

DEPARTMENT: SCIENCE	COURSE TITLE. EARTH SCIENCE B HONORS COURSE NUMBER: 219
GRADE(S): 9-12	PRE-REQUISITES (IF ANY):

UNIT	LENGTH	CONTENT	SKILLS	METHODS OF ASSESSMENT	FRAMEWORK STRAND(S) & STANDARD(S)
Astronomy: Sun-Earth-Moon System	10 days	<ul style="list-style-type: none"> • Size and distance relationships • Solar energy • Concepts of time • Phases of the moon • Eclipses • Seasons 	Students will: <ul style="list-style-type: none"> • Demonstrate understanding of scale modeling. • Perform field observation and synthesis of information. • Perform data collection and laboratory procedures. • Demonstrate understanding of data analysis and reasoning. • Model processes. • Model concepts. • Take accurate notes. • Maintain notebook. 	<ul style="list-style-type: none"> • Time zone activity • Seasons lab • Phases of the moon lab • Quizzes and tests • Homework • Class discussions • Organization and quality of notebook 	1.1 1.8 1.14 4.5
Astronomy: Our Solar System and Beyond	5 days	<ul style="list-style-type: none"> • Members of our solar system • Evolution of the solar system • The Big Bang Theory • Universal Laws of motion and gravity • The electromagnetic spectrum • The concept of the light year • The Hertzsprung-Russell Diagram and stellar evolution • Instruments used to study astronomy 	Students will: <ul style="list-style-type: none"> • Demonstrate understanding of scale modeling. • Perform abstract reasoning. • Perform data manipulation. • Read complex visual representations of data. • Use scientific notation. • Model concepts. • Take accurate notes. • Maintain notebook. 	<ul style="list-style-type: none"> • Model of our solar system • Independent research • Quizzes and tests • Homework • Class discussions • Organization and quality of notebook 	1.2 1.3 1.4 1.14 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8
Meteorology: Energy and the Atmosphere	10 days	<ul style="list-style-type: none"> • The structure and composition of the atmosphere • Energy transfer as heat and light • The ozone layer and its interactions with solar radiation • The Greenhouse effect and global warming • The interactions between the atmosphere, hydrosphere, and life on earth • The hydrologic cycle • Clouds and precipitation • Heat capacity of land and water 	Students will: <ul style="list-style-type: none"> • Graph correctly. • Model structure. • Demonstrate understanding of laboratory procedures and techniques. • Synthesize disparate information. • Take accurate notes. • Maintain notebook. 	<ul style="list-style-type: none"> • Heat capacity lab • Relative humidity lab • Dew point lab • Making clouds lab • Quizzes and tests • Homework • Class discussions • Organization and quality of notebook 	1.5 1.6 1.8 1.9 1.14 3.4 3.17

<p>Meteorology: Understanding Weather</p>	<p>15 days</p>	<ul style="list-style-type: none"> • Air pressure in the atmosphere • High-pressure and low-pressure centers (and associated weather conditions) • Localized wind patterns • Global wind patterns and the Coriolis Effect • Air masses and fronts • Reading weather maps • Severe weather and storms • Impacts of weather on humans 	<p>Students will:</p> <ul style="list-style-type: none"> • Use latitude and longitude to plot storm positions. • Read and create weather maps. • Create contour maps of temperature and pressure. • Synthesize information. • Take accurate notes. • Maintain notebook. 	<ul style="list-style-type: none"> • Air pressure lab • Isotherm activity • Plotting hurricane paths (worksheet) • Independent research • Quizzes and tests • Homework • Class discussions • Organization and quality of notebook 	<p>1.7 1.8 1.10 1.14</p>
<p>Physical Oceanography</p>	<p>15 days</p>	<ul style="list-style-type: none"> • Seafloor features • Structure and composition of the oceans • Wave creation, motion, and structure • Tide formation and occurrence • Surface and deep-water currents • Development, erosion, and protection of shoreline features • Interactions between humans and the oceans 	<p>Students will:</p> <ul style="list-style-type: none"> • Graph correctly. • Model structure. • Demonstrate understanding of laboratory procedures and techniques. • Synthesize information. • Demonstrate problem solving abilities. • Model processes. • Take accurate notes. • Maintain notebook. 	<ul style="list-style-type: none"> • Seafloor feature activity • Wave lab • Group project • Quizzes and tests • Homework • Class discussions • Organization and quality of notebook 	<p>1.3 1.11 1.12 1.13 1.14 3.5 3.19 3.21</p>