

	<p>Geosphere, hydrosphere, atmosphere, biosphere <u>Atmosphere</u></p>	<p>between systems</p> <ul style="list-style-type: none"> Describe interactions between systems Identify and describe layers of Earth's atmosphere 	<p>systems affects other Earth's systems.</p>	<ul style="list-style-type: none"> test posters modeling of student samples Flip book 	<p>living in that area?</p>
<p>Nov ember</p>	<p><u>Earth's layers</u></p> <ul style="list-style-type: none"> <u>Heat Transfer</u> <u>Plate Tectonics</u> <u>Continental Drift</u> <u>Sea Floor Spreading</u> 	<ul style="list-style-type: none"> Describe layers of the Earth Explain how scientists determine the composition of earth's interior Compare and contrast oceanic and continental plates Interpret cause and effect of plate movement Describe the history of Earth's plate movement Predict plate movement Identify and describe geologic formations formed at each type of plate boundary Identify each type of plate boundary Identify evidence for Continental Drift 	<ul style="list-style-type: none"> E3.2A Describe the interior of the Earth. E3.2B Explain how scientists infer that the Earth has layers. E3.2C Describe differences between oceanic and continental crust. E2.2C Describe natural processes in which heat transfer occurs by conduction, convection, and radiation. 3.3B Explain why tectonic plates move using the concept of heat flowing through mantle convection, coupled with the cooling and sinking of aging ocean plates that result from their increased density. C2.2d Explain convection and the difference in transfer of thermal energy for solids, liquids, and gases using evidence that molecules are in constant motion. 	<ul style="list-style-type: none"> Scale drawing of the Earth quiz, test Flip book modeling of student samples inquiry density lab guided notes Plate Puzzle activity Flip book Earth's layers concept map Collin's writing Convection/Conduction/Radiation Lab Tests, quizzes 	<ul style="list-style-type: none"> How do scientists know what the interior of the Earth is like? How do scientists know Earth's continents were at different locations in the past?
<p>December</p>	<p><u>Earthquakes and Volcanoes</u></p>	<ul style="list-style-type: none"> Calculate speed. Distance/ time of waves Interpret graphs Compare and contrast seismic waves Interpret data and apply it to Mercalli and Richter scale Interpret/predict earthquake risks of the U.S. Describe the interior of the earth based on 	<ul style="list-style-type: none"> E1.1D Relate patterns in data to theories. E3.2B Explain how scientists infer that the Earth has internal layers with discernable properties using patterns of primary and secondary seismic wave arrivals. 3.4B Describe how the sizes of earthquakes and volcanoes are measured or characterized. 	<ul style="list-style-type: none"> Interpret graphs and maps Collin's writing article review diagram plate boundaries and volcanoes Mercalli Scale Activity quizzes and tests guided notes 	<ul style="list-style-type: none"> When will the next "big one" hit? Why can't we predict them?

<p>March</p>	<p><u>Climate Change</u></p>	<ul style="list-style-type: none"> • Students analyze climate change models • Hypothesize climate changes into the future • Evaluate current data on climate change • Evaluate climate change in regards to impact on earth's systems and global warming • List carbon sinks and sources • List and describe the major greenhouse gases, explain their contribution to the greenhouse effect 	<ul style="list-style-type: none"> • E 2.3A Explain how carbon exists in different compounds and states as it moves from one reservoir to another. • E5.4A Explain the natural mechanism of the greenhouse effect including comparisons of the major greenhouse gases. • E5.4C Analyze empirical relationships between the emission of carbon dioxide, atmospheric carbon dioxide levels and the average global temperature over the past 150 years. • E5.4D Based on evidence of observable changes in recent history and climate change models, explain consequences of warmer oceans and changing climatic zones. 	<ul style="list-style-type: none"> • Video "Big Freeze" • Graphing CO₂, CH₄, and other greenhouse gases • Carbon cycle diagram • Article reviews on ecosystem changes due to global warming • Reading for comprehension: "Climate Change- What's the Big Deal?" • Guided notes • Concept mapping • Collin's writing • test • vocabulary quiz • Graph recent greenhouse gas data and interpret/identify trends; predict future trends 	<ul style="list-style-type: none"> • What will our climate be like in 50 years and does it matter?
	<p><u>Severe Weather</u></p>	<ul style="list-style-type: none"> • Students predict and explain cloud formation • Predict and explain common forms of severe weather including: tornadoes, hurricanes, drought, blizzards, floods, thunderstorms • Describe the formation of different types of weather fronts • Explain the effect of severe weather on people 	<ul style="list-style-type: none"> • E2.2C Describe natural processes in which heat transfer in the Earth occurs by conduction, convection, and radiation • E4.3A Describe various conditions associated with severe weather (thunderstorms, hurricanes, floods, waves, and drought). • E4.3 C Describe severe weather and flood safety and mitigation. • E4.3F Describe how mountains, frontal wedging (including dry lines), convection, and convergence form clouds and precipitation. 	<ul style="list-style-type: none"> • Flip book • Video poster activity • Complete charts • Quizzes/test • Article of the week • Collin's writing • Collect daily weather data • Guided notes • Making a Weather Map Activity • Guided reading 	<p>How does the weather affect you daily? Why do you need to know the weather?</p>

<p>April</p>	<ul style="list-style-type: none"> • <u>Earth's History</u> 	<ul style="list-style-type: none"> • Students use relative age and absolute dating techniques to discern sequencing of geologic events • Describe gradual and catastrophic change that has occurred over geologic time • Explain the term superposition and uniformitarianism 	<ul style="list-style-type: none"> • E5.3B Describe the process of radioactive decay and explain how radioactive elements are used to date rocks that contain them. • E5.3C Relate major events in the history of the Earth to the geologic time scale, including formation of the Earth, formation of an oxygen atmosphere, rise of life, Cretaceous-Tertiary (K-T) and Permian Extinctions, and Pleistocene Ice Age. • E5.3D Describe how index fossils can be used to determine time sequence 	<ul style="list-style-type: none"> • Carousel posters of each time period • Guided notes • Radioactive Decay shoebox activity • Diagrams of layers/relative dating worksheets • Collin's writing • Layered books • Video w/ guided questions • Travel Brochure for time period • Tests/quizzes 	<ul style="list-style-type: none"> • What really killed the dinosaurs? • What was Michigan like 50,000 years ago? One million years ago?
<p>May</p>	<ul style="list-style-type: none"> • <u>Cosmology & Earth's Place in the Universe</u> • <u>The Sun and Other Stars</u> 	<ul style="list-style-type: none"> • Use and explain the evidence that supports the accepted model for the structure, age, and size of our universe • Describe the location of our universe in the Milky Way Galaxy • Analyze, interpret data on sun spots and relate patterns to processes on the sun • Analyze and interpret past solar activity to predict patterns in future activity • Describe how solar activity affect us on Earth • Compare spectra of stars and various masses and in different stages of evolution to understand pathways in stellar evolution • Describe the formation 	<ul style="list-style-type: none"> • E5.1A Describe the position and motion of our solar system in our galaxy and the overall scale, structure, and age of the universe. • E5.3A Explain how the solar system formed from a nebula of dust and gas in a spiral arm of the Milky Way Galaxy about 4.6 Ga (billion years ago). • E5.2C Describe how nuclear fusion produces energy in the Sun. • E5.2D Describe how nuclear fusion and other processes in stars have led to the formation of all of the other chemical elements. 	<ul style="list-style-type: none"> • Article of the week • Guided notes • Video with guided questions • Tests/quizzes • Graphing /Analyzing sunspot data • Star life cycle concept map • Guided notes • Article of the week • Video with guided notes • Tests, quizzes • Collin's writing 	<ul style="list-style-type: none"> • What shape is our galaxy? • Where is it located in reference to everything else in the Universe? • Why do the stars shine? • Why does our sun give off light?

		and dispersion of elements from fusion in stars			
June	<ul style="list-style-type: none"> <u>Waves</u> 	<ul style="list-style-type: none"> Emphasize relationships between frequency and wavelength Describe the energy released by an electron from moving to a lower energy level in terms of frequency Describe/explain the electromagnetic spectrum 	<ul style="list-style-type: none"> C2.4d Compare various wavelengths of light (visible and nonvisible) in terms of frequency and relative energy. 	<ul style="list-style-type: none"> Interpret a labeled EMS diagram. Light demos 	<ul style="list-style-type: none"> Why are there different colors of light?