

OLEAN HIGH SCHOOL

Course Name: Physical Science 8th Grade

Text: Prentice Hall, Physical Science

Other Resources: Prentice Hall (Weather & Climate, Astronomy, Inside the Earth)

8th Grade

| <i>Month</i> | <i>Topic Content</i> | <i>Skills</i> | <i>Concepts</i> | <i>Major Assessments</i> | <i>Learning Standards</i> | <i>Resource/Text Chapters</i> |
|--------------|---|--|--|--------------------------|--|-------------------------------|
| Sept. | Analysis, Inquiry and Design | -follow safety procedures -accurate use of tools -apply scientific method -design and manipulate an experiment -identify independent and dependent variables | Safety Scientific Method Scientific Inquiry Experimental Design | Labs Quizzes Tests | Standard 1 | Prentice Hall Chapter 1 |
| Oct. | Properties of Matter | -density calculation and application -explain gravitational forces -describe what a property of matter is | Density General/Specific Properties Gravity | Labs Quizzes Tests | Standard 4 3.1a, 3.1h, 3.1i, 3.2 (a-c) 4.2 (c, e) 3.3 h | Prentice Hall Chapter 2 |
| Nov. | Composition of Matter – Phases of Matter | -distinguish the similarities and difference between a solid, liquid, gas, and plasma -Interpret a phase change diagram | Phases of matter Phase change diagrams | Labs Quizzes Tests | Standard 4 3.1c, 3.1d, 3.1e, 3.1f, 3.3h, 4.2d | Prentice Hall Chapters 3 |

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| Dec. | Composition of Matter – Classes of Matter | <ul style="list-style-type: none"> - separate a mixture -recognize elements, compounds and mixtures - distinguish between exothermic and endothermic reactions -read solubility curves | Classification of Matter Chemical Families Chemical Reactions | Labs Quizzes Tests | 3.1g, 3.2a, 3.2b, 3.2c, 4.2e | Prentice Hall Chapters 4 |
| Jan. | Composition of Matter – Periodic Table of Elements | <ul style="list-style-type: none"> -recognize elements, compounds and mixtures - read the periodic table, locate families - draw models of atoms | Atomic Structure Classification of Matter Chemical Families Chemical Reactions | Labs Quizzes Tests Element Research Project | Standard 4 3.3 (a-g) 3.2 (d, e) 4.3 a | Prentice Hall Chapters 5 - 8 |
| Feb. | Earthquakes And Volcanoes | <ul style="list-style-type: none"> -name the layers of the Earth -describe plate tectonics and explain continental drift - identify the plate boundary types - use triangulation to find an earthquake epicenter - describe volcanic formation - locate Ring of Fire | Layers of the Earth Plate Tectonics Boundary Types Earthquake waves Volcanic Formation | Labs Quizzes Tests Volcano Internet Project | Standard 4 2.2 (a – f) | Inside the Earth Textbook |
| | Weather | <ul style="list-style-type: none"> - name and describe layers of the atmosphere - describe high altitude conditions - explain weather fronts and phenomena - know and put in order the electromagnetic spectrum -compare/contrast warm vs. cold air masses - be able to read a weather map | Atmosphere Layers Air Masses and Fronts Energy in the Atmosphere Weather Maps | Labs Quizzes Tests Weather Folklore Project | Standard 4 2.1 (a-d, i) 2.2 (i- r) 1.1 (a- j) 4.2 (a, b, d) 4.4 a | Weather and Climate Textbook |
| Mar. | Space | <ul style="list-style-type: none"> - name and identify the phases of the moon -explain origin of the universe | Moon Phases Big Bang Theory Our Solar System | Quizzes Tests | Standard 4 | Astronomy Textbook |

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| | | <ul style="list-style-type: none"> - name/ locate parts of the solar system -define/describe forces keeping the solar system intact - recognize difference between rotation and revolution | Forces/Gravity Galaxies Asteroids, Comets, etc | | 1.1 (a-j) | |
| | Forces and Motion | <ul style="list-style-type: none"> - explain gravity and its effects - calculate force, acceleration and velocity - explain and demonstrate Newton's Laws of Motion - understand the relationship of force, mass and acceleration | Gravity Types of Forces Newton's Laws Calculations :Velocity and Acceleration Fluid Pressure | Labs Quizzes Tests | Standard 4 5.1 (a - e) 5.2 (a,c,d,e) | Prentice Hall Chapters 13-14 |
| Apr. | Energy | <ul style="list-style-type: none"> - name the 5 main forms of energy - show how potential energy converts to kinetic energy - recognize various energy conversions | Forms of Energy Potential vs. Kinetic Energy Conversions Conservation of Energy | Labs Quizzes Tests | Standard 4 4.1 (a-f) 4.4 d 4.5 (a, b) 4.3a, 4.4d | Prentice Hall Chapters 16 |
| May | Light and Sound | <ul style="list-style-type: none"> - know the difference between reflection and refraction of light - explain how lenses and mirrors work identify the parts of a wave - distinguish between amplitude and frequency | Wave Structure Electromagnetic Spectrum Lenses Reflection/Refraction Speed of Sound | Labs Quizzes Tests | Standard 4 4.4 (a-d) | Prentice Hall Chapters 23 - 26 |
| | Review/Testing | <ul style="list-style-type: none"> -measure mass, volume and length; calculate density and apply. -apply potential energy to kinetic energy conversion to the ball and ramp set up -use a microscope properly -estimate field of view -use a dichotomous key | Density Motion and Energy Microscope Dichotomous Key | | | Review Sheets Practice Labs |
| | REVIEW | | Circuits Machines Magnetism Body Systems Rock Cycle | | | Review Sheets Practice Questions State Tests |

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| June | REVIEW | | Cell Biology Genetics Cycles Biomes Food Webs/Pyramids ETC... | | | Review Sheets Practice Questions State Tests |
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