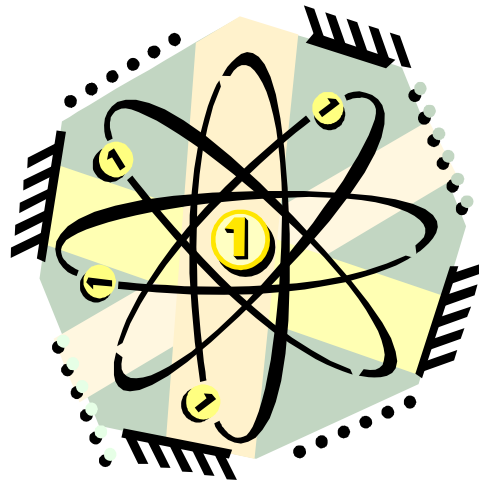


BASIC EDUCATION CURRICULUM
(Philippine Elementary Learning Competencies)



SCIENCE AND HEALTH

SCIENCE AND HEALTH

DESCRIPTION

Science and Health aims to help the Filipino child gain a functional understanding of science concepts and principles linked with real life situations, acquire science skills as well as scientific attitudes and values needed in solving everyday problems. These pertain to health and sanitation, nutrition, food production, and the environment and its conservation.

There is no Science and Health for Grades I and II but simple science and health concepts which include the child's interaction to his immediate environment are contents of English. These concepts reinforce the sensory-perceptual activities introduced in the 8-week ECD Curriculum. Likewise, process skills may be developed in Makabayan subject like Sibika at Kultura. Teaching Science and Health will formally start in Grade III using English as medium of instruction. In Grades IV-VI, more complex study of Science concepts will be taken up in preparation for High School work.

TIME ALLOTMENT

Learning Areas	Daily Time Allotment					
	I	II	III	IV	V	VI
Science and Health (<i>integrated in English for Grades I & II</i>)	-	-	40	60	60	60

- Science and Health for Grades I and II is integrated in English. This is used as vehicle in developing the skills in English.
- Grade III is given a 40-minute daily time allotment. In Grades IV, V and VI, there is an increase of 20 minutes in the daily time allotment, to give more time and emphasis on the study of Science concepts and processes.

EXPECTATIONS

GOAL: *Demonstrate understanding of how science, technology and health relate to the comprehension of the environment and application of skills, attitudes and values in solving varied life situations*

At the end of **Grade VI**, the learner is expected to develop functional understanding and application of science and health concepts, basic and integrated science process skills/thinking skills, and acquire values, attitudes and practices related to body systems (circulatory and nervous), ecosystem, materials and their uses and effects, energy transformation and conservation, movement of the earth's crust, climate and seasons and beyond the solar system.

At the end of **Grade V**, the learner is expected to develop functional understanding application of science and health concepts, basic and integrated science process/thinking skills, and acquire values, attitudes and practices related to body systems (reproductive, respiratory and urinary), disease prevention and control, classification of plants and animals, plant and animal adaptation, changes in matter, electrical energy, simple machines, rocks, water cycle, typhoons, tides and the solar system.

At the end of **Grade IV**, the learner is expected to develop functional understanding and application of science and health concepts, basic process/thinking skills, and acquire values, attitudes, and practices related to body systems (skeletal, muscular and digestive), disease prevention and control, animal and plant reproduction, soil erosion, weather elements, reaction of different substances, friction and heat energy, earth, moon and sun.

At the end of **Grade III**, the learner is expected to develop functional understanding and application of science and health concepts, basic process/thinking skills, and acquire values, attitude and practices related to one's sense organs, personal health, food, nutrition, growth and development, characteristics of plants and animals, caring for plants and animals, states of matter, heat, light and sound energy, force and motion, earth resources and their conservation, weather and the sun as source of light and heat.

SCIENCE AND HEALTH

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>I. PEOPLE</p> <p>1. Infer that our sense organs make us aware of things around us</p> <p>1.1 Identify the sense organs and Their functions</p> <p>1.2 Observe the characteristics of things around us using the different sense organs</p> <p>2. Describe the parts of the sense organs from models and explain how they work</p> <p>2.1 Identify the main parts of each sense organ</p> <p>2.2 Explain the functions of each part</p> <p>3. Practice desirable health habits that will help prevent/control common</p>	<p>I. PEOPLE</p> <p>1. Describe the structure and function of the skeletal system</p> <p>1.1 Identify the bones that makeup the skeletal system</p> <p>1.2 Identify the bones that protect the internal organs</p> <p>1.3 Demonstrate how the skeletal system enables us to move</p> <p>2. Describe the structure and function of the muscular system</p> <p>2.1 Illustrate how muscles are connected to the bones</p> <p>2.2 Explain/Demonstrate how muscles cause body movement</p> <p>2.3 Cite simple body activities that show the coordinated function of of the skeletal and muscular systems</p> <p>3. Practice proper care of the skeletal and muscular systems</p>	<p>I. PEOPLE</p> <p>1. Describe the structure and function of the human reproductive system</p> <p>1.1 Identify the male/female reproductive system and their major parts</p> <p>1.2 Relate the structure of the male/female reproductive system to its function in reproduction</p> <p>1.3 Explain the process of fertilization in humans</p> <p>2. Describe bodily changes of a male/ female at puberty</p> <p>2.1 Explain certain physical changes during puberty</p> <p>2.2 Relate the menstrual cycle of the female to the ability to get pregnant or reproduce</p> <p>3. Practice hygiene in caring for the reproductive organs</p>	<p>I. PEOPLE</p> <p>1. Describe the structure and function of the circulatory system</p> <p>1.1 Identify the major parts of the circulatory system</p> <p>1.2 Describe the function of each part</p> <p>1.3 Explain the function of the circulatory system</p> <p>1.4 Illustrate/Demonstrate the movement of the blood throughout the body</p> <p>2. Describe the common ailments affecting the circulatory system and their symptoms</p> <p>3. Practice desirable habits that help prevent/control common ailments</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>ailments and keep the senses healthy</p> <p>3.1 Identify common ailments affecting the sense organs</p> <p>3.2 Demonstrate ways of keeping the sense organs healthy</p> <p>4. Demonstrate first aid for nose bleeding, for foreign bodies in the eye, ear and nose</p> <p>5. Infer that changes take place as children grow</p>	<p>3.1 Identify injuries and diseases that can harm the skeletal and muscular systems</p> <p>3.2 Demonstrate first aid treatment for sprains, cramps and simple fractures</p> <p>3.3 Show concern and right attitude towards handicapped persons</p> <p>4. Describe the structure and function of the digestive system</p> <p>4.1 Identify the digestive system and its major parts</p> <p>4.2 Explain the function of each part</p> <p>4.3 Trace the path of food in the digestive system and the changes the food undergoes</p> <p>4.4 Explain why food has to be digested</p> <p>5. Practice desirable health habits to keep the digestive system healthy</p>	<p>3.1 Identify health habits to keep the reproductive organs healthy</p> <p>3.2 State the importance of protecting ones sensitive parts/reproductive organs</p> <p>4. Describe the structure and function of the respiratory system</p> <p>4.1 Identify the respiratory system and its major parts</p> <p>4.2 Explain the function of each part</p> <p>4.3 Construct a model to demonstrate the mechanism of breathing</p> <p>4.4 Trace the path of air and what happens to it in different parts of the respiratory system</p> <p>5. Infer that some common ailments of the respiratory system are caused by pollution, smoking or inhaling drugs</p>	<p>of the circulatory system</p> <p>3.1 Identify health habits to keep the heart, blood and blood vessels healthy</p> <p>3.2 Demonstrate ways of caring for the circulatory system</p> <p>4. Describe how the nervous system works</p> <p>4.1 Identify the nervous system and major parts</p> <p>4.2 Explain the function of each part</p> <p>4.3 Describe how the nervous system works</p> <p>4.4 Practice desirable habits that help prevent and control common ailments of the nervous system</p> <p>5. Describe a healthy person</p> <p>5.1 Discuss the physical, mental, emotional and social needs of a person</p>
<p>5.1 Measure one's height and weight</p>	<p>5.1 Name ways of preventing/controlling common ailments of</p>	<p>5.1 Name common ailments affecting the respiratory system</p>	<p>5.2 Describe the effect of physical, mental and emotional state on</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>5.2 Compare one's height and weight now and that of the previous year</p> <p>5.3 Infer that one changes in physical capabilities and social interest</p> <p>5.3.1 Identify physical/ social activities one participates in then and now</p> <p>5.3.2 Compare one's present physical and social activities with those of the previous years</p> <p>5.4 Cite evidences that show changes in one's mental abilities</p> <p>5.5 Compare changes in one's ability to speak, write, read, draw, solve</p> <p>6. Infer that some factors affect one's growth and development</p>	<p>the digestive system</p> <p>5.2 Demonstrate ways of keeping the digestive system healthy</p>	<p>5.2 Describe the causes, symptoms, prevention and treatment of these diseases</p> <p>6. Practice good health habits to keep the respiratory system healthy</p>	<p>one's health</p> <p>5.3 Describe the effect of relationship with family, friends and society on mental, emotional and physical well-being</p> <p>5.4 Practice ways of maintaining one's health such as</p> <ul style="list-style-type: none"> - preventing common ailments - identifying places or people to seek help from - demonstrating a positive attitude to stay healthy
<p>6.1 Identify some factors affecting one's growth and development such as heredity, food, rest, sleep, recreation, safe and healthful environment</p>		<p>6.1 Describe proper ways of caring for the respiratory system</p>	

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>6.2 Observe that one grows and develops like one or both of his parents</p> <p>6.3 Discuss that eating a variety of nutritious food in the right amount is necessary for one's growth and development</p> <p>6.3.1 Classify foods according to the 3 basic food groups</p> <p>6.3.2 State that eating the right kind of food in the right amount is necessary for one's growth and development</p> <p>6.3.3 Practice desirable health and food habits</p> <p>6.4 Explain how rest, sleep and recreation affect one's growth and development</p> <p>6.5 Compare a healthful and an unhealthful surrounding</p> <p>6.5.1 Identify things in the surroundings that are good for people's health and well-being</p>		<p>6.2 Demonstrate ways of caring for persons affected by common ailments of the respiratory system</p>	
<p>6.5.2 Identify things in the surroundings which are harmful to people's health and well-being</p> <p>7. State that a healthy person grows taller, bigger, heavier, faster</p>		<p>7. Describe the structure and function of the urinary system</p>	

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>8. Infer that certain illnesses/ diseases slow down one's growth and development</p> <p>8.1 Describe how illnesses/ diseases slow down one's growth and development</p> <p>9. Observe that a small family can meet its basic needs better than a big family</p>		<p>7.1 Identify the urinary system and its major parts</p> <p>7.2 Describe how urine is formed and eliminated from the body</p> <p>7.3 Explain how other body wastes are removed (e.g. solid waste through the digestive system, gaseous waste through the respiratory system, some liquid waste through the skin)</p> <p>7.4 Practice desirable health habits that help prevent/control common ailments affecting the urinary system</p>	
<p>II. ANIMALS</p> <p>1. Identify the common animals in the locality</p>	<p>II. ANIMALS</p> <p>1. Infer how animals reproduce sexually</p> <p>1.1 Identify animals hatched from eggs</p>	<p>II. ANIMALS</p> <p>1. Infer that animals live in places where they can find food</p> <p>1.1 Explain why animals live in a particular habitat</p>	<p>II. ANIMALS, PLANTS and ENVIRONMENT (Interrelationship in the Ecosystem)</p> <p>1. Operationally define an ecosystem</p> <p>1.1 Identify living things and non-living things in a mini-ecosystem ecosystem e.g. aquarium, fallen log, pond</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>2. Observe different animals in the locality</p> <p>2.1 Identify the body parts of animals and their functions</p>	<p>1.2 Identify animals born as baby animals</p> <p>1.3 Illustrate that some animals develop from a fertilized egg</p> <p>2. Describe the different stages in the life cycle of some animals</p> <p>2.1 Describe the life cycle of some animals e.g. frog, butterfly, mosquito, cow</p>	<p>1.2 Describe how animals get/eat their food using certain body parts</p> <p>1.4 Infer the kind of food an animal eats from the appearance of its mouth parts</p> <p>2. Classify animals according to the food they eat e.g. carnivorous, herbivorous, omnivorous</p>	<p>1.2 Describe feeding interrelationships among the living organisms</p> <p>1.2.1 Construct food chains and food webs to illustrate feeding relationships</p> <p>1.3 Construct the food nutrient cycle</p> <p>1.4 Explain the importance of decomposers in making food nutrients available to plants</p> <p>2. Illustrate the interdependence of plants and animals for gasses through the oxygen-carbon dioxide cycle</p> <p>2.1 Construct a diagram of the oxygen-carbon dioxide cycle</p>
<p>2.2. Describe the relationship of body parts of animals as to movement, habitat, food getting</p> <p>3. Compare common animals</p> <p>3.1 Give one or more similarities between two animals of the same kind</p>	<p>2.2 Describe the changes in animals as they develop and grow</p> <p>3. Infer the beneficial/harmful effects of animals to people</p> <p>3.1 Cite how some animals are useful to people in the community</p>	<p>3. Infer how some animals adapt to a particular environment</p> <p>3.1 Describe how animals adapt to a particular environment for protection and survival e.g. by changing their color</p>	<p>2.2 Interpret the diagram of the oxygen-carbon dioxide cycle</p> <p>3. Investigate interdependence between living and non-living components in bigger ecosystem e.g. forest, lake, river</p> <p>3.1 Explain the importance of forest</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>3.2 Give one or more differences between two animals of the same kind</p> <p>3.3 Give one or more similarities between two animals of different kinds</p> <p>3.4 Give one or more differences between two animals of different kinds</p> <p>4. Classify animals according to the body covering, food eaten, presence or absence of certain body parts, movement, habitat</p>	<p>3.2 Explain how animals may harm people</p> <p>3.2.1 Identify some animals that are carriers of diseases, sources of infections, allergy and injury</p> <p>4. Practice safety measures while caring for animals</p>	<p>4. Classify animals into major groups</p>	<p>3.2 Describe the effects of deforestation</p> <p>4. Infer that some activities of people disrupt the cycles of an ecosystem</p>
	<p>4.1 Explain why we should observe safety measures while caring for animals</p> <p>4.2 Describe some safety measures to observe while caring for animals</p>	<p>4.1 Classify animals into vertebrates and invertebrates</p> <p>4.1.1 Identify characteristics of vertebrates/invertebrates</p> <p>4.2 Classify vertebrates into mammals, birds, reptiles, amphibians, and fishes</p> <p>4.2.1 Identify characteristics of each group of vertebrates</p> <p>4.3 Classify invertebrates into arthropods, coelenterates,</p>	<p>4.1 Identify some human activities that disrupt the cycle in an ecosystem e.g. deforestation, intensive farming, fish culture, inefficient garbage disposal</p> <p>4.2 Explain the harmful effects of certain activities on a bigger or more complex ecosystem e.g. pond system</p> <p>4.3 Discuss activities to address the above problems(e.g. adopt a</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>5. Infer that animals need food, air, water and shelter in order to grow</p> <p>5.1 Cite evidences that animals need air, food, water and shelter in order to grow</p> <p>5.2 Infer what may happen if animals will not get food, air, shelter and water</p>		<p>annelids, crustaceans, echinoderms, insects, arachnids, mollusk</p> <p>4.3.1 Identify characteristics of each group of invertebrates</p> <p>5. Explain the importance of coral reefs</p> <p>5.1 Describe coral reefs</p> <p>5.2 Identify the importance of coral reefs</p>	<p>river or lake)</p> <p>5. Predict the effects of over-population in a community</p> <p>5.1 Infer that shortage of food, water, and space may occur due to a growing population</p> <p>5.2 Infer that land, water and air may become limited and eventually polluted due to overpopulation</p>
<p>6. Practice care and concern for animals</p> <p>6.1 Explain why animals need care</p>		<p>5.3 Discuss practices that cause destruction of coral reefs</p> <p>5.4 Predict what will happen when coral reefs are destroyed</p> <p>5.5 Identify ways of saving coral reefs</p> <p>5.6 Participate in efforts to save coral reefs</p>	<p>5.3 Infer that overpopulation affects one's health and that of the community</p> <p>5.4 Infer that rapid population growth upsets the ecological balance</p> <p>6. Describe strategies for coping with rapid increase in population</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>2. Compare plants according to observable characteristics of their parts</p>	<p>1.3 Describe the process of fertilization in flowers leading to to the development of seeds</p> <p>1.4 Identify the parts of the flower that develops into fruits and seeds</p> <p>2. Describe the changes in a germinating seed</p>	<p>1.2.1 Observe what happens to plants grown in the absence of any of the factors needed for photosynthesis</p> <p>1.3 Explain the process of photosynthesis using a diagram</p> <p>2. Explain the importance of plants to human beings and other animals</p>	
<p>2.1 Identify similarities and differences of plants/ plant parts as to:</p> <ul style="list-style-type: none"> - color, size, and shape - size/texture of stems/roots - color, shape, size and smell of flowers - texture and edges of leaves - flowering and non-flowering <p>3. Classify plants according to common characteristics</p> <p>e.g. color, size and shape of leaves/flowers, size, texture of stems</p>	<p>2.1 Identify the main parts of a seed</p> <p>2.2 Observe changes in a germinating seed</p> <p>2.3 Explain the function of each part of the seed by observing a germinating seed</p> <p>3. Identify the factors needed in seed germination</p> <p>3.1 Perform an experiment on seed germination</p> <p>3.1.1 Identify the variables in the experiment</p>	<p>2.1 Identify plant/plant parts used for food, medicine, etc.</p> <p>3. Infer that plants have specific structures and characteristics for adaptation and survival</p> <p>3.1 Describe the special characteristics of plants which help them adapt to the environment and reproduce their own kind</p>	

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>4. Infer that plants and plant parts have many uses</p> <p>4.1 Identify the uses of plants and their parts</p>	<p>3.1.2 Interpret the results of the experiment</p> <p>3.2 Collect data on what seeds need to germinate</p> <p>4. Infer how a seed may be dispersed or brought to other places based on its structure/properties</p> <p>4.1 Observe the structure/properties of certain fruits and seeds</p>	<p>3.2 Cite examples of plants that can grow in specific environments</p> <p>4. Classify plants into major groups: flowering plants, cone-bearing plants, ferns and mosses</p> <p>4.1 Identify characteristics of each group of plant</p>	
<p>4.2 State that plant parts have many uses</p> <p>5. Demonstrate ways of propagating plants</p> <p>5.1 Identify ways of propagating plants</p> <p>5.1.1 Name plants that grow from seeds, stem cuttings, leaves, roots</p> <p>5.2 Describe the different ways of propagating plants</p> <p>5.3 Apply different ways of</p>	<p>4.2 Describe how certain structures/properties help in seed dispersal</p> <p>5. Demonstrate ways of growing plants by asexual reproduction</p> <p>5.1 Describe how some plants reproduce asexually e.g. runners, rhizomes, bulbs</p> <p>5.2 Apply ways of propagating plants asexually</p>	<p>4.2 Group plants according to common characteristics</p> <p>4.3 Explain other ways of grouping plants</p> <p>4.4 Describe the importance of grouping plants</p>	

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>propagating plants</p> <p>6. Demonstrate ways of caring for and conserving plants</p> <p>7. Practice precautionary measures in handling plants</p> <p>8. Apply first aid treatment of allergies/ skin irritation caused by plants</p>			
<p>IV. MATTER</p> <p>1. Infer that matter is anything that occupies space and has mass/ weight</p> <p>1.1 Identify objects around</p> <p>1.2 Demonstrate that objects have weight using a balance</p> <p>1.3 Demonstrate that objects occupy space</p> <p>1.4 Defines matter</p> <p>2. Infer that the states of matter are solid, liquid and gas</p> <p>2.1 Describe the different characteristics of solids</p> <ul style="list-style-type: none"> . Shape . Space . Weight . Mass <p>2.2 Explain that liquids have different</p>	<p>IV. MIXTURES and SOLUTIONS</p> <p>1. Describe mixtures and their characteristics</p> <p>1.1 Show how mixtures are formed</p> <p>1.2 Describe ways of separating mixtures</p> <p>2. Demonstrate that some materials can dissolve other substances</p> <p>2.1 Show that some solid materials can be dissolved in some liquids</p> <p>2.2 Identify solids that can be</p>	<p>IV. PHYSICAL/CHEMICAL CHANGE</p> <p>1. Describe simple physical and chemical changes in materials</p> <p>1.1 Observe that no new material is formed in physical change</p> <p>1.1.1 Show examples of physical change</p> <p>1.2. Observe that a new material is formed in a chemical change</p> <p>1.2.1 Show examples of chemical change</p> <p>1.2.2 Observe that the product of a chemical change cannot be brought back to its original form</p> <p>2. Cite the conditions/factors that bring about changes in materials</p>	<p>III. MATERIALS</p> <p>1. Observe materials and their uses</p> <p>1.1 Identify common household materials e.g. pesticides, insecticides, soap, paint, solvent, synthetic, plastic</p> <p>1.2 Describe how the materials are used</p> <p>1.3 Explain the importance of reading product labels</p> <p>1.3.1 Identify warning signs/ precautions in product labels</p> <p>2. Explain that technology improves materials</p> <p>2.1 Identify materials improved by</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
characteristics 2.2.1 Show evidences that liquids have the ability to flow 2.2.2 Show evidences that liquids take the shape of their container	dissolved		technology 2.2 Describe the improvement done by technology on the materials
2.2.3 Show evidences that liquids occupy space 2.3 Describe the different characteristics of gases 2.3.1 State that gases take the shape of their containers, occupy space and have mass 2.3.2 Infer that some gases are colorless 2.3.3 State that there is air 2.3.4 Tell that air is colorless and tasteless	2.3 Identify liquids that can dissolve solid materials 2.4 Define solvents and solutes 2.5 Observe that some solvents can dissolve solutes faster than others 2.6 State that water is a universal solvent		
3. Infer that certain chemical substances	3. Infer that different substances	3. Infer that everything in the	3. Infer that some materials have bad effects

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>affect living things</p> <p>3.1 State that certain substances have good effects on man, animals and plants</p>	<p>react differently when mixed with other substances</p> <p>3.1 Observe that some solutes spread evenly when mixed with solvents</p>	<p>environment is changing</p>	<p>on other materials and the environment</p> <p>3.1 Identify conditions when the effects of the materials are beneficial</p>
<p>3.1.1 Identify certain chemical substances and their good effects</p> <p>3.2 State that certain substances have harmful effects on man, animals and plants if not used properly</p> <p>3.2.1 Identify some chemical substances that have harmful effects if not used properly</p> <p>4. Practice precautionary measures in using certain substances</p> <p>4.1 Follow safety measures in taking medicines and other substances</p>	<p>3.2 Observe that some solutes when mixed with solvents settle at the bottom</p> <p>3.3 Observe that some solutes when mixed with solvents do not settle at the bottom but make the solvents cloudy</p> <p>3.4 Identify the factors that affect how a solute dissolves in a solvent</p> <p>4. Infer that chemical substances can pollute soil, water and air</p> <p>4.1 Describe how chemical substances can pollute land, water and air</p> <p>4.2 Describe the effects of polluted, land, water, and air on people, animals and plants</p>	<p>4. Infer the effects of changes in the environment</p> <p>4.1 Identify the good effects of certain changes in the environment</p> <p>4.2 Identify the bad effects of certain changes in the environment</p>	<p>3.2 Identify conditions when the effects of materials are harmful</p> <p>4. Observe safety precautions in handling, storing and disposing certain materials</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
	<p>4.3 State that improper handling of household substances like: pesticides, kerosene and other chemicals can cause pollution</p>		
<p>V. ENERGY</p> <p>1. Identify the sources of heat and light</p> <p>1.1 State that the sun is the primary source of heat and light</p> <p>1.2 Name other sources of heat and light e.g. fire, electricity</p>	<p>V. ENERGY</p> <p>1. Infer that materials that can do work has energy</p> <p>1.1 Describe the position/condition of materials that has potential energy</p> <p>1.2 Describe the position/condition of materials that has kinetic energy</p> <p>1.3 Differentiate potential from kinetic energy</p> <p>1.4 Show that kinetic energy makes a material work/move</p>	<p>V. ENERGY</p> <p>1. Describe static electricity</p> <p>1.1 Identify ways of producing static electricity</p> <p>1.2 Observe the effect of static electricity</p>	<p>5. Investigate the particle nature of matter</p> <p>5.1 Cite evidences that matter is made up of particles</p> <p>5.2 Construct a model of solid, liquid and gas to show the structure of matter</p> <p>IV. ENERGY</p> <p>1. Describe the forms of energy and their uses i.e. chemical, mechanical, sound, electrical, radiant, nuclear</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>2. Show evidences that light travels in a straight line</p> <p>3. Cite evidences that light rays may be bent as they pass from one substance to another</p> <p>3.1 Demonstrate how refraction of light occurs</p>	<p>2. Describe how friction works</p> <p>2.1 Identify conditions when friction seems to retard/resist motion</p> <p>2.2 Compare how objects move on different surfaces/textures</p> <p>2.3 Explain why rough surfaces increase friction</p> <p>2.4 Identify ways of decreasing/increasing friction</p> <p>2.5 Identify the uses of decreasing/increasing friction in everyday life</p> <p>3. Infer that heat is a method of transferring energy</p> <p>3.1 Observe that heat transfers from a hot to a cold body</p> <p>3.2 Describe the condition necessary for producing heat</p> <p>3.3 Explain spontaneous combustion</p> <p>3.4 Explain how heat is produced during energy transformation</p>	<p>2. Describe an electric circuit</p> <p>2.1 Identify the parts of an electric circuit e.g. conductor, insulator, switch, fuse, source</p> <p>2.1.1 Classify materials into conductors and insulators</p> <p>2.2 Differentiate a parallel from a series connection</p> <p>2.2.2 Cite the advantages and disadvantages of parallel and series circuits</p> <p>2.3 Construct a model of an electric circuit - parallel or series</p>	<p>1.1 Describe how chemical energy is formed and used</p> <p>1.2 Describe how mechanical energy is formed and used</p> <p>1.3 Describe how electrical energy is formed and used</p> <p>1.4 Describe radiant energy and how it is used</p> <p>1.5 Describe how nuclear energy is formed and used</p> <p>1.6 Describe how sound energy is formed and used</p>
4. Infer that when light strikes an	4. Observe an object before and after	4. Describe how electrical energy is	4. Infer that energy can be transformed

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>object it is either <u>absorbed</u>, <u>reflected</u> or may pass through or a combination of the three may take place</p> <p>4.1 Observe that opaque materials absorb light</p> <p>4.2 Tell that light passes through transparent materials</p> <p>4.3 Observe that little amount of light passes through translucent materials</p> <p>5. Infer that white light consists of different colors</p> <p>5.1 Show that white light consists of different colors</p> <p>6. Explain how shadows are formed</p>	<p>heating</p> <p>4.1 Record the temperature of an object before and after heating</p> <p>4.2 Describe the change in physical/chemical state of an object before and after heating</p> <p>4.3 Practice safe ways of handling hot objects and flammable materials</p> <p>5. Infer how heat travels</p> <p>5.1 Show how heat travels by conduction from hot to cool bodies</p> <p>5.2 Show that heat travels by conduction through liquid and gas</p> <p>5.3 Show that heat travels by radiation through gas</p> <p>6. Explain the hazards of fire</p> <p>6.1 Describe ways of preventing fire</p>	<p>produced</p> <p>5. Observe transformation of electrical energy to other forms</p> <p>5.1 Observe that electricity can produce heat and light</p> <p>5.2 Demonstrate how electricity can make things move</p> <p>6. Describe how an electromagnet works</p> <p>7. Explain the use of electricity in the home and community</p> <p>8. Practice precautionary measures related to electricity e.g. unplugging electrical appliances during brownouts or thunderstorms</p>	<p>4.1 Demonstrate how a form of energy is transformed into another form</p> <p>4.2 Cite evidences that energy can be transformed</p> <p>5. Infer that energy can be transferred from one body to another</p> <p>5.1 Observe how energy can be transferred from one body to another</p> <p>5.2 Cite evidences when energy transfer occurs</p> <p>6. Observe that heat is always produced when energy transformation occurs</p>
	<p>6.2 Practice safety precautions in using fuels/fire</p>		

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>7. Infer that sound is produced by things that move</p> <p>7.1 Observe that sound is produced when things vibrate</p> <p>7.2 Show how loud/soft sound is produced by a vibrating object</p> <p>8. State that sound bounces back or is reflected from a hard surface as echo</p>	<p>6.3 Describe conditions necessary in putting out fire</p> <p>6.4 Follow safety rules/emergency measures in case of fire</p>	<p>9. Practice electrical energy conservation measures</p> <p>10. Infer that simple machines make work easier and faster</p> <p>10.1 Identify the kinds of simple machines e.g. lever, wedge, screw, wheel and axle, pulley</p> <p>10.2 Identify the main parts of each kind of simple machines</p> <p>10.3 Describe how each simple machine makes work easier and faster</p> <p>10.4 Identify activities where simple machines are used</p> <p>10.5 Describe simple machines which multiply force/speed</p> <p>10.6 Practice precautionary measures in using simple machines e.g. - Use simple machines properly - Keep simple machines in proper order</p>	<p>7. Describe examples which demonstrates Principles of Conservation of Energy</p> <p>7.1 Cite evidences that energy is neither created nor destroyed only transformed from one form to another</p> <p>8. Explain the effect of energy transformation/transfer to the environment</p> <p>8.1 Cite evidences that heat produced is transferred to the environment</p>
<p>9. Infer that force makes objects move</p>			<p>8.2 Demonstrates that heat energy can be transferred</p> <p>9. Infer that the motion of an object is determined by forces acting on it</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>9.1 Infer that some forces make objects move</p> <p>9.1.1 Show that wind and running water can move objects</p> <p>9.1.2 Observe that magnets can move some objects</p> <p>9.1.3 Demonstrate that pulling and pushing can move some objects</p> <p>9.1.4 Observe that force of gravity makes objects move towards the ground</p> <p>9.2 State that objects change position/direction when moved</p> <p>10. Practice ways of protecting oneself from excessive heat, light and loud sounds</p>			<p>9.1 State that there are forces acting on an object</p> <p>9.1.1 Observe that when forces acting on an object are not balanced, motion takes place in the direction of the greater force, when balanced there is no motion</p> <p>9.2 Observe that a body at rest tends to remain at rest and a body in motion tends to be in motion unless an outside force is applied on it</p> <p>10. Differentiate speed from velocity</p> <p>10.1 Measure the speed of an object in motion</p>
<p>VI. EARTH</p> <p>1. Infer that the earth is made up of</p>	<p>VI. EARTH</p> <p>1. Describe how water, wind, people</p>	<p>VI. EARTH</p> <p>1. Observe how rocks differ in shape,</p>	<p>10.2 Identify the specific direction of a moving object</p> <p>10.3 Measure the velocity of a moving object</p> <p>VI. EARTH</p> <p>1. Describe the structure of the</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>water, land and air</p> <p>1.1 Identify the earth's oceans and land using the globe or map</p> <p>2. Infer that the earth is the resource for life and one's needs</p> <p>2.1 Identify renewable resources from the earth</p> <p>2.2 Identify non-renewable resources from the earth</p> <p>2.3 Describe ways of conserving the natural resources</p>	<p>and animals bring about soil erosion</p> <p>1.1 Demonstrate how water causes soil erosion</p> <p>1.2 Describe how wind causes soil erosion</p> <p>1.3 Explain how people and animals cause soil erosion</p> <p>1.4 Demonstrate how the slope of land affects the amount of soil carried away</p> <p>2. Infer how erosion affects land, people, plants and animals</p> <p>2.1 Demonstrate how erosion changes the shape of the land</p> <p>2.2 Explain how erosion affects the condition of the soil</p> <p>2.3 Cite the effects of soil erosion on plants, animals and people</p>	<p>color, hardness, texture</p> <p>2. Classify rocks according to color, shape, hardness and texture</p> <p>2.1 Differentiate rocks as to shape, color, hardness, texture</p>	<p>earth's interior</p> <p>1.1 Identify the layers of the earth</p> <p>1.2 Describe each layer of the earth</p> <p>2. Infer how the movement of the earth's crust cause changes in the environment</p> <p>2.1 Identify the different crustal plates</p> <p>2.2 Describe oceanic and continental crusts</p> <p>2.3 Explain how the earth's crust move</p>
<p>3. Infer why soil is important</p> <p>3.1 Enumerate different ways people use soil</p>	<p>3. Infer how people and plants help prevent soil erosion</p> <p>3.1 Identify the different ways of preventing soil erosion</p>	<p>3. Infer how rocks are formed</p> <p>3.1 Identify igneous, sedimentary and metamorphic rocks</p>	<p>3. Explain how an earthquake occurs</p> <p>3.1 Describe how an earthquake occurs</p> <p>3.1.1 Demonstrate through a simple model how blocks of rock move along a fault</p> <p>3.1.2 Illustrate 3 types of plate movements that cause</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>3.2 Infer that there are different kinds of soil</p> <p>3.2.1 Observe the different kinds of soil</p> <p>3.2.2 Name the different kinds of soil</p> <p>3.2.3 Compare the different kinds of soil as to color and texture</p> <p>3.2.4 Perform an experiment to determine which kind of soil is best for a particular crop</p> <p>3.3 Infer how pollution affects soil productivity</p>	<p>3.2 Describe how forests prevent soil erosion</p> <p>3.3 Demonstrate how plants prevent soil erosion</p>	<p>3.2 Describe how igneous, sedimentary and metamorphic rocks are formed</p> <p>3.2.1 Infer that certain conditions/ situations lead to the formation of the different kinds of rocks</p> <p>3.3 Differentiate igneous, sedimentary, and metamorphic rocks from one another</p>	<p>earthquake</p> <p>3.2 Differentiate intensity from the magnitude of an earthquake</p> <p>3.3 Describe how earthquake affects the environment e.g. tsunami, change in land features</p>
<p>3.3.1 Identify practices that cause pollution</p> <p>3.4 Practice ways of protecting the soil</p> <p>4. Conclude that water is an important part of the earth</p> <p>4.1 Enumerate ways people use water</p>	<p>4. Infer that weather elements affect The daily weather condition</p> <p>4.1 Cite evidences that weather changes as shown by the</p>	<p>4. Infer how some forces contribute to the weathering of rocks</p> <p>4.1 Identify the forces that break rocks</p>	<p>3.4 Practice precautionary measures, before, during and after an earthquake</p> <p>4. Explain how a volcanic eruption occurs</p> <p>4.1 Describe how a volcano is formed</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>4.2 Infer that water comes from different sources</p> <p>4.2.1 Identify the sources of water</p> <p>4.2.2 Describe the water that comes from different sources</p>	<p>changes in air temperature</p> <p>4.1.1 Observe the changes in air temperature</p> <p>4.1.2 Measure changes in air temperature using a thermometer for one week</p> <p>4.1.3 Record the changes in air temperature</p> <p>4.2 Infer that air movement affects the weather</p> <p>4.2.1 Observe changes in wind speed and direction</p> <p>4.2.2 Measure wind speed and direction for a week using improvised instruments</p>	<p>e.g. plants, water, weather, man</p> <p>4.2 Explain how rocks are broken down</p>	<p>4.2 Differentiate an active from inactive volcano</p>
<p>4.2.3 Explain why groundwater is usually free from disease and microorganisms compared to other sources</p> <p>4.3 Infer how pollution affects water</p> <p>4.3.1 Identify practices that cause water pollution</p> <p>4.3.2 Cite evidences that water is polluted</p> <p>4.4 Practice ways of conserving bodies of water</p>	<p>4.2.3 Record wind speed and direction</p> <p>4.3 Describe clouds</p> <p>4.3.1 Describe the different types of clouds</p> <p>4.3.2 Describe how clouds are formed using a model</p> <p>4.4 Describe the weather based on the above elements</p>		<p>4.3 Describe how a volcanic eruption occurs</p> <p>4.4 Name the beneficial/harmful effects of volcanic eruptions</p> <p>4.5 Practice precautionary measures before and after volcanic eruptions</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>4.5 Practice ways of conserving water</p> <p>5. Infer that the weather changes during the day and from day to day</p> <p>5.1 Describe the weather for the day e.g. sunny, cloudy, partly cloudy, rainy</p> <p>5.2 Record the weather for the day using symbols and make a weather chart for one week</p> <p>5.3 Interpret a simple weather chart</p>	<p>5. Infer that cloud formation, temperature, wind speed, and direction may vary at different locations at the same time</p>	<p>5. Infer how soil is formed</p> <p>5.1 Demonstrate how rocks are broken down into pieces through the action of water</p> <p>5.2 Explain how other factors contribute to soil formation e.g. plants, weather</p>	<p>5. Describe the factors that affect the climate of a place</p> <p>5.1 Define climate</p> <p>5.2 Identify the factors that affect the climate of a place: altitude, latitude, bodies of water, wind system, amount of rainfall</p> <p>5.3 Explain how each factor affects the climate of a place</p> <p>5.4 Explain how the earth's rotation affects the wind system</p>
<p>6. Infer that the weather affects family and community activities</p> <p>7.1 Identify activities done during certain weather conditions</p> <p>8. Practice safety measures during certain types of weather e.g. typhoon</p>	<p>6. Apply knowledge of the weather in making decisions for the day</p>	<p>6. Explain how water cycle occurs</p> <p>6.1 Identify the processes involved in the water cycle e.g. evaporation, condensation, precipitation</p> <p>6.2 Describe changes that happen to water during each process</p>	<p>5.4.1 Describe the different wind systems</p> <p>5.5 Observe through a model how the earth revolves around the sun</p> <p>6. Explain why there are two seasons in the Philippines</p> <p>6.1 Describe the two seasons in the Philippines</p> <p>6.2 Describe the causes of seasons in the Philippines</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
		<p>6.3 Relate temperature to the processes in the water cycle</p> <p>7. Infer how the heat of the sun affects the weather</p> <p>7.1 Observe the effect of heat on land/water</p> <p>7.2 Compare the ability of land and water to absorb and release heat</p> <p>7.3 Describe the effect of unequal heating of land and water i.e. low/high pressure</p>	<p>7. Explain why there are four seasons in other countries</p> <p>7.1 Describe the four seasons in other countries</p> <p>7.2 Show through a model the cause of the four seasons in other countries</p>
		<p>8. Explain how a typhoon occurs</p> <p>8.1 Describe what a typhoon is</p> <p>8.2 Trace the origin and path of typhoons that hit the Philippines</p> <p>8.3 Describe the condition in the environment before, during and after a typhoon</p> <p>8.4 Explain the meaning of typhoon signals</p> <p>8.5 Practice precautionary measures before, during and after a typhoon</p> <p>9. Apply knowledge of the weather</p>	<p>8. Explain why there are four types of climate in the Philippines</p> <p>8.1 Explain the major wind systems that affect the climate types in the Philippines</p> <p>8.2 Describe the four types of climate in the Philippines</p> <p>8.3 Describe the climate type of a particular province using a climate map/rainfall graph</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
		<p>to daily life activities</p> <p>9.1 Relate weather conditions to planning family and community activities</p> <p>9.2 Relate observations of weather conditions to air and water transportation services</p> <p>9.3 Identify ways to conserve the environment to lessen the harmful effects of cyclones/ floods</p>	
<p>VII. SUN</p> <p>1. Infer that the sun is the center of the solar system</p> <p>1.1 Tell that there are planets and other heavenly bodies that move around the sun</p> <p>1.2 Tell that the earth where we live is part of the solar system</p>	<p>VII. EARTH, MOON AND SUN</p> <p>1. Infer that the earth rotates on its axis as it revolves around the sun</p> <p>1.1 Show through a model how the earth rotates on its axis</p> <p>1.2 Explain that the earth takes one day/24 hours to make a complete rotation on its axis</p> <p>1.3 Show through a model how the earth's rotation on its axis causes day and night</p> <p>1.4 Show through a model that the earth rotates in a counter clockwise direction as seen from the top of the North Pole</p>	<p>VII. THE SOLAR SYSTEM</p> <p>1. Conclude that the solar system is an orderly arrangement of heavenly bodies</p> <p>1.1 Identify the members of the solar system</p> <p>1.2 Describe each member of the solar system</p> <p>1.3 Illustrate through a diagram how the members of the solar system revolve around the sun as they follow their own orbits</p> <p>1.4 Describe the orbit of each planet as ellipse</p> <p>1.5 Explain why planets stay in orbit</p>	<p>VII. BEYOND THE SOLAR SYSTEM</p> <p>1. Identify instruments and procedures used by astronomers to gather information about stars</p> <p>1.1 Construct improvised instruments for watching/ observing stars</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>2. Infer that the change in temperature from time to time on the earth's surface is caused by the sun's heat</p> <p>2.1 Observe the changes of temperature from time to time</p> <p>2.2 Record and interpret the changes in temperature during the day</p>	<p>2. Infer that the earth revolves around the sun</p> <p>2.1 Describe the movement of the earth around the sun</p> <p>2.2 Show through a model how the earth revolves around the sun following its own orbit</p>	<p>as they revolve around the sun</p> <p>2. Describe the sun as the center of the solar system</p> <p>2.1 Tell that the sun is also a star</p> <p>2.2 Identify the parts of the sun</p>	<p>2. Describe the different characteristics of stars</p> <p>2.1 Observe the color, size and brightness of stars</p> <p>2.2 Identify the kind of stars according to their size</p>
<p>3. Infer that the sun's heat and</p>	<p>2.3 State that the earth takes one year/12 months/365 1/4 days to make a complete revolution around the sun(366 on every fourth year/leap year)</p> <p>3. Infer that the moon revolves</p>	<p>2.3 Describe each part of the sun</p> <p>2.4 Tell that sunspots are formed in the photosphere</p> <p>2.5 Identify the effects of sunspots on earth</p> <p>2.6 Identify ways by which solar energy is used by plants, animals and humans</p> <p>2.7 Explain why the sun is the main source of energy on earth</p> <p>3. Describe the distinctive</p>	<p>2.3 Tell that the stars we see in the sky are actually their apparent brightness</p> <p>2.4 Describe the relationship between the color and temperature of a star</p> <p>2.5 Describe the relationship between the brightness and the distance of star from the earth</p> <p>2.6 Explain why star distances are measured in light years</p> <p>2.7 Explain why stars seem to twinkle</p> <p>2.8 Conclude that stars are distant suns</p> <p>3. State that a constellation is a</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>light reach the earth</p> <p>3.1 Describe how the sun's heat and light affect the activities of human beings</p> <p>3.1.1 Identify activities of human beings during sunny days</p>	<p>around the earth</p> <p>3.1 Show through a model that as the moon travels around the earth it also makes one complete rotation so that the same side of the moon is facing the earth all the time</p>	<p>characteristics of planets in the solar system</p> <p>3.1 Illustrate the relative distances of the planets from the sun</p>	<p>group of stars that form a pattern in the sky</p> <p>3.1 Observe constellations in the sky</p>
<p>4. Infer that heat and light from the sun have harmful effects on living things</p> <p>4.1 Explain how heat from the sun can burn the skin</p> <p>4.1.1 Cite evidences that over exposure to sunlight hurts the skin</p>	<p>3.2 Explain that the moon travels around the earth once about every 29 1/2 days</p> <p>4. Explain the apparent changes in the shape of the moon as it revolves around the sun</p> <p>4.1 Observe the apparent changes in the shape of the moon</p>	<p>3.2 Relate the surface temperature of each planet to their relative distance from the sun</p> <p>3.3 Relate the relative period of revolution of each planet to their relative distances from the sun</p> <p>3.4 Identify the unique characteristics of each planet that differentiates one from the other e.g. satellites, atmosphere, rings, orbits (ellipse), relative period of rotation and revolution</p> <p>4. Describe the other members of the solar system</p> <p>4.1 Identify the other members of the solar system</p>	<p>3.2 Identify common constellations in the sky</p> <p>3.3 Construct a star map that illustrates common constellations</p> <p>3.4 Describe how constellations are useful to people</p> <p>4. Describe the galaxies</p> <p>4.1 Name the common galaxies</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
<p>4.2 Describe how heat and light from the sun can hurt the eyes</p> <p>4.2.1 Cite evidences that it is not good to look directly at the sun</p>	<p>4.2 Describe the apparent changes of the moon as seen from night to night</p>	<p>4.2 Describe each of the other members of the solar system</p>	<p>4.2 State that our solar system is part of the Milky Way galaxy</p>
<p>4.3 Infer that too much heat from the sun can kill plants and animals</p> <p>4.3.1 Cite evidences that too much heat from the sun can kill plants and animals</p> <p>5. Practice precautionary/safety measures to avoid getting hurt from the sun's heat and light e.g. Do not look directly at the sun</p>	<p>4.3 Show through a model how the relative position of the observer on earth and the moon and sun cause the apparent changes in the shape of the moon</p> <p>5. Infer how the natural occurrence of eclipse is caused by the revolution of the moon around the earth</p> <p>5.1 Explain how solar and lunar eclipses occur</p> <p>5.2 Show through a model why a lunar eclipse occurs during a full Moon</p> <p>5.3 Show through a model why a solar eclipse occurs during a new moon</p> <p>5.4 Practice safety measures to avoid damage of the eyes during</p>	<p>5. Infer that the revolution of the moon around the earth causes the natural occurrence of tides</p> <p>5.1 Describe the occurrence of tides</p> <p>5.2 Explain how high and low tides occur</p> <p>5.3 Explain why there are high and low tides about every twelve hours</p> <p>5.4 Relate through a model the position of the moon and the earth to places where high and</p>	<p>5. Describe the universe</p> <p>5.1 Identify modern space facilities, tools and equipment used to study the universe</p> <p>5.2 Explain the theories about the universe</p> <p>5.3 Enumerate some space probes and their missions</p> <p>5.4 Name some achievements/problems met in space exploration</p>

GRADE III	GRADE IV	GRADE V	GRADE VI
	a solar eclipse	low tides occur	