



## Science Scope and Sequence

	Quarter: 1	Quarter2	Quarter 3	Quarter 4
<b>Strand</b>	<b>Physical Science (PS)</b>	<b>Physical Science (PS) Earth Space Science (ESS)</b>	<b>Earth Space Science (ESS) Life Science (LS)</b>	<b>Life Science (LS)</b>
<b>Topic</b>	<p><b>Matter and Motion</b> This topic focuses on the study of foundational concepts of the particulate nature of matter, linear motion, and kinetic and potential energy.</p>	<p><b>Matter and Motion</b> This topic focuses on the study of foundational concepts of the particulate nature of matter, linear motion, and kinetic and potential energy.</p> <p><b>Rocks, Minerals and Soil</b> This topic focuses on the study of rocks, minerals and soil, which make up the lithosphere. Classifying and identifying different types of rocks, minerals and soil can decode the past environment in which they formed</p>	<p><b>Rocks, Minerals and Soil</b> This topic focuses on the study of rocks, minerals and soil, which make up the lithosphere. Classifying and identifying different types of rocks, minerals and soil can decode the past environment in which they formed.</p> <p><b>Cellular to Multicellular</b> This topic focuses on the study of the basics of Modern Cell Theory. All organisms are composed of cells, which are the fundamental unit of life. Cells carry on the many processes that sustain life. All cells come from pre-existing cells.</p>	<p><b>Cellular to Multicellular</b> This topic focuses on the study of the basics of Modern Cell Theory. All organisms are composed of cells, which are the fundamental unit of life. Cells carry on the many processes that sustain life. All cells come from pre-existing cells.</p>
<b>Content Statement</b>	<p><b>6.PS.1: Matter is made up of small particles called atoms.</b> Matter has mass, volume and density and is made up of particles called atoms.</p>	<p><b>6.PS.3: There are two categories of energy: kinetic and potential.</b> Objects and substances in motion have kinetic energy.</p>	<p><b>6.ESS.3: Igneous, metamorphic and sedimentary rocks form in different ways.</b> Magma or lava cools and crystallizes to form igneous</p>	<p><b>6.LS.2: All cells come from pre-existing cells.</b> Cells repeatedly divide resulting in more cells and</p>

Elements are a class of substances composed of a single kind of atom. Molecules are the combination of two or more atoms that are joined together chemically.

**6.PS.2: Changes of state are explained by a model of matter composed of particles that are in motion.**

Temperature is a measure of the average motion of the particles in a substance.

Heat is a process of energy transfer rather than a type of energy. Energy transfer can result in a change in temperature or a phase change.

When substances undergo changes of state, atoms change their motion and position.

role of energy in physical, biotic, atmospheric, oceanic, and geologic systems covered in grade 6 and subsequent grades and courses.

**6.PS.3: There are two categories of energy: kinetic and potential.**

Objects and substances in motion have kinetic energy.

Objects and substances can have energy as a result of their position (potential energy).

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**6.PS.4: An object's motion can be described by its speed and the direction in which it is moving.**

An object's position and speed can be measured and graphed as a function of time.

**6.ESS.1: Minerals have specific, quantifiable properties.**

Minerals are naturally occurring, inorganic solids that have a defined chemical composition. Minerals have properties that can be observed and measured. Minerals form in specific environments.

**6.ESS.2:** Igneous, metamorphic and sedimentary rocks have unique characteristics that can be used for identification and/or classification. Most rocks are composed of one or more minerals, but there are a few types of sedimentary rocks that contain organic material, such as coal. The composition of the rock, types of mineral present, and/or mineral shape and size can be used to identify the rock and to interpret its history of formation, breakdown

rocks. Heat and pressure applied to existing rock forms metamorphic rocks.

Sedimentary rock forms as existing rock weathers chemically and/or physically and the weathered material is compressed and then lithifies. Each rock type can provide information about the environment in which it was formed.

**6.ESS.4: Soil is unconsolidated material that contains nutrient matter and weathered rock.**

Soil formation occurs at different rates and is based on environmental conditions, types of existing bedrock and rates of weathering. Soil forms in layers known as horizons. Soil horizons can be distinguished from one another based on properties that can be measured. The terms dirt and soil are not synonymous, use the term "soil".

**\*6.ESS.5: Rocks, minerals and soils have common and practical uses.**

growth and repair in multicellular organisms.

**6.LS.3: Cells carry on specific functions that sustain life.**

Many basic functions of organisms occur in cells. Cells take in nutrients and energy to perform work, like making various molecules required by that cell or an organism.

Every cell is covered by a membrane that controls what can enter and leave the cell. Within the cell are specialized parts for the transport of materials, energy capture and release, protein building, waste disposal, information feedback and movement.

**6.LS.4: Living systems at all levels of organization demonstrate the complementary nature of structure and function.**

The level of organization within organisms includes cells, tissues, organs, organ systems and whole organisms. Whether the organism is single-celled or multicellular,

		(weathering) and transport (erosion).	Nearly all manufactured material requires some kind of geologic resource. Most geologic resources are considered nonrenewable. Rocks, minerals and soil are examples of geologic resources that are nonrenewable.  <b>6.LS.1: Cells are the fundamental unit of life.</b> All living things are composed of cells. Different body tissues and organs are made of different kinds of cells. The ways cells function are similar in all living organisms.	all of its parts function as a whole to perform the tasks necessary for the survival of the organism. Organisms have diverse body plans, symmetry and internal structures that contribute to their being able to survive in their environments.
Resources	McGraw Hill Inspire Science ODE Model Curriculum	McGraw Hill Inspire Science ODE Model Curriculum	McGraw Hill Inspire Science ODE Model Curriculum	McGraw Hill Inspire Science ODE Model Curriculum
Notes	<p><b>*PS.2</b> It is not the intent of this standard to encourage vocabulary identification (matching definitions with heat, temperature, and thermal energy).</p> <p><b>*PS.3</b> Instead, these are provided as conceptual tools for understanding the role of energy in physical, biotic, atmospheric, oceanic, and geologic systems</p>	<p><b>*PS.3</b> Chemical and elastic potential energy should not be included at this grade; <b>this is found in PS grade 7.</b></p> <p><b>*PS.4</b> Velocity and acceleration rates should <b>not be included</b> at this grade level; <b>these terms are introduced in high school</b></p> <p><b>*ESS.2</b> The emphasis is on learning how to identify the mineral by</p>	<p><b>*ESS.4</b> The emphasis should be on properties of soil rather than <b>memorization.</b></p> <p><b>*LS.1</b> Emphasis should be placed on the function and coordination of cell organelles as well as their roles in overall cell function. <b>Specific information about the organelles that need to</b></p>	<p><b>*LS.2</b> This is not a detailed discussion of the phases of mitosis or meiosis. The focus should be on reproduction as a means of transmitting genetic information from one generation to the next, cellular growth and repair.</p> <p><b>*LS.3</b> This is not a detailed discussion of the phases of mitosis or meiosis. The focus</p>

	<b>covered in grade 6 and subsequent grades and courses.</b>	<b>conducting tests (not through memorization).</b>	<b>be addressed at this grade level will be found in the model curriculum.</b>	<b>should be on reproduction as a means of transmitting genetic information from one generation to the next, cellular growth and repair.</b>
Vocabulary				

**Quarter(s) 1-4**

**SCIENCE INQUIRY AND APPLICATIONS**

**During the years of grades 5 through 8, all students must have developed the ability to:**

- SIA 1:** Identify questions that can be answered through scientific investigations;
- SIA 2:** Design and conduct a scientific investigation; Use appropriate mathematics, tools and techniques to gather data and information
- SIA 3:** Analyze and interpret data; Develop descriptions, models, explanations and predictions;
- SIA 4:** Think critically and logically to connect evidence and explanations;
- SIA 5:** Recognize and analyze alternative explanations and predictions;
- SIA 6:** Communicate scientific procedures and explanations.