

Grade 6	Grade 7	Grade 8
<p>Science as Inquiry</p> <ul style="list-style-type: none"> • Describe the Science Process Skills • Explain and demonstrate the steps of the Scientific Method <p>Earth Science</p> <ul style="list-style-type: none"> • Interpret and create models and maps of Earth's common physical features • Describe the properties of the layers of the Earth • Describe how layers of rocks can tell us about the age of the Earth • Describe how the movement of the Earth's crustal plates causes slow changes in the Earth's surface • Describe how glaciers shape the land • Describe how fossils provide evidence about the past • describe and give examples of ways in which the earth's surface is built up and torn down by natural processes • Describe how gravity creates tides • Describe the interaction between the Earth, moon, and sun system including phases and eclipses • Compare and contrast properties and conditions of objects in the solar system to those of Earth • Explain how the tilt of the Earth creates seasons • Describe a galaxy as a system of billions of stars, gases and dust 	<p>Life Science</p> <p>Structure and Function of Cells</p> <ul style="list-style-type: none"> • Describe basic units of life (cells) • Compare and contrast plant and animal systems including transport, support, respiration, and metabolism <p>Systems of Living Things</p> <ul style="list-style-type: none"> • Describe the hierarchical organization of multi-cellular organisms from cells to organs to tissues to systems to organisms • Identify the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, excretion, protection from disease, and movement, control, and coordination) and describe ways that these systems interact with each other <p>Classification of Organisms</p> <ul style="list-style-type: none"> • Classify organisms into kingdoms according to shared characteristics • Describe several organisms from each kingdom 	<p>Physical Science</p> <p>Properties of Matter</p> <ul style="list-style-type: none"> • Compare and contrast weight and mass • Demonstrate the ability to calculate the density of matter • Explain how mass is conserved in a closed system <p>Elements, Compounds and Mixtures</p> <ul style="list-style-type: none"> • Explain the differences between elements, compounds, and mixtures • Differentiate between an atom and a molecule • Describe the difference between a chemical and a physical change • Recognize that there are more than 100 elements <p>Motion of Objects</p> <ul style="list-style-type: none"> • Explain and give examples of how the motion on an object can be describe by its position, direction of motion, and speed • Graph and interpret distance vs. time graphs for constant speed

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<p>Technology/Engineering</p> <ul style="list-style-type: none"> • Identify and explain the steps of the engineering design process • Demonstrate methods of representing solutions to a design problem • Describe and explain the purpose of a given prototype 	<p>Life Science (cont.)</p> <p>Relationships in the Ecosystem</p> <ul style="list-style-type: none"> • Give examples of ways in which organisms interact and have different functions within an ecosystem that enable it to survive • Explain the roles and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web • Explain how dead plants and animals are broken down by other living organisms, how this process contributes to the system as a whole • Recognize that producers (plants contain chlorophyll) use energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis <p>Evolution and Biodiversity</p> <ul style="list-style-type: none"> • Relate genetic variation and environmental factors to evolution and diversity • Recognize that evidence from fossils, geology, and comparative anatomy, provide the basis for the theory of evolution <p>Changes in Ecosystems Over Time</p> <ul style="list-style-type: none"> • Identify ways in which ecosystems have changed throughout geologic time. • Describe how changes may be catastrophic • Recognize that biologic evolution accounts for diversity of species over time 	<p>Physical Science (cont.)</p> <p>Energy</p> <ul style="list-style-type: none"> • Differentiate between potential and kinetic energy • Identify situations where kinetic energy transforms into potential energy and vice versa • Recognize that heat is a form of energy • Explain the effect of heat on particle motion related to phase change • Describe how heat moves in predictable ways <p>Scientific Reasoning</p> <ul style="list-style-type: none"> • Use the scientific method to design an experiment • Illustrate understanding of variables and controls <p>Technology/Engineering</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the design process by designing and building structures within given constraints • Identify, illustrate, and describe the steps of the design process

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	<p>Life Science (cont.)</p> <p>Reproduction and Heredity</p> <ul style="list-style-type: none"> • Define heredity as the passage of genetic instructions from one generation to another • Recognize that hereditary information is contained in genes located in chromosomes of each cell • Compare how traits are passed in sexual and asexual reproduction <p>Scientific Reasoning</p> <ul style="list-style-type: none"> • Use the scientific method to design an experiment • Illustrate understanding of variables and controls <p>Technology/Engineering</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the design process by designing and building structures within given constraints • Identify, illustrate, and describe the steps of the design process 	