

**Grade: 5**  
**Subject area: Science**

| <b>Science as Inquiry</b>   | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
|---|-----------|-----------|-----------|-----------|
| Use standard and non-standard systems of classification   | D         | D         | D         | D         |
| Describe causes and effects   | D         | D         | D         | D         |
| Use the scientific process with teacher guidance and modeling Scientific Process: Question, Predict (Hypothesize), Experiment (Test), Collect and Display data, Reach conclusion  | D         | D         | D         | D         |
| Make predictions and inferences based on observation  | D         | D         | D         | D         |
| Investigate and explain discrepant events   | D         | D         | D         | D         |
| Know that scientific investigations involve asking and answering a question and comparing the answer to what scientists already know about the world  | D         | D         | D         | D         |
| Know that scientists use different kinds of investigations depending on the questions they are trying to answer   | D         | D         | D         | D         |
| Plan and conducts simple investigations   | D         | D         | D         | D         |
| Measure weight, mass, volume, length, and temperature using various devices to collect data   | D         | D         | D         | D         |
| Choose the appropriate unit and device for gathering scientific data (e.g. rulers, thermometers, magnifiers, microscopes)   | D         | D         | D         | D         |
| Collect, organize, display, and analyze data in a variety of forms  | D         | D         | D         | D         |
| Know that good scientific explanations are based on evidence and scientific knowledge   | D         | D         | D         | D         |
| Know that scientists make the results of their investigations public; they describe the investigations in ways that enable others to repeat the investigations  | D         | D         | D         | D         |
| Know that although the same scientific investigation may give slightly different results when it is carried out by different persons, or at different times or places, the general evidence collected from the investigation should be replicable by others | D         | D         | D         | D         |
| Know that scientists review and ask questions about the results of other scientist's work   | D         | D         | D         | D         |
| Know that different people may interpret the same set of observations differently   | D         | D         | D         | D         |
| <b>Physical Science</b>   | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
| Know properties can be measured   | D         | D         | D         | D         |
| Know matter may be composed of parts too small to be seen without magnification   |           | D         | P         |           |
| Identify how structures of the world have similarities and differences  | D         | D         | D         | D         |
| Identify matter in 3 forms, ability to change form  | D         | P         |           |           |
| Know matter is neither created / destroyed, but can change form   | D         | D         | D         | D         |
| Investigate substances that dissolve to form solutions  |           |           |           | I         |
| Discover that substances are soluble or insoluble in water  |           |           |           | I         |
| Discover that two or more materials can be combined to form a new substance that has new properties   |           |           |           | I         |
| Investigate how properties change by heating and cooling  | D         |           |           |           |
| Explain that energy is the ability to do mechanical work or to produce a change in temperature  | P         |           |           |           |
| Identify the many different types of energy   | D         |           |           |           |
| Describe how people's use of energy has changed over time   | D         |           |           |           |
| Know that heat is a common byproduct when energy changes form   | D         |           |           |           |
| Know that heat can move by conduction and some materials are better conductors  | p         |           |           |           |
| Infer static electricity produces positive & negative charges; like charges repel, opposites attract. Investigate magnetic attraction to steel and iron materials   | P         |           |           |           |
| Discover that static electricity jumps from negative to positive charge   | P         |           |           |           |
| Infer that electrical energy can be dangerous   | P         |           |           |           |
| Investigate that light travels in straight paths  |           |           | P         |           |
| Identify reflection, refraction, and absorption as properties of light  |           |           | D         |           |
| Observe that concave and convex lenses can change the path of light   |           |           | D         |           |
| Investigate that light is a form of energy  |           |           | D         |           |
| Know that Earth's gravity pulls anything toward it without touching it  |           |           | D         |           |
| Know that an object's motion can be described by tracing and measuring its position over time   |           |           | D         |           |
| <b>Life Science</b>   | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
| Recognize and discuss the value of the human family (*2)  |           | D         | D         |           |
| Know different ways living things can be grouped  |           | D         | P         |           |
| Know that plants and animals progress through life cycles or birth,   |           |           |           |           |

|   |           |           |           |           |
|---|-----------|-----------|-----------|-----------|
| growth and development, reproduction, and death; the details of these life cycles are different for different organisms   |           | D         | D         |           |
| Know that plants and animals progress through life cycles or birth, growth and development, reproduction, and death; the details of these life cycles are different for different organisms |           | D         | P         |           |
| Explain that the skeletal, muscular, circulatory, and respiratory systems interact with one another and perform specific functions  |           | D         | D         |           |
| Know that the behavior of the individual organism is influenced by internal cues and external cues and that humans and other organisms have senses that help them to detect these cues      |           | D         | D         |           |
| Know that an organism's patterns of behavior are related to the nature of that organism's environment   | D         | D         | D         |           |
| <b>Earth and Space Science</b>  | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
| Relate that the water cycle consists of evaporation, condensation, precipitation, and the accumulation of surface and ground water  | D         | P         |           |           |
| Identify rain, snow, hail, and sleet as forms of precipitation  | D         | P         |           |           |
| Identify the Sun as the source of energy that drives the water cycle  | D         | P         |           |           |
| Know that the Sun provides the light and heat necessary to maintain the temperature of the Earth  | D         | P         |           |           |
| Apply that weather and climate affect life  | D         | P         |           |           |
| Relate that a cloud or fog are a large collection of tiny water droplets formed around dust particles   | D         | P         |           |           |
| Identify stratus, cumulus, and cirrus as the three main categories of clouds  |           | P         |           |           |
| Observe that weather instruments measure temperature, air pressure, wind direction and speed, and precipitation   | P         |           |           |           |
| Illustrate that weather maps use symbols to display weather data  | D         | P         |           |           |
| Explain that technology assists meteorologists in making forecasts  | P         |           |           |           |
| Know that air is a substance that surrounds us, takes up space, and moves around as wind  | P         |           |           |           |
| Know that night and day are caused by the Earth's rotation on its axis  |           |           | P         |           |
| Infer that the tilt of the Earth's axis in relation to the Sun causes the seasons   |           |           | P         |           |
| Relate that the Earth is part of a solar system consisting of a sun, several planets and their moons, asteroids, comets, and meteors  |           |           | P         |           |
| Analyze that the planets rotate on their axis and revolve around the Sun  |           |           | P         |           |
| Explain that gravity holds people and objects to the Earth's surface and is present throughout the solar system   |           |           | P         |           |
| Relate that objects in the solar system are in constant motion caused by natural forces which impact many changes we see in our world   |           |           | P         |           |
| Know that telescopes magnify distant objects in the sky and dramatically increase the number of stars we can see  |           |           | D         | P         |
| Know that new planets and new solar systems are being discovered  |           |           | D         | P         |
| Know that astronomical objects in space are massive in size and are separated from one another by vast distances  |           |           | D         | P         |
| Identify that the space program and space age technology have led to the development of new products, discoveries, and knowledge of the solar system and beyond                             |           |           | D         | P         |
| <b>Science and Technology</b>   | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
| Recognize that math is a tool of science  | D         | D         | D         | D         |
| Recognize that science is assisted by technology  | D         | D         | D         | D         |
| Recognize that inventions are a result of science   | D         | D         | D         | D         |
| Recognize that past, present, and future technologies can affect our daily lives  | D         | D         | D         | D         |
| Investigate how different types of materials are used for different functions   | D         | D         | D         | D         |
| Infer that the properties of materials can be used to make choices in creating models and structures  | D         | D         | D         | D         |
| Investigate how different materials have different strengths  | D         | D         | D         | D         |
| Investigate how the stability and strength of a structure is affected by its shape  | D         | D         | D         | D         |
| Discover that people use a process to design and develop a product  | D         | D         | D         | D         |
| Show that product design is based on human needs  | D         | D         | D         | D         |
| Relate that design, structure, and construction must be considered when usable products are developed   | D         | D         | D         | D         |
| <b>Science in Personal and Social Perspective</b>   | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
| Articulate basic human rights and responsibilities (*3)   | D         | D         | D         | D         |
| Identify oneself as belonging to a family of global people where there are many differences (*6)  | D         | D         | D         | D         |
| Participate in service projects and identify these with the Christian community (*2)  | D         | D         | D         | D         |
| Explain how the environment is God's creation and ours to respect   | D         | D         | D         | D         |

|  |           |           |           |           |
|--|-----------|-----------|-----------|-----------|
| Demonstrate that we all have a role to play in preserving the environment  |           |           | D         | D         |
| Give examples from daily life for conserving the environment   |           |           | D         | D         |
| Discover that natural resources are used to make products people use   |           |           | D         | D         |
| Show that resources are either renewable or non-renewable  |           |           | D         | D         |
| Illustrate that there are many ways to conserve energy   |           |           | D         | D         |
| Relate that landfills are used for the disposal of solid waste   |           |           | D         | D         |
| Discover that decomposition is one of nature's recycling methods   |           |           | D         | D         |
| Identify that Reduce, Reuse, and Recycle are ways to reduce waste  |           |           | D         | D         |
| Explain that the individual has a role in regional and global interdependence  |           |           | D         | D         |
| Demonstrate an awareness of interactions between technology and attitudes, beliefs, individual and societal needs, economics, and politics |           |           | D         | D         |
| Discover that humans have an impact on local, regional, and global environments and a responsibility for their protection                  |           |           | D         | D         |
| <b>History and Nature of Science</b>   | <b>Q1</b> | <b>Q2</b> | <b>Q3</b> | <b>Q4</b> |
| Discuss the many different types of work roles and professions with respect (*5)   | D         | D         | D         | D         |
| Recognize that science is a part of everyday life  | D         | D         | D         | D         |
| Recognize that all cultures, races, ages, and sexes have made contributions to science and technology throughout history                   | D         | D         | D         | D         |
| Recognize that science is a field open to anyone   | D         | D         | D         | D         |
| Recognize that a diversity of careers exist in science   | D         | D         | D         | D         |
| Recognize that students are scientific thinkers  | D         | D         | D         | D         |
| Recognize that science has a rich history  | D         | D         | D         | D         |
| Recognize that science is an ongoing process with knowledge that changes over time as new facts are acquired                               | D         | D         | D         | D         |

I: Introduced D: Developing P: Proficient