

## SCIENCE CURRICULUM GUIDE

### GRADE 4 FIRST QUARTER- Materials

<b>Content</b>	<b>Content Standards</b> <i>Learners learn that:</i>	<b>Learning Competency</b> <i>The learners...</i>
<ol style="list-style-type: none"> <li>1. Science inventions</li> <li>2. Materials and their uses</li> <li>3. Gathering scientific information</li> </ol>	<ol style="list-style-type: none"> <li>1. Science inventions have brought about major changes to our daily lives.</li> <li>2. Chemical properties of materials determine their uses.</li> <li>3. Communication skills and open mindedness are needed in solving environmental issues.</li> </ol>	<ol style="list-style-type: none"> <li>1. use information from secondary sources to identify a famous Filipino and/or foreign scientist and their invention/s;</li> <li>2. use information from the home or the local community to identify a science invention and explain its impact on their everyday life;</li> <li>3. describe the chemical properties of materials, such as they can be burnt, react with other materials, or are degradable or biodegradable;</li> <li>4. describe changes in properties of materials when exposed to certain changes in temperature, such as changes when wood or coal are burned;</li> <li>5. demonstrate ways to minimize harmful changes in materials, such as restriction of burning of waste materials, and care in handling reactive materials;</li> <li>6. identify issues and concerns in the local community and how they could be addressed by science, such as the treatment of waste; and</li> <li>7. apply science process skills and attitudes in conducting a guided survey about environmental issues and concerns including grouping and classifying, communicating, and open mindedness.</li> </ol>

#### **Performance Standard**

*By the end of the Quarter, learners describe chemical properties of materials and changes to them. They demonstrate an understanding that science processes can solve everyday problems and use creativity and determination to provide examples. They exhibit objectivity and open-mindedness in gathering information related to environmental issues and concerns in the community.*

#### **Suggested Performance Task/s**

- A. Create a simple model, illustration or write a story about a favorite science invention that you use in everyday life.
- B. Plan and produce a sample of useful fertilizer from household waste.

**GRADE 4 SECOND QUARTER - Living Things**

<b>Content</b>	<b>Content Standards</b> <i>Learners learn that:</i>	<b>Learning Competency</b> <i>The learners...</i>
<ol style="list-style-type: none"> <li>1. Systems in plants and animals</li> <li>2. Plants and animals and their habitats</li> <li>3. Life cycles of animals</li> <li>4. Animals and the food they eat</li> <li>5. Food chains</li> </ol>	<ol style="list-style-type: none"> <li>1. Animals and plants have systems that function to keep them alive.</li> <li>2. Animals and plants live in habitats that meet their basic needs.</li> <li>3. Animals have life cycles that include development and reproduction.</li> <li>4. Animals can be grouped according to the food that they eat.</li> <li>5. Food chains show a series of living things that depend on each other for food.</li> <li>6. Using drawings, tables, and flowcharts is an important skill in learning science concepts and in learning about science processes.</li> </ol>	<ol style="list-style-type: none"> <li>1. describe in simple terms how the following human body systems work: muscular, skeletal, digestive, circulatory, and respiratory;</li> <li>2. observe the root and shoot system in plants and describe why they are important;</li> <li>3. use a drawing or diagram to classify some Philippine animals and plants, based on their habitat: some live on land (terrestrial), live in water (aquatic) or fly in the air (aerial);</li> <li>4. make a list or draw up a table with examples of animals and plants in a particular habitat, such as a garden, rice field, seashore, and mangrove swamp;</li> <li>5. use flow charts to compare the different stages in the life cycle of animals, such as a butterfly, frog, chicken, and human;</li> <li>6. use information from secondary sources to group animals according to the food they eat. Some are:               <ol style="list-style-type: none"> <li>a. plant eaters (herbivores),</li> <li>b. meat eaters (carnivores), and</li> <li>c. plant and meat-eaters (omnivores); and</li> </ol> </li> <li>7. draw a simple food chain using living things from the Philippines and label them as herbivores, carnivores, and omnivores.</li> </ol>
<p><b>Performance Standard</b></p> <p><i>By the end of the Quarter, learners identify that plants and animals have systems whose function is to keep them alive. They observe, describe, and create representations to show how living things interact with their habitat, survive, and reproduce in specific environments. They use flowcharts to show the feeding relationship among different organisms within a given environment.</i></p>		
<p><b>Suggested Performance Task</b></p> <p>Create a diorama, terrarium, or an aquarium to illustrate how some plants or animals live on land or in water.</p>		

**GRADE 4 THIRD QUARTER - Force, Motion, and Energy**

<b>Content</b>	<b>Content Standards</b> <i>The learners learn that:</i>	<b>Learning Competencies</b> <i>The learners...</i>
<ol style="list-style-type: none"> <li>1. Forces and movement</li> <li>2. Observing, measuring, and predicting</li> <li>3. Magnets</li> <li>4. Sound, light, and heat energy</li> </ol>	<ol style="list-style-type: none"> <li>1. Science processes help in observing and predicting how things move.</li> <li>2. Pushes and pulls can change the position and shape of objects.</li> <li>3. Gathering scientific information helps explain the behavior of objects and materials.</li> <li>4. Magnets affect some objects and materials without touching them.</li> <li>5. Energy is present whenever there is movement, sound, light, or heat.</li> </ol>	<ol style="list-style-type: none"> <li>1. participate in guided activities to discover and predict how rigid and soft objects can be moved and/or changed in shape;</li> <li>2. measure accurately the distance and time when things move using simple equipment;</li> <li>3. identify that how far an object moves in a given time is called speed;</li> <li>4. construct and label simple graphs of different speeds including stationary and uniform speeds, both fast and slow;</li> <li>5. participate in guided activities to demonstrate that pushes and pulls can be used to change the speed and direction of an object including making it go faster, turn it to a different direction, slow it down, and stop it;</li> <li>6. demonstrate through guided activities that pushes and pulls can be used to change the speed and direction of an object;</li> <li>7. determine how forces can change the shape of objects such as when they are pushed, pulled, stretched, bent, twisted, or squeezed;</li> <li>8. carry out guided investigations to identify the properties of magnets, including how they affect other magnets and objects made of different materials;</li> <li>9. identify examples of how objects can affect other objects even when they are not in contact with each other, such as magnets attracting other objects, light from the sun affecting our eyes, and skin, and loud noises hurting our ears;</li> <li>10. identify that energy is something that can cause change including light, sound, and heat energy; and</li> <li>11. observe and identify sources and uses of light, sound, and heat energy at school, at home and in the local community.</li> </ol>

**Performance Standard**

*By the end of the Quarter, learners use simple equipment and processes to measure and record data related to movement and describe and predict the way things around them move using more scientifically technical language and concepts, such as speed and force. They*

demonstrate an understanding that science processes are used to gain deeper understanding about forces and energy that cannot be seen directly, including the properties of magnet, light, sound, and heat. Learners apply their observation skills and objectivity to identify where energy is evident in their local communities and how it is used by people.

**Suggested Performance Tasks**

- A. Develop a poster to show some sources and uses of heat energy in your home or neighborhood.
- B. Collaborate in a small group to develop a safety guide that explains how to stay safe around intense light and sound. Include information on ways to protect eyes and ears and explain how the suggested ways could provide protection.

**GRADE 4 FOURTH QUARTER - Earth and Space**

<b>Content</b>	<b>Content Standards</b>	<b>Learning Competencies</b>
1. Soils 2. Characteristics of weather 3. Characteristics of the Sun	<i>The learners learn that:</i> 1. Soil and water resources are needed by plants and animals to live and grow. 2. Characteristics of the weather can be observed and measured. 3. The Sun is a ball of hot gases about 100 times the size of Earth, which radiates light energy needed by living things.	<i>The learners...</i> 1. participate in guided activities using simple equipment to compare different types of soil including sandy, clay, silt, and loam, including comparing the ability of the soils to hold water; 2. recognize that water is one of the basic needs of plants and animals; 3. participate in a guided investigation to identify the effect of different types of soil on the growth of plants; 4. identify some of the basic characteristics used to describe the weather, such as air temperature, air pressure, wind speed, wind direction, humidity, rain, and cloud cover; 5. use weather instruments to measure and record some of the characteristics of weather during a school day; 6. examine a local weather chart to make simple interpretations about the local weather and how it might change and describe and practice safety precautions to use during poor or extreme weather conditions; 7. describe some of the overall characteristics of the Sun, such as its composition, its size, and the main energy it radiates; 8. describe the changes in the direction and length of shadows from a shadow stick and use the information to infer why the Sun changes position during a day; and

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|  |  | 9. make suggestions about the importance of the Sun to living things for a group or class discussion and confirm and record ideas by referring to trustworthy secondary sources of information. |
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**Performance Standard**

*By the end of the Quarter, learners* use simple equipment to identify how types of soil hold water to support the growth of plants. They use instruments and secondary sources to measure and describe the characteristics of weather and use the information to make predictions about weather patterns in their local area. They demonstrate appreciation for the dangers of extreme weather events and use safe practice to protect themselves if they are caught in bad weather. Learners use personal observations and reliable secondary information sources to describe the Sun and explain its importance to life on Earth.

**Suggested Performance Task**

Construct a sundial that can indicate the time of the day.