

QUARTER 1	
<u>Life Sciences</u>	
<i>Benchmark A: Explain that the basic functions of organisms are carried out in cells and groups of specialized cells form tissues and organs; the combination of these cells make up multicellular organisms that have a variety of body plans and internal structures</i>	
<u>Indicators</u>	
1. Investigate the great variety of body plans and internal structures found in multicellular organisms.	
<i>Benchmark C: Explain how energy entering the ecosystems as sunlight supports the life of organisms through photosynthesis and the transfer of energy through the interactions of organisms and the environment.</i>	
<u>Indicators</u>	
2. Investigate how organisms or populations may interact with one another through symbiotic relationships and how some species have become so adapted to each other that neither could survive without the other.	
3. Explain how the number of organisms an ecosystem can support depends on adequate biotic (living) resources and abiotic (non-living) resources.	
6. Summarize the ways that natural occurrences and human activity affect the transfer of energy in Earth’s ecosystems.	
<i>Benchmark D: Explain how extinction of a species occurs when the environment changes and its adaptive characteristics are insufficient to allow survival.</i>	
<u>Indicators</u>	
4. Investigate how overpopulation impacts an ecosystem.	
5. Explain that some environmental changes occur slowly, while others occur rapidly.	
<u>Earth and Space Sciences</u>	
<i>Benchmark C: Describe interactions of matter and energy throughout the lithosphere, hydrosphere and atmosphere.</i>	
<u>Indicators</u>	
2. Explain that Earth’s capacity to absorb and recycle materials naturally can change the environmental quality depending on length of time.	
8. Describe how temperature and precipitation determine climactic zones (biomes).	

QUARTER 2	
<u>Life Sciences</u>	
<i>Benchmark A: Explain that the basic functions of organisms are carried out in cells and groups of specialized cells form tissues and organs; the combination of these cells make up multicellular organisms that have a variety of body plans and internal structures.</i>	
<u>Indicators</u>	
1. Investigate the great variety of body plans and internal structures found in multicellular organisms.	
<i>Benchmark C: Explain how energy entering the ecosystems as sunlight supports the life of organisms through photosynthesis and the transfer of energy through the interactions of organisms and the environment.</i>	
<u>Indicators</u>	
7. Explain that photosynthetic cells convert solar energy into chemical energy that is used to carry on life functions or is transferred to consumers and used to carry on their life functions.	
<u>Scientific Inquiry</u>	
<i>Benchmark A: Explain that there are differing sets of procedures for guiding scientific investigations and procedures are determined by the nature of the investigation, safety considerations and appropriate tools.</i>	
<u>Indicators</u>	
1. Explain that variables and controls affect the results of an investigation and that ideally one variable should be tested at a time; however it is not always possible to control all variables.	
2. Identify simple independent and dependent variables.	
3. Formulate and identify questions to guide scientific investigations that connect to science concepts and can be answered through scientific investigations.	
4. Choose appropriate tools and instruments and use relevant safety procedures to complete scientific investigations.	
<i>Benchmark B: Analyze and interpret data from scientific investigations using appropriate mathematical skills in order to draw valid conclusions.</i>	
<u>Indicators</u>	
5. Analyze alternative scientific explanations and predictions and recognize that there may be more than one good way to interpret a given set of data.	
6. Identify faulty reasoning and statements that go beyond the evidence or misinterpret the evidence.	
7. Use graphs, tables and charts to study physical phenomena and infer mathematical relationships between variables.	

QUARTER 3	
<u>Scientific Ways of Knowing</u>	
<i>Benchmark B: Explain the importance of reproducibility and reduction of bias in scientific methods.</i>	
<u>Indicators</u>	
1. Show that the reproducibility of results is essential to reduce bias in scientific investigations.	
2. Describe how repetition of an experiment may reduce bias.	
<i>Benchmark C: Give examples of how thinking scientifically is helpful in daily life.</i>	
<u>Indicators</u>	
3. Describe how the work of science requires a variety of human abilities and qualities that are helpful in daily life.	
<u>Physical Science</u>	
<i>Benchmark A: Relate uses, properties and chemical processes to the behavior and/or arrangement of the small particles that compose matter.</i>	
<u>Indicators</u>	
1. Investigate how matter can change forms but the total amount of matter remains constant.	
<i>Benchmark D: Describe that energy takes many forms, some forms represent kinetic energy and some forms represent potential energy; and during energy transformations the total amount of energy remains constant.</i>	
<u>Indicators</u>	
2. Describe how an object can have potential energy due to its position or chemical composition and can have kinetic energy due to its motion.	
3. Identify different forms of energy (e.g., electrical, mechanical, chemical, thermal, nuclear, radiant, and acoustic).	
4. Explain how energy can change forms but the total amount of energy remains constant.	
5. Trace energy transformation in a simple closed system.	

QUARTER 4	
<u>Earth and Space Science</u>	
<i>Benchmark C: Describe the interactions of matter and energy throughout the lithosphere, hydrosphere and atmosphere.</i>	
<u>Indicators</u>	
1. Explain the biogeochemical cycles which move materials between the lithosphere (land), hydrosphere (water) and atmosphere (air).	
3. Describe the water cycle and explain the transfer of energy between the atmosphere and hydrosphere	
4. Analyze the data on the availability of fresh water that is essential for life and for most industrial and agricultural processes. Describe how rivers, lakes and groundwater can be depleted or polluted becoming less hospitable to life and even becoming unavailable or unsuitable for life.	
5. Make simple weather predictions based on the changing cloud types associated with frontal systems.	
6. Determine how weather observations and measurements are combined to produce weather maps and that data for a specific location at one point in time can be displayed in a station model.	
7. Read a weather map to interpret local, regional and national weather.	
9. Describe the connection between the water cycle and weather-related phenomenon.	
<u>Science and Technology</u>	
<i>Benchmark A: Give examples of how technological advances, influenced by scientific knowledge, affect the quality of life.</i>	
<u>Indicators</u>	
1. Explain how needs, attitudes and values influence the direction of technological development in various cultures.	
2. Describe how decisions to develop and use technologies often put environmental and economic concerns in direct competition with each other.	
3. Recognize that science can only answer some questions and technology can only solve some human problems.	
<i>Benchmark B: Design a solution or product taking into account needs and constraints.</i>	
<u>Indicators</u>	
4. Design and build a product or create a solution to a problem given two constraints. (e.g., limits of cost and time for design and production or supply of materials and environmental affects).	