SCIENCE

Grade 5

Three-Term Budget Of Work (BOW) for Learning Competencies

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Three-Term Budget Of Work
For Learning Competencies

First Term	
Content Standard	• Scientists identify three states of matter based on shape and volume. • Temperature can cause changes of state. • Planned simple scientific investigations require several steps and processes. • An understanding of matter can be applied to solve real world problems. • Living things can be grouped as plants, animals, and microorganisms based on their characteristics. • The life cycles of plants and animals allow them to survive and reproduce
Performance Standard	By the end of the term, learners plan and carry out simple scientific investigations about matter and its changes using appropriate steps, tools, and units such as milliliters, liters, grams, kilograms, and degrees Celsius. They observe, measure, record, and explain properties of solids, liquids, and gases and how temperature causes changes of state. Learners organize data using tables to classify living things as plants, animals, or microorganisms and explain how specialized structures help plants survive in different environments.

Week	Learning Competency
1 to 2	**Matter in Daily Life** • Describe matter as anything that has mass and takes up space. • Identify that matter has (exists in) three states called solids, liquids, and gases.
2 to 4	**Matter and the Three States** • Describe the properties of solids, liquids, and gases in terms of shape and volume:

	a. solids: definite shape and volume b. liquids: no definite shape; definite volume c. gases: no definite shape or volume; • Identify objects at home and in the classroom as solid, liquid or gas. • Use measuring cylinders or beakers to measure volume using units, such as milliliters (mL), and liters (L). • Describe how changes in temperature cause matter to change in state, such as solid to liquid to gas.
5 to 7	**Scientific Investigation** • Describe the steps of a simple science investigation: a. What is the problem? b. What materials do you need? c. What do you need to do? d. What have you found out/learned? • Identify and appropriately use units in simple science activities, such as milligrams (mg,) grams (g), kilograms (kg), and degrees centigrade (°C). • Plan simple scientific investigations in answering questions, such as "Do gases (like air) or liquids (like water) have mass?", using appropriate simple science equipment, such as a balance, and a thermometer, with appropriate units.
8 to 10	**Plants, Animals, and Microorganisms** • Use a table to show how living things can be classified into groups based on similar characteristics: a. plants including flowering and non-flowering b. animals including mammals, reptiles, insects, birds, fish, amphibians, and reptiles c. microorganisms including fungi and bacteria • Describe the purpose of specialized structures in plants, such as rhizomes, tubers, thorns, bulbs, and aerial roots. • Explain how some plants have adapted to unfavorable conditions in the environment, such as lack of rain or floods.

Suggested Activities	• **Liquid Measuring Lab -** Learners measure water using measuring cylinders or beakers in milliliters and liters. They record and compare measurements. The teacher models how to read the scale properly and ensures safe use of materials. • **Heat-Induced State Change Demonstration -** Learners observe ice melting into water and water turning into vapor through heating. They draw and label each stage of change. The teacher explains the effect of temperature using simple demonstrations. • **Guided Science Investigation Planning Task -** Learners plan and carry out a simple investigation following the steps of scientific inquiry. They identify the problem, materials, procedure, and findings using a guide template. The teacher supports each step. • **Units and Tools Matching Lab -** Learners match units (mg, g, kg, °C, mL, L) to appropriate tools and situations. They explain why each unit is used. The teacher models correct scientific terms. • **Living Things Classification Table Task -** Learners classify organisms into plants, animals, and microorganisms using pictures or samples. They complete a table showing similarities and differences. • **Plant Specialized Structures Diagram Task -** Learners label rhizomes, tubers, bulbs, thorns, and aerial roots and explain their functions. The teacher provides real-life examples. • **Plant Adaptation Discussion Activity -** Learners explain how some plants survive in dry or flooded environments. They draw or describe how the structure helps the plant survive.
Suggested Performance Tasks	• Plan and carry out a scientific investigation on a simple everyday problem such as "do gases have weight"?

Second Term	
Content Standard	• Animals have systems that help them grow, respond, and reproduce. • The life cycles of plants and animals allow them. • Forces are pushes or pulls that act in a specific direction. • Friction is an everyday force created by two surfaces interacting. • Gravity causes all objects to fall towards the ground. • Science investigations provide evidence to support predictions and explanations.
Performance Standard	By the end of the term, learners use diagrams, models, and information from investigations to explain how body systems help animals grow, respond, and reproduce, and compare the life cycles of plants and animals using tables, charts, or drawings. They plan and carry out fair tests to investigate contact and non-contact forces, friction, and gravity, record observations, and use evidence to explain how forces affect the movement of objects in everyday situations.

Week	Learning Competency
1 to 3	**Body Systems in Animals** • Identify from pictures and labeled diagrams the parts of the digestive system as mouth, gullet, stomach, small intestine, and large intestine, and describe how they work. • Identify from pictures and diagrams the parts of the respiratory system as the nose, windpipe, and lungs, and describe how they work. • Identify from pictures and labeled diagrams the parts of the female reproductive system as ovaries, uterus, and vagina and those of the male reproductive system as the prostate, testis, and penis and describe how they work.
4 to 6	**Life Cycles of Living Things** • Identify which groups of animals reproduce by giving birth to live young, such as mammals, and which reproduce by laying eggs, such as birds and reptiles.

	• Use information from secondary sources to describe examples of how some animals have changed to better suit their environment, such as mimicry or camouflage. • Compare the life cycles of mammals from birth to adulthood, birds from egg to a mature organism, and plants from seed to a young plant, and then to a mature plant.
7	**Contact and Non-Contact Forces** • Carry out simple investigations to demonstrate that contact forces cause objects to move in the same direction as the direction that the force is applied.
8 to 9	**Investigating Scientifically: Friction** • Plan and carry out a scientific investigation to determine the effect of different surfaces on the size of frictional forces. • Demonstrate how friction can produce heat and investigate ways of reducing and increasing friction.
10 to 11	**Investigating Scientifically: Gravity** • Identify gravity as a non-contact force that affects the behaviors of materials and objects on Earth in predictable ways. • Predict and explain whether heavier objects will fall faster than lighter objects due to the force of gravity. • Observe and describe the effects of gravity to the motion of an object.
Suggested Activities	• **Digestive System Labeling Task -** Learners identify parts of the digestive system and explain how food moves through the body using diagrams. • **Respiratory System Mapping Activity -** Learners label the nose, windpipe, and lungs and describe how breathing happens. • **Reproductive System Identification Task -** Learners identify basic male and female reproductive organs using diagrams and describe their functions using age-appropriate language. • **Life Cycle Comparison Chart Activity -** Learners compare life cycles of mammals, birds, and plants using a table or diagram showing stages. • **Animal Adaptation Research Task -** Learners describe mimicry or camouflage

	using books or pictures and explain how the adaptation helps survival. • **Contact Forces Investigation -** Learners push and pull objects and observe how force affects motion. They record results. • **Friction Surface Investigation -** Learners test movement on different surfaces (smooth, rough, cloth, wood) and record differences. • **Predicting Falling Objects Activity -** Learners predict whether heavier objects fall faster, test safely, and compare results. • **Fair Test Investigation Task -** Learners plan a simple investigation where only one variable changes (ex: surface type).
Suggested Performance Tasks	• Set up a simple science activity to observe and record the changes in plants as they grow from seed to maturity. • Develop a graphic organizer, such as a concept map or Venn diagram, to show the similarities and differences between contact forces and non-contact forces. Include examples of situations and materials that demonstrate contact and non-contact forces and suggest ways these could be used to improve everyday life in the community. • Set up an inclined plane for toy cars, and apply the concept of friction to stop the toy car as fast as possible after it moves past the inclined plan.

Third Term	
Content Standard	• Static electricity occurs when some materials rub on other materials causing charges to jump. • Electric current requires a pathway for charges to flow. • Landforms influence living and non-living components of the environment. • Rocks are composed of grains of minerals that break down to form soil. • Weathering and erosion shape the Earth's surface by breaking down and transporting rocks. • The Water Cycle includes processes of evaporation, precipitation and transportation. • Weather disturbances feature low pressure, strong winds, and storms. • The planets and moons vary in physical features and composition. • Phases of the Moon depend on its position relative to Earth and Sun.
Performance Standard	By the end of the term, learners carry out simple investigations and construct models to explain static electricity, electric circuits, and the properties of conductors and insulators, and apply their understanding to practical uses in the home and community. They observe, classify, and describe Earth materials, landforms, and changes caused by weathering, erosion, and the water cycle, and communicate ideas using diagrams, charts, and models. Learners explain weather disturbances in the Philippines and use models to describe the structure of the solar system and the motion of the Earth, Moon, and Sun.
Week	**Learning Competency**
1 to 2	**Static Electricity** • Investigate the effects of static electricity using common materials, such as a comb, plastic and glass rods, and balloons.
	Conductors, Insulators, and Simple Circuits • Assemble and draw a simple circuit using batteries, wires, switch, and bulb and/or toy motor or

	buzzer. • Design and construct a simple electrical circuit to identify what materials will conduct electricity and use it to identify materials from the environment that will and will not conduct electricity. • Make a simple electromagnet and observe and record its properties.
3 to 5	**Landforms, Rocks, and Minerals** • Identify local examples of natural landforms and bodies of water such as mountains, valleys, rivers, and coastlines, and describe how they influence non-living and living components of the environment. • Explore the school grounds or the local area to observe or collect different types of rocks, describing their similarities or differences in terms of their features, such as texture, color, and grain crystal size. • Classify common rocks from provided samples using a simple rock classification system, such as a dichotomous key. • Explain how soil is formed from rocks and minerals.
	Weathering and Erosion • Demonstrate how erosion transports Earth materials.
6	**The Water Cycle and Using Models** • Explain the role of the water cycle in the environment. • Construct a model to communicate some of the key processes in the water cycle.
7 to 9	**Weather Disturbances** • Describe some effects of weather disturbances that occur in or near the Philippines. • Describe the weather conditions according to a Public Storm Warning Signal issued by the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA). • Describe typical weather conditions before, during and after a tropical cyclone.
10 to 11	**The Solar System** • Describe the general structure of the solar system, identifying the names of the major celestial

	objects, their main features, and general composition. • Make drawings or a simple model to show the motion of the Earth and Moon relative to the Sun to explain the phases of the moon that people see from Earth.
Suggested Activities	• **Simple Circuit Assembly Task** - Learners assemble a simple circuit using a battery, wires, switch, and bulb or buzzer. They draw a diagram labeling each component and test whether it works. The teacher models safe handling of batteries, ensures proper connections, and guides learners to understand the flow of electricity. • **Will It Flow? The Great Circuit Challenge** - Learners test different everyday materials (e.g., metal clip, coin, aluminum foil, plastic straw, wood stick, rubber, paper) by placing each in a simple circuit to check if it allows electricity to flow and complete the circuit. They record their observations and classify each material as a conductor or insulator. The teacher demonstrates how to safely insert materials into the circuit, reminds learners to avoid short circuits, and guides them in observing whether the bulb lights up to determine if electricity is flowing. • **Creating a Simple Electromagnet** - Learners construct a basic electromagnet using a nail, wire, and battery and observe its properties, such as attracting paper clips. They record findings and draw a labeled diagram. The teacher guides safe use of batteries and wires, emphasizes hands-on observation, and explains the principles behind electromagnetism. • **Local Landforms and Water Bodies Task** - Learners identify local examples of mountains, valleys, rivers, and coastlines. They describe how these landforms affect living and non-living components of the environment. The teacher provides maps or photos, asks guiding questions, and encourages learners to make connections between geography and ecosystems. • **Dichotomous Key Chart Activity** - Learners classify common rocks using a simple dichotomous key. They record which rocks belong to which type (igneous, sedimentary, metamorphic). The teacher explains key features to observe, guides classification, and ensures learners follow systematic • **Erosion Demonstration Lab** - Learners simulate erosion using sand, water, and

	trays to observe how Earth materials are transported. They record how materials move and where they settle. The teacher models the experiment, discusses real-life examples (rivers, rain), and ensures safe handling of water and trays. • **Water Cycle Exploration Task** - Learners explain and illustrate key processes in the water cycle: evaporation, condensation, precipitation, and collection. They construct a simple model showing how water moves through the environment. The teacher provides guiding questions, examples, and materials for hands-on modeling. • **Tropical Cyclone Conditions Activity** - Learners describe typical weather before, during, and after a tropical cyclone. They illustrate changes in rain, wind, and clouds. The teacher models safe observation practices and reinforces understanding through visual aids or simulations. • **Earth-Moon-Sun Motion Model** - Learners demonstrate the motion of the Earth and Moon relative to the Sun and explain observable phases of the Moon. They draw or model positions to show day/night and moon phases. The teacher guides learners to use safe materials and emphasizes clear, age-appropriate explanations.
Suggested Performance Tasks	• Develop a graphic organizer, such as a concept map or Venn diagram, to compare and contrast conductors and insulators of electricity. Include examples of materials that conduct and insulate and suggest ways that recycled materials could be used to develop better conductors and insulators. • Create a video of a weather report or act out a TV weather broadcast segment explaining a weather disturbance. • Construct a scale model of the sun and the inner planets of the solar system showing the planet's relative sizes and distances from the sun.