Department: Science
Course Title: Integrated Science
Creator: S. Brown
Date: 2025-2026

Unit Title	Unit Length (weeks)	Dates of Unit (Month - Month)	Essential Questions	Topics to be Covered Texts Used	Skills to be Assessed	Standard Alignment	Formative Assessments	Summative Assessments
Lab safety and Lab equipment	2 weeks		What is the proper way to behave in a lab situation? Where are the locations of all safety equipment? How do you use each piece of safety equipment? What is each piece of lab equipment, it's use and unit of measurement? What are the basic safety symbols and what do they tell us?	Safety contract. Lab safety. Lab safety symbols. Lab safety equipment. Lab equipment.	- reading lab equipment. identification of lab safety symbols. -behavior in lab.	HS-ETS1-3 HS-ETS1-4 HS-ESS1-1 HS-ESS1-2 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4	Open response questions for lab situations. Creation of safety poster. Practice reading equipment worksheet. Practice labs with equipment.	-lab safety test -signed lab contract -equipment test
graphing	2 weeks with review and application throughout the year		What are the different types of graphs used in science? What type of graph is used for certain data? What is the proper way to title a graph and the X and Y axes? How do you determine range and scale of a graph? How do you construct a data table? Where do you plot the independent/dependent variables on a graph? When constructing a data table where do the independent/dependent variables go? What is the purpose of a data table? What is the purpose of a graph?	Types of graphs How to read a graph. Parts of a graph. Range and how to determine it. Scale (interval) of a graph and how to determine it. What is an independent and dependent variable. Construction of graphs with all needed parts.	reading graphs. constructing graphs	HS-ESS2-2 HS-ESS3-5 HS-LS2-1	google assignments application worksheet quiz large scale drawing labs: data collection.	test with contruction of a graph from given data. Must have all needed parts.
Space	7 weeks		What is the Big bang theory. What are the major pieces of evidence for the BBT What is a universe, galaxy, and what makes them up. What is the doppler effect and how it is related to the BBT. What is red shift, who proposed it, what does redshift tell us about the size of our universe and the speed of expansion, what does it tell us about the speed of other objects move toward/away from us, how is it a piece of evidence for the BBT. What is the the cosmic microwave background, how was it discovered and how is it a piece of evidence for BBT. What is the universe element makeup of the universe and how is it related to BBT. What are heliocentric and geocentric models of the universe and who proposed the ideas. Who are Brahe and Kepler and what were their contributions to astronomy. What are the layers of a star and what happens in each layer. What is nuclear fusion in a star, what is needed for nuclear fusion and what is the outcome. Explain all steps of the life cycle of a star. What is a hertzsprung russell diagram, how is it used, what does it tell us about a star.	The Big bang theory and the evidence that support it. 3 main pieces of evidence for the BBT. Star life cycle and what happens at each stage of a stars life. reading and using a Hertzsprung russell diagram.	Know the big bang theory and evidence for it Understanding of the life cycle of a star Reading and using a Hertzsprung russell diagram.	HS-ESS1-1 HS-ESS1-2 HS-ESS1-3 HS-ESS1-4	google assignments application worksheet quiz large scale drawing labs	Test over the big bang theory and life cycle of a star

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Earth: history	3 weeks	``	What is the geologic time scale, how is it arranged, and be able to read the GTS. What is relative age, what are the principles of relative age, apply them to rock formations. What is an index fossil, what are the qualifications for an index fossil. What is absolute dating and why is it used. How is it different from relative age. What is half life, how is it determined, what are the parent and daughter isotopes. Apply concepts of half life and determine the half life of an element. Be able to read and construct a half life graph.	Geologic time scale. Relative age. Absolute age dating. Half life.	Reading and understand a geologic timeline. understanding the difference between relative and absolute dating. applying principles of dating. Calculating half life of an atom, number of parent and daughter atoms.	HS-ESS1-5 HS-ESS1-6 HS-ESS2-7	google assignments application worksheet quiz labs	Unit test over geologic time scale and types of dating.
Minerals and Rocks	3 weeks		What is a mineral. What qualities are required to be considered a mineral? What is a crystal and their shapes. How can you identify a mineral. Mohs hardness scale: understanding and use of it. Different methods are testing to determine what mineral you are given. What is weathering, erosion, deposition, what are the different ways they can happen and what are their effects on the land. What are the different types of erosion and deposition. How do water, wind, gravity and glaciers cause weathering and erosion. What is the rock cycle. How does the rock cycle work. What are the parts of the rock cycle.	Minerals. Crystals. Weathering, erosion and deposition. The rock cycle.	Determining if something is a mineral or not. Use of the mohs hardness scale. Identifying weathering, erosion and deposition and effects on the earth's surface. Using a rock cycle illustration. Know they processes required to change from one rock type to another.	HS-ESS2-5	google assignments application worksheet quiz labs	Unit test over minerals and the rock cycle.

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Earth	5-6 weeks		How is soil formed. What is a soil horizon and how are the different horizons different from each other? What are the different layers of the earth and how are they different from each other. What are direct and indirect observations and how do they apply to us learning about the interior of the earth. What is a convection current, where does it take place, what causes it, what effects does it have on the lithosphere, what is its connection to plate tectonics. What are seismic waves: p waves, s waves, surface waves, how do they move, how do they affect the surface, what do they tell us about earth's interior. How do we use seismic waves to make indirect observations about earth's interior. what are the parts of a wave, how do we record and measure seismic waves. what are the 3 main theories of plate tectonics, who proposed them, what were the major pieces of evidence for each theory. What are plate boundaries, how do the plates interact at the boundaries, what effects does this have on earth's surface. What causes the plates to move. What are the different fault types and how do the plates move with each type, what plate boundary is it connected to. What is a volcano, what are the different types of volcanoes. What is a hot spot. What causes a volcano to erupt.	Soil formation. Layers of the earth. Seismic waves, earthquakes. Volcanoes. theories of plate tectonics. Plate boundaries. Fault types. Effects of all on earth's surface.	Ability to label waves and id different types. Id different volcano types. Id different faults/plate boundaries. Id different soil horizons.	HS-ESS2-1 HS-ESS2-2 HS-ESS2-3 HS-ESS2-4 HS-ESS2-5 HS-ESS3-1	google assignments application worksheet quiz labs	Unit test over the earth.

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Carbon chemistry/fossil fuels Human activities and the effects on the enviroment	4 weeks		What is carbons part in life on earth? What is an organic molecule? vs inorganic? What are hydocarbons? What is a saturated hydrocarbon vs an unsaturated? What are the fossil fuesl and hwo are they formed? What is combustion of fossil fuesl and the results of combustion? How does combustion of fossil fuesl effect teh enviroment? What is the carbon cycle and its parts? What is considered air pollution and the types of air pollution? What is the short and long term effetcs of air pollution? What are green house gases? And sources of them? How do green house gases increase in the atmosphere (natural and unnatural)? What are the long term effects of increased green house gases in the atmosphere? What are the layers that make up the atmosphere? How do green house gases and pollution effetc the layers of the atmosphere? What is global warming? How does global warming effect weather phenom such as el nino, la nina, hurrican season and severe weather?	carbon cycle Organic chemistry Fossil fuels Air pollution and global warming Effects of global warming		HS-ESS2-6 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-ESS3-5 HS-ESS3-6		