

7th Grade Units and Standards

Fugate & E. Mac

Unit	Standards
<p>Introduction/Lab Safety</p> <p>Lab Safety Metric System: Length, Volume, Mass- Triple Beam Balances, Graduated Cylinders</p>	
<p>Chemical Reactions</p> <p>Matter Chemical & Physical Properties & Changes Density Phase Changes/States of Matter Solubility Indicators of Chemical Reactions Atoms Law of Conservation of Mass/Matter</p>	<p>07-PS1-2: Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.</p> <p>07-PS1-5: Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.</p>
<p>Energy</p> <p>Heat Thermal Energy Transfer Potential & Kinetic Energy Factors that affect Potential Energy</p>	<p>07-PS3-2: Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.</p> <p>07-PS3-3: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.</p> <p>07-PS3-4: Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.</p>

	<p>07-PS3-5: Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.</p> <p>07-PS1-6: Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.</p>
<p>Forces and Interactions</p> <p>Magnetic Fields Characteristics of Magnets Electrical Forces- Static Electricity Gravitational Forces</p>	<p>07-PS2-3: Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.</p> <p>07-PS2-4: Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.</p> <p>07-PS2-5: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.</p>
<p>Waves and Electromagnetic Radiation</p> <p>Properties of Waves Longitudinal vs. Transverse Waves Electromagnetic vs. Mechanical Waves Sound Waves Light Analog & Digital Signals</p>	<p>07-PS4-1: Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.</p> <p>07-PS4-2: Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.</p> <p>07-PS4-3: Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.</p>
<p>Structure, Function, and Information Processing (Cells Review)</p> <p>Cell Theory Multicellular vs. Unicellular</p>	<p>07-LS1-1: Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells.</p>

<p>Plant vs. Animal Cells Cell Organelles</p>	<p>07-LS1-2: Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p>
<p>Matter and Energy in Organisms and Ecosystems</p> <p>Photosynthesis Cellular Respiration</p>	<p>07-LS1-6: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <p>07-LS1-7: Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.</p>
<p>Growth, Development, and Reproduction of Organisms</p> <p>Plant Reproduction Plant Adaptations for Pollination Seed Dispersal Animal Behaviors Environmental Factors</p>	<p>07-LS1-4: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p> <p>07-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>
<p>Structure, Function, and Information Processing/Dissection</p> <p>Levels of Organization Respiratory System Circulatory System Heart Rate Digestion Digestive Tract Function of Kidneys Dissection Safety Anatomy of Frog Frog Dissection</p>	<p>07-LS1-3: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</p>