we state and illustrate relationships between two or more variables?</p> <p>What is density?</p> <p>Can the density of a material change?</p> <p>How is density shown on a graph?</p> <p>What is true about the density of uniform material?</p> <p>What is meant by “rate of change”?</p> <p>What do I need to know to pass the Prologue test?</p>	<p>What are minerals and how do they form?</p> <p>How can minerals be identified?</p> <p>What are some common minerals and how are they classified?</p> <p>What is a rock, and what is the rock cycle?</p> <p>How do igneous rocks form and how are they classified?</p> <p>How do the different types of sedimentary rocks form?</p> <p>How do metamorphic rocks form and what are their characteristics?</p> <p>What types of resources are part of Earth’s environment, and how are they important to humans?</p> <p>What are nonrenewable and renewable energy resources?</p> <p>How does the use of Earth’s resources affect Earth’s environment?</p>	<p>What evidence have scientists found to support the theory of plate tectonics?</p> <p>What are important features of different types of plate boundaries?</p> <p>What are some of the hypotheses scientists have about the causes of plate movements?</p> <p>How have plate movements caused changes in the positions and shapes of Earth’s landmasses?</p> <p>How and where do volcanoes form?</p> <p>Why are some volcanoes explosive?</p> <p>What kinds of landforms are produced by volcanic eruptions?</p> <p>Where can volcanoes be found in the solar system?</p> <p>How and where do earthquakes occur?</p>	<p>How does weathering break down rock materials?</p> <p>How does soil form?</p> <p>How does erosion affect earth’s surface?</p> <p>What measures can be taken to protect soil as a resource?</p> <p>What are some important features of rivers?</p> <p>How do streams erode and deposit rock materials?</p> <p>How do river valleys form?</p> <p>How and why do river floods occur?</p> <p>What factors affect the storage and movement of water in the ground?</p> <p>What measures can be taken to conserve and protect groundwater supplies?</p> <p>How does groundwater erode and deposit rock materials?</p>
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	<u>UNIT 5</u>	<u>UNIT 6</u>	<u>UNIT 7</u>	<u>UNIT 8</u>
Title	Earth's History	Meteorology	Climate and Water	Astronomy
Unit Length <i>(weeks taught)</i>	3 weeks	5 weeks	2 weeks	4 weeks
Enduring Understanding (The big ideas, the "why" we include these ideas)	<ul style="list-style-type: none"> Standard M6 Key Idea 3 The grouping of magnitude of size, time, and frequency and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems. The Earth and celestial phenomena can be described by principles of relative motion and perspective 	<ul style="list-style-type: none"> Information technology can have positive and negative impacts on society depending upon how it is used. Identifying patterns of change is necessary for making predictions about future behavior and conditions. Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land. 	<ul style="list-style-type: none"> The Earth and celestial phenomena can be described by principles of relative motion and perspective. Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land. 	<ul style="list-style-type: none"> Abstraction and symbolic representation are used to communicate mathematically. Deductive and inductive reasoning are used to reach mathematical conclusions. The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing creative process. The observations made while testing proposed explanations, when analyzed using conventional and invented methods provide new insights into phenomena. The groupings of magnitudes of size time, frequencies, and pressures or other units of measurement into a series of relative order provides a useful way to

				<p>deal the immense range and the changes in scale that affect the behavior and design of system.</p> <ul style="list-style-type: none"> • The Earth and celestial phenomena can be described by principles of relative motion and perspective
<p>Essential Questions (What do we want students to think about)</p>	<p>What is a fossil and what does it reveal about earth's past?</p> <p>What is relative dating, and how is it used to order past events?</p> <p>What is absolute time and how is it measured?</p> <p>How do scientist organize the major events of earth's past?</p> <p>How do Precambrian time and the Paleozoic Era differ?</p> <p>What are the major events of the Mesozoic Era?</p> <p>What significant events characterize the Cenozoic Era?</p>	<p>What instruments are used to predict the weather?</p> <p>How do clouds form?</p> <p>What causes precipitation?</p> <p>What is air pressure, and what causes winds?</p> <p>How does Earth's rotation affect global wind and pressure patterns?</p> <p>What are air masses? How and where do they originate?</p> <p>How do weather systems develop?</p> <p>How do fronts and pressure systems affect weather patterns?</p> <p>What atmospheric conditions cause thunderstorms and tornadoes?</p> <p>How do scientists define hurricanes? ...and winter storms?</p>	<p>What is climate, and what factors affect it?</p> <p>What are the characteristics of some of earth's climates?</p> <p>What causes climate change?</p> <p>What factors affect the storage and movement of water in the ground?</p> <p>What measures can be taken to conserve and protect groundwater supplies?</p>	<p>What have we learned about the universe that surrounds us?</p> <p>What effect does the solar wind have on the earth system?</p> <p>What processes have formed the surface of mars and other planets?</p> <p>How does a star become a supernova?</p> <p>What is the electromagnetic spectrum, and how does it help astronomers learn about stars?</p> <p>What are the characteristics of stars?</p> <p>What are the phases of a star's life cycle?</p> <p>What are galaxies?</p> <p>Where do scientists think the universe came from?</p>

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