INTRODUCTION

The study of Science is critical for living a meaningful and functional life in a technologically advanced and globalized world. This integrated science curriculum for elementary schools delve into the systematic exploration of living organisms and non -living matter, the impact on humans and the environment.

The General objectives for Grades 1 – 6 Science:

1. **Acquire the fundamental facts, concepts, principles and theories of Science.**
2. **Develop basic scientific skills and competencies.**
3. **Utilize digital technology to investigate, record and report systemic observation of work, force, energy, simple machine, evaporation, filtration, etc.**
4. **Embrace positive scientific values and attitudes that make for peaceful coexistence in society.**
5. **Develop a love for Science.**

A learner-centered approach is emphasized in this curriculum. This is based on the firm belief that learning becomes more permanent, meaningful and exciting when learners themselves take ownership of the learning process. Instructors are therefore urged to c ontrive those classroom strategies that engage learners actively in the teaching and learning process.

SEMESTER ONE

GRADE: 1
PERIOD: I
UNIT: I: SCIENTIFIC KNOWLEDGE
TOPIC: SCIENCE OBSERVES THINGS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	COMPETENCES/ ASSESSMENT
Learners will use their knowledge of science to describe things in nature by their shape, size, color, texture, and weight	At the end of this topic, learners should be able to: 1. State the meaning of Science 2. State ways in which one can use their senses to observe 3. Observe colors, shapes, sizes and weight	1. The meaning of science 2. Our senses and how we use them. 3. The Physical Properties of Matter: size, shape, color and weight in our environment.	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Small groups**: place learners in mixed ability groups and assign tasks to work **Whole class**: Brainstorm about learners' idea on topic. Discuss to get a complete, correct ideas and post them on wall or chalkboard. Game Inside or Outside): "I See" Name an object and describe size, shape, color, texture or weight of things around them. Show and Tell Language connection: describe given objects using complete sentences – this is….it feels….it is (color), etc.	**Level Textbook(s)** Various objects Worksheets or Activity pages in Textbook Poster Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencwfun.com** **and others**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms

			Investigation Outside: Use named sense(s) to describe object picked. **Center:** Group things by attributes, one at a time.		• Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities - Paper-based activities.

SEMESTER ONE

GRADE: 1
PERIOD: II
TOPICS: MATTER: THINGS THAT MAKE UP OUR ENVIRONMENT AROUND US

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to relate the term "matter" to real things around. Learners will be able to describe the effect of "greater force" versus "less force" applied to an object.	At the end of this topic, learners will be able to: 1. State the meaning of matter. 2. Name the states of matter and give examples of each. 3. Distinguish between the three states of matters. 4. Observe a change in the state of matter 5. List examples of each state of matter	**1. Matter:** a. Meaning of matter and Kinds of matter b. Using shape, volume, and colors to describe matter. **2. Force:** • Definition and kinds of force • How Forces act on matter • Compare and contrast greater force versus less force on an object. -	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Whole class**: each student brings a named object to be grouped into solid and liquid in the Science Learning Center. Empty-filled-emptied balloon with the class and have learners answer questions about properties of matter in a gas state Use a push, pull, or lift demonstrate force on an object (matter) to makes work happen. Learners watch and explain the steps and results of applying force. **Center:** Take turns to fit solid and liquid into containers and talk about their shapes in relation to the containers Display a list of lesson key terms **Individual work:**	Level Textbook(s) Objects in the class and in the community Paper/Copybooks Balloons Empty cans of different sizes. Textbooks/Teacher Guides Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **http://www.sciencekids.co.nz/experiments** **http://www.kidzone.ws/science** **www.owlcation.com/stem** **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal

	6. State the meaning of work and force		Draw and label everyday objects according to their shapes, and kind of matter they are. **Audio-visual**: Watch and explain the steps and results of applying force.	**www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	• Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 1
PERIOD: III
TOPIC: LIVING AND NON-LIVING THINGS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to identify living and non-living things around them appreciate the usefulness of some living things to humans.	At the end of this topic, learners should be able to: 1. State the characteristics of living things 2. Identify living things 3. Distinguish between plants animals as the major groups of living things 4. List the importance of plants and animals in our surrounding	**Living & Non-living things** • We use our senses to learn about living things (plants & animals)? • What do we know about non-living things? • What are the differences: Living or nonliving? • Plants • Usefulness of plants to humans.	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. Brainstorming Activity: Differentiate living and nonliving things Discovery Field Trip: to find living and non-living things in the immediate environment. Show and tell - Learners tell about their samples from homework. Discussion on how plants and animals are different Content vocabulary(key words)	Level Textbook(s) Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **http://www.sciencekids.co.nz/experiments** **http://www.kidzone.ws/science** **www.owlcation.com/stem** **https://www.sciencea-z.com** **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** Chart displaying Animals only Chart displaying Plants only Computer	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Science journal Quizzes • Test • Class and Homework

					• Assignments • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks

SEMESTER TWO

GRADE: 1
PERIOD: IV
TOPIC: THE EARTH AND ITS COMPOSITION (*ROCK, SOIL, AIR AND WATER*)

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will use Tree Diagram or Cycle for information and make inferences. Learners will be able to demonstrate the scientific process at a Fair or other appropriate event.	At the end of this topic, learners should be able to: 1. Describe the composition of the earth in verbal and graphic forms 2. Name the three (3) main natural sources of water 3. Use level science vocabulary to describe the water cycle. 4. Demonstrate understanding of the connections among sources of water through the water cycle. 5. Predict what might happen to learners and their family and friends if the earth lost one of its components.	**1. OUR EARTH** I. Composition of the earth (soil, rock, air & water) a) Rocks: size, shapes and colors b) Sources of all water on earth: (rain, well, river, etc) c) The Water Cycle	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Small groups**: place learners in mixed ability groups. Use posters to talk about direction of rain water, soil profile, and water cycle **Essential Questions** Where does rain water go after it hits the ground? Class Discussion: "What are some of the negatives things that could happen in our life if the earth was short of water, soil, or rocks?" **Center:** Set up a water boiling experiment to model the water cycle and execute the scientific process: • Pose Question • Predict • Experiment • Observation	**Level Textbook(s)** Soil samples Rock samples Water Pot and fire Posters of graphic organizers: Water cycle Soil profile Course of rain water Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** (*Please pay attention to proprietary information)	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **Assessment Strategies** to *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

		-	Report/conclude - **Home work**: adults will help learners dig and bring samples of different colors and textures of the soils for discussion. Bring a collection of local materials and items that can be used for making satellite model **Content** vocabulary(key words)		• Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks

SEMESTER TWO

GRADE: 1
PERIOD: V
TOPICS: WEATHER AND CLIMATE, SPACE AND SOLAR SYSTEM

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS	COMPETENCES ASSESSMENT
Learners will make simple equipment for reading the weather. Learners will be able to read weather forecasts on phone, computer, T.V.	At the end of this lesson, learners should be able to: 1. Describe the weather 2. State the effect of weather on living things 3. Name and describe the seasons of Liberia 4. Describe the effects of air (wind/storm) on objects. 5. Explain the effects of poor ventilation on human 6. Identify heavenly bodies close to the Earth	1. Weather and Climate 2. The seasons in Liberia and another world climate region 3. Care of body and living space in different seasons 4. Solar System 5. Outer Space	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Whole class**: Class Daily Weather Chart - take turns to observe and report Class **c**onstruct wind vane; rain gauge and take readings Mount thermometer to read daily temperature Song or Story-telling: describing and stating seasons of Liberia by song, storytelling Discussion on the effects of poor ventilation at home and school **Center:** watch videos on topics and complete downloaded worksheets. **Content** vocabulary(key words)	**Level specific textbook(s)** Stick or pole, Old soft drink cans, Funnel Telescope Binoculars Weather Thermometer, Computer Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal

			Homework: observe moon and stars in the night sky using the telescope, binoculars, or naked eyes Bring a collection of local materials and items that can be used for making satellite model **Audiovisual**: Download and Watch a simulation video of the Solar System Song and Lyrics (National Geographic youtube.com) and answer questions.		• Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 1
PERIOD: VI
TOPICS: CARE OF THE BODY
HIV/AIDS
SUBSTANCE ABUSE

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will use knowledge and skills acquired to identify and name different part of their bodies and how they can care of them Understand the danger of taking in bad substances and identify ways of avoiding drug abuse Explain basic facts about HIV and AIDS and how it can affect our lives	At the end of this topic, learners should be able to: 1. Describe the parts of the body 2. State ways we care for each body part 3. State the importance of proper hand washing 4. Explain HIV/AIDS 5. Identify substances commonly abused	**Body Care** ✓ Getting to know your body ✓ Names & function of body parts ✓ Care for the body ✓ Private & non private parts ✓ Body types and individual uniqueness **Drug abuse** ✓ What is it? ✓ List of some Bad substances Alcohol Drugs Cigarettes ✓ Good Substances Juices	**Rhyme/Song:** 1. **"**This is my ---- I use it to------"Teacher touches a part and asks the children its name and what it is used for (*it may be hard for the children to touch their private parts in this exercise, so the teacher taking the lead can help reduce awkwardness).* 2. "This is the way we wash our hands, wash our hands, wash our hands…..when we want to eat ……after our play …….after the restrooms …….when we come from places….." Teacher demonstrate about taking care of the body parts as the children mimic. Use a flip chart or drawing on the board and show different	**Posters** Magazine cutouts of personal hygiene materials Chart "Do's" for the various body parts Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

		Prescribed Medications e.g. (Paracetamol) Why children should not take in these bad substances **HIV and AIDS** ✓ What is HIV ✓ Ways of getting and not getting HIV ✓ Care for people living with HIV	types of bodies. Explain some are short some are tall, some are big some are small… Invite children to identify which body type is theirs. Allow each child to have a round of applause celebrating their body type, **Role plays:** Ask pairs of children to act out how drug addicts behave. Discuss after the role play the effects of drug abuse Explain different ways drug abuse can be avoided **Teacher Explains:** "Big, big disease**"** to the children. Ask learners to tell what causes the disease. Provide information about what they do not know or correct misinformation Use a picture of a person with "big big disease and ask them what they think the person needs. Share with them the need to care for those suffering without exposing themselves.	**www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 2
PERIOD: I
TOPIC: SCIENCE IS EXPLORATION (SCIENCE IS EXPLORING MY WORLD)

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to express curiosity for natural phenomena and take step to explore	At the end of this topic, learners will be able to: 1. Practice scientific inquiry into the environment. 2. Play individual roles in a scientific process. 3. Organize group work for scientific inquiry. 4. Report on the mini-inquiry conducted by the class.	1. Science asks questions (Beginning the inquiry/ exploratory process) 2. Science makes good guess and good design to answer questions. How can I group everything in my classroom? 3. Science observes to try to answer questions. What kinds and group of things are in space outside of my classroom? 4. Science can ask more questions: what can I see above the clouds?	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Whole class**: Learners look around in their classroom and verbally group things as living or non-living Learners research to find out the causes of day and night and present written report. **Center:** Naming some things learners see in the environment (land, air and sky). Keep list for future investigation **(using model)** :the way the moon gets its light Bring a collection of local materials and items that can	**Level Text book** -Internet/ computer, Tablet or phone -Flash light, ball, -Science textbook Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal

			be used for making satellite model **Individual work: Content** vocabulary(topic key words) **Audiovisual**: watch *YouTube videos* of the solar system moon phases and answer questions in class **Group research**: learners read up to find out the causes of day and night and present written report.		• Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 2
PERIOD: II
TOPICS: EXPLORING WATER AND AIR
EXPLORING SOUND ENERGY AND COMMUNICATION

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will appreciate the importance of natural elements of the environment and their usefulness to humans	At the end of this topic, learners should be able to: 1. Name and identify sources of water explain the process of evaporation and condensation. 2. Identify soluble and insoluble substances in water. 3. State the properties and impact of air. 4. Explain how sound is produced 5. Explain the importance of sound	1. Why does water change? 2. How does water affect people and other things in the environment 3. Properties and impact air make on our environment 4. What is sound and how does it affect us? 5. How does sound help me to get information(The human ear and hearing)	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. Brainstorming Activity: Learners research and discuss storms, heavy winds (moving air) and their effects on the environment. **Center:** learners watch ice in a pan, watch red clay added to water, observe changes and say what cause the changes. Chart display: What are the three (3) sources of water? Blow air into balloons or small, clear plastic bags. Discuss air and its shape.	**Level textbook(s)** Empty bowls red clay water ice cubes balloons small clear plastic bags posters and internet resources Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments

			Sound gets to my ear (sound travels through the air to reach my ear); sound can also travel through water and materials Research from internet sites on artificial satellite and **compile** for individual report. Bring a collection of local materials and items that can be used for making satellite model **Individual work: Content** vocabulary(key words)	**www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

GRADE: 2
PERIOD: III
TOPIC: EXPLORING HUMAN BODY

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
1. Name the human body parts in general **and e**xplain basic facts about the female and male private parts	At the end of this topic, learners should be able to: 1. Name the major parts of human being. 2. Distinguish male from female. 3. State sensitive body parts.	**Getting to know your body** ✓ Male private parts, ✓ female private parts **Differences between male and female** ✓ Female can get pregnant ✓ Male cannot get pregnant ✓ Where does the baby live ✓ Where does the baby come from ✓ Introduce gender – we are both humans, made differently but equal, each one deserves respect ✓ Good touch vs bad touch ✓ How to report bad touches **Privacy and body respect**	1. Naming the major body parts including the five sense organs. 2. The senses and body organs used for sensing. 3. Using songs to name body parts (Head-kneel-shoulder –toes) 4. Using Pictures: let learners identify similarities and differences between boys and girls. 5. Point to the pictures to focus on the private parts of boys and girls. 6. Illustrate negative touches on yourself –	Chart naming body parts Pictures of male and female body parts Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test

		What part of the body can be shown & what part is private/ covered ✓ Privacy **Respecting your body and that of others** ✓ Do not harm yourself ✓ Do not harm others Your body belongs to you and not to anybody else	which pats can be touched and which parts cannot be touched Tell how the negative touches can be avoided - not being naked in front of people, not being alone with people of the opposite sex… ***(this varies according to country).*** 7. **Use a picture**: Ask volunteer to point to the parts of the body that are private 8. **Tell:** how private parts should be taken care of **Slogan:** In Liberian English teach the children to repeat after you: "***this is my body, I respect it"*** Repeat this three times in a chorus		• Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 2
PERIOD: IV
TOPICS: EXPLORING AND GROUPING PLANTS IN MY COMMUNITY
EXPLORING SOME PLANTS THAT CAN BE FOUND IN DIFFERENT KINDS OF HABITATS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS	EVALUATION/ COMPETENCES
Learners will be able to compare and contrast information using a visual chart and present their findings	At the end of this topic, learners should be able to: 1. Identify the types of plants by appearance, color, and habitat. 2. Identify basic parts of a typical flowering plant. 3. State the functions of the basic parts of flowering plant. 4. Describe characteristics of some flowering plants. 5. Observed differences between flowering plants and other types of plants.	• Classification of plants by structure, color, habitat. • Parts of a typical flowering plant and their functions • Parts, appearance, color, and habitat of some non-flowering plants	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Whole class**: Field trip - Collection of plants from various habitats, including water habitats. **Center:** guided discussion **-** Provide good points for the argument "I cannot Live Without Plants" Specimen: plants from various habitats, including water habitat. Chart: Complete in class – comparing plants' habitat, structure, color, flowering or non-flowering	Level textbook(s) Plant picture books Catalogue of plants and their habitats from the internet. Specimens of different types of plants by habitat, color, etc. Posters of labelled plant pictures Chart showing parts of plants Incomplete Chart for comparing plants' appearance, color, and habitat of some non-flowering plants. Teacher-Made Word Cards	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

	6. State some of the uses of some known plants		Poster: diagram of a typical local flowering plants. **Home work**: Observe various plants in your community and write your observation of stem and leaves **Individual work:** Match (with Teacher-made cards**) -** functions of plant parts; uses of parts to humans, other plants, animals.	Worksheets/Activity pages in Textbook. Internet sites. *Please pay attention to proprietary information per site. Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	• Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 2
PERIOD: V
TOPIC: CLASSIFICATION OF ANIMALS AROUND ME IN THEIR GROUPS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION/ COMPETENCES
Learners will be able to express evidence of adaptations and congruence. Learners will search for information using tech devices.	Upon completion of this topic, learners should be able to: 1. Name the places where we find animals. 2. Match animal features with their functions and habitat. 3. Place animals in groups according to named features	1. Where do we find animals? 2. Why do we group (classify) animals? How do we Classify animals? 3. Animal Body Structures and functions 4. Adaptations of animal features to functions and habitat. 5. Importance of animals in the ecosystem.	**<u>Inclusive and Differentiated Learning:</u>** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Small groups**: Observe a pet/ Boney fish as an animal specimen and name the features observed **Whole class**: Group animal names/ pictures/plastic models on a *Tree Diagram* to show Vertebrate and Invertebrate Groups. Create a song or rhyme to remember the animal groups. Make poster of song/rhyme	Level Textbook(s) Posters of animal photos Tree Diagram template Name cards/picture cards/plastic/ models of animals pictured in the class Specimens: Dried "Boney" fish Arrange for Pet Blank poster sheet Markers Worksheets/Activity Internet sites. *Please pay attention to proprietary information per site. Internet source: Internet sites: Facilitators are	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*<u>Select relevant option</u>*<u>):</u> • Quizzes • Test • Class and Homework • Assignments

			Choral-read notes on Classification from an online site (e.g. w.w.w.kidzone) or a textbook **Center:** Make a list of "Ten Good Reasons to Have animals in our World" **Home work**: Watch/Listen to Animal classification unit lesson (YouTube). **Pairs:** Observe physical features on specimen (Pet/Boney fish) and answer "Yes" or "No" to questions posed. **Individual work:** Describe an animal that is different from a pet studied	encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 2
PERIOD: VI
TOPIC: EXPLORING DRUGS
EXPLORING MY BODY

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Know the types of drugs that are harmful to the body Understand the effect of using drugs Explain why they should say **no** to using drugs Explain basic facts about the female and male private parts Discuss the differences between male and female bodies	At the end of this topic, learners should be able to: 1. Tell the meaning of the word "drug". 2. Tell the difference between good drugs and bad drugs and where each type can be found. 3. Identify the real and local names for bad drugs. 4. Name the parts of the body and match each with its	**Drug abuse** ✓Kinds of bad substances used by people in the community (definition) Marijuana Opium Alcohol Tobacco Snuff ✓Effects of using bad substances on: the individual body & mind, family, society, school Addiction Alcoholism ✓Why you should say No to using them. **Getting to know your body**	**Demonstration:** Ask group of three or four children to demonstrate how drugs are used. Ask the class to tell what the drugs are called. Using their knowledge from Grade 1, ask volunteers to tell the different effects drugs have on individual and the family **Peer Pressure lines:** Use common pressure lines and ask learners to tell what they would respond. **Examples** *"Just try, once"* *"It's harmless"* *"It will make you see things/ feel happy"* Help learners phrase responses to the above peer pressure lines. **Use Pictures: Let learners** identify similarities and differences between boys and girls	**Charts** **Posters** **Picture books** **Videos** Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test

Appreciate the similarities between male and female Identify bad touches Explain how they should be avoided	proper function 5. Talk about the wrong ways of using our body parts.	✓Male private parts, ✓female private parts **Differences between male and female** ✓Female can get pregnant ✓Male cannot get pregnant ✓Where does the baby lives ✓Where does the baby come from ✓Introduce gender – we are both humans, made differently but equal, each one deserves respect. ✓Good touch vs bad touch ✓How to report bad touches	Point to the pictures to focus on the private parts of boys and girls. Illustrate negative touches on yourself – which parts can be touched and which parts cannot be touched Tell how the negative touches can be avoided - not being naked in front of people, not being alone with people of the opposite sex… (This varies according to country).	**and others** **(*Please pay attention to proprietary information)**	• Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 3
PERIOD: I
TOPIC: EXPLORING THE ORGANIZATION OF THE EARTH

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to illustrate the different ways and purposes that the earth is organized. Learners will be able to communicate health information from Food Chain as project, simulation, Role Play, or model	At the end of this topic, learners should be able to: 1. Interpret information from models of how the earth is organized. 2. Explain that the earth is organized in different ways for different purposes 3. Relate the earth's spheres to their unique components 4. Interpret information from the food chain, food web 5. Relate information in the food pyramid to health 6. Agree that the Food Pyramid is a visual guide to healthy eating	1. The spheres of the earth 2. Food-web 3. Food chain 4. Food pyramid	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Whole class**: Simulation -assign learners to draw and cut out masks to wear; lie on the floor to simulate Food Chain or Food Web Internet Lesson plan: teacher-guided class activity. "Earth System in a Bottle" (Elementary GLOBE wwwearthsciweek.org)	Level Textbook(s) Downloaded lesson plan "Earth System in a Bottle" Food items "Giant Bowl" made by cutting a large round shape from empty carton Poster paper Crayons, scissors, glue, strings and markers Empty mineral water bottles (Large sizes) 1. Website: wwwearthsciweek.org 2. Textbook **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

	7. Create an innovation for sharing health information from the food pyramid.		Learners take turns as "Teacher for the Day" using project**.** Poster: class answer teacher's questions on the Food-web, Food chain, Food pyramid **Center:** watch videos on topics and complete downloaded worksheets. Discussion Circle - on food web, food chain and food pyramid - ***Portfolio/Project**: Mini-**Project:** Prepare a "Giant Healthy Bowl" from the information in the Food Pyramid		• Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 3
PERIOD: II
TOPICS: EXPLORING OUTER SPACE
HEALTH LESSON: HUMAN REPRODUCTION AND PUBERTY

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be to upgrade their knowledge of the solar system and its activities. Explain the stage of puberty among females and males Explain the different steps in reproduction. Plan when they want to have a baby.	After completing these topics, learners should be able to: 1. Tell the distance between the sun and each of the planet. 2. Discuss the eclipses. 3. Tell why we have eight planets instead of nine. 4. Define the term star, satellite, meteor, meteorites, eclipse, and galaxy. 5. Relate earth's movement to: day, night and seasons. 6. Illustrate the earth's rotation and revolution with a model.	1. The solar system: Differentiate Planets 2. Earth's motion 3. Eclipses 4. Health Lesson: Steps in Human Reproduction; Puberty **Puberty** **Definition of puberty** **Key features of puberty** ✓ Parts of the body undergoing changes ✓ Menstruation, wet dreams… ✓ Physical changes ✓ Emotional changes ✓ Social changes **Steps in reproduction** ✓ Ovulation	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. . **Whole class**: Simulation – assign roles for learners to label, position and move to mimic rotation and revolution of the earth (Note axis, orbit, hours, day/night, year) Research reports **Center:** Listening/Discussion **-** a level-appropriate reading, audio, or video of any – Sputnik, First Man in Space, Apollo 11 Mission, etc. **Home work**: Research and report on "The Fall of Pluto" Watch video (National Geographic on You Tube channels) on the eclipses,	Level Textbook(s) Computer Video equipment Internet Links: Google You Tube (National Geographic Space videos) Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic . **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills. • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

		✓ Fertilization ✓ Conception ✓ Pregnancy ✓ Delivery of the baby Right time to have a baby Circumstances for one to have a baby How pregnancy can be avoided	using phone, computer, etc. Write questions for discussion. **Individual work:** Research and report on "The Fall of Pluto" **Audiovisual**: Listening/Discussion **-** a level-appropriate reading, audio, or video of any – Sputnik, First Man in Space, Apollo 11 Mission, etc.	**and others** **(*Please pay attention to proprietary information)**	• Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 3
PERIOD: III
TOPIC: INVESTIGATING FORCE, ENERGY, WORK AND POWER

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to demonstrate the relationship amongst force, energy, work, power and machines	After completing these topics, learners should be able to: 1. Explain the meaning of force 2. State the types of forces 3. Explain the uses of force 4. State forms of energy and sources 5. State the differences between work and the rate of work (power) 6. Name examples of the six simple machines and explain the uses	1. Force 2. Energy 3. Work 4. Power 5. Machines	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: place learners in mixed ability groups and assign tasks to work on "My Satellite of the Future" model • **Whole class**: Spider Diagram - ask questions and use answers to make Spider Diagram to communicate information e.g. force, pull/push; can change; motion; position; creating; work	Level Textbook(s) Specimens of simple machines Incomplete charts, Tree Diagrams, Spider Diagrams Internet: http//Pinterest **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments

			• Reading Comprehension - learners read notes from textbook or chalkboard and answer focused questions • What type is it? • How do we use it? • Can humans make it? • Demonstration - the definition of kinds of forces and have learners tell what type by filling a Tree Diagram • Cross Curricular - collaborate with P.E. class to – e.g. tug of war, hand wrestling, and relay • **Center:** Chart **-** supply information to complete a partially prepared chart		• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 3
PERIOD: IV
TOPIC: INVESTIGATING MORE USES OF PLANTS
INVESTIGATING HOW WE CARE FOR OUR BODIES

OUTCOMES	LEARNING OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners are able to: Describe the ways we use plants and plant products as sources of nutrients. Explain the basic facts about the effects of bad substance on the body **and** practice different ways of avoiding using bad drugs. Explain how STI get into the body and how they do not and identify ways of preventing STIs	After completing this topic, learners will be able to: 1. Make a catalog of some local plants and some ways we use them. 2. Match local plants with the major nutrient groups. 3. Group local plants used for food, medicine, clothing, building materials, grooming and skin care, ornaments. 4. Explain the effects of drug and alcohol abuse on the body	1. Plant: Catalog of twenty (20) Local plants and their uses 2. Nutrients from Liberian plants: Group some local names against major nutrients (Carbohydrates, proteins, fats& oils, vitamins and minerals) 3. Alcohol & Drugs abuse. How bad substances enter the body ✓ Through the mouth ✓ Nose ✓ Skin	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. **Whole class**: Story Telling **-** Invite a child or two to share how substance enter the body ***(if no volunteers, tell a story –keep it short)*** **Center:** Guided Discussion: - "Which plant can supply our bodies with…. (Carbohydrates etc.)" Display - A catalog of some local plants matching them with uses and nutrients **Tell**: What drugs do to the human body	**Level Textbook(s)** Teacher-made incomplete posters (2) Science charts Pictures **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms

	5. Explain the importance of personal hygiene	Effect of bad substances on the Body Ways of avoiding taking in bad substance Sexually Transmitted Infections (STI) 1. What is STIs 2. Common STIs 3. Common symptoms ✓ Syphilis ✓ Gonorrhea ✓ HIV ✓ Hepatitis B ✓ Itchy fish (trichotomies) Ways of getting and not getting sexually transmission infection How to avoid STIs	Repeat the slogan *"**this is my body; I respect it" I'll not put drugs into it"*** **Review** Peer pressure lines for substance abuse, add others from the children **Show and tell:** Pictures are priceless here. Use pictures to show how STIs affect the body **Brainstorm:** How do STIs get into the human body? **Tell:** How they do not get into the body **Demonstrate:** refusal skills against sexual advances **Explain:** the value of waiting and having sex when older		• Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 3
PERIOD: V
TOPICS: INVESTIGATING WHAT MATTER IS MADE UP
INVESTIGATING COLORS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners are able to describe the fundamental properties of matter and how they are measured.	After completing this topic; learners should be to: 1. State what is matter 2. Properties of matter 3. The different states of matter 4. Ways to measure different properties of matter	1. Matter: 2. Properties of matter 3. States of matter 4. Measurement of the properties of matter	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: Learners be divided into smaller groups –solid, liquid and gas. Ask each group to describe shape, color , mass etc • Fill two water plastics with equal amounts of water, freeze one plastic until the water becomes a solid. Then measure the mass of each plastic, then breathe air into same size plastic to measure its mass. Record your data • Exploration - groups be given at least ten objects to classify by their physical	Level Textbook(s) Internet site: *htt://www.youtube.com/watch?=3SUPACBJGs* Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal

			properties-color, size, shape, texture and mass • **Whole class**: Observation - assemble materials such as pencils, cup with water , empty bowls and ask learners to describe them by shape, size and color • Anchor charts - the learners and teacher create charts and observe properties of various objects • **Center:** Discussion and Modeling - how to use hand lenses to explore properties of matter.		• Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 3
PERIOD: VI
TOPIC: INVESTIGATING CHANGES IN WEATHER AND CLIMATE

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to relate climate to natural and human factors Learners will be able to outline how earth's position and movements bring about changes in seasons and climate.	At the end of this topic, learners should be able to: 1. State the causes of weather and climate 2. Name the six main types of climate. 3. Explain the ways that weather influences climate. 4. Name the physical signs of changes in weather. 5. Describe the how human activities affect climate changes. 6. Identify critical readings on weather instruments (hygrometer, wind vane, rain gauge, thermometer)	1. Weather Factors influencing Weather: a) Atmosphere pressure b) Wind and its direction c) Humidity and temperature d) Precipitation and e) Rotation of the earth f) Evaporation and condensation 2. Climate a) Factors influencing the climate	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: place learners in mixed ability groups and assign tasks to write on the types of energy they know. • **Pairs:** Assign pairs to keep record of weather readings for a week and report on Monday of week following. • **Whole class**: Listen to the day's weather readings of a temperate climate region (e.g., U.S.A.) on the internet as read by the teacher.	Level Textbook(s) Weather instruments Poster paper Internet sources Audio/Visual equipment Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments

			• Discuss how the differences might feel. learners take turns to read aloud and pose questions to the class on topic(s) • **Center:** Make Science Center Chart of "Critical Numbers" for the (average day temperature for Liberia; average humidity; etc.) • Research on Climate Change and make a personal list of "Do" and "Don'ts) in Journal to share with class. • **Home work**:: watch "What is Weather" on You Tube or National Geographic Chanel ". write your report and bring to class	**(*Please pay attention to proprietary information)**	• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 4
PERIOD: 1
TOPIC: ENERGY

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RSOURCES	COMPETENCIES ASSESSMENT
Learners will be able to state properties, types and forms of energy as well as its usefulness.	Upon completion of this topic, learners should be able to: 1. State the meaning of energy 2. Name the types and forms of energy 3. To state the properties of energy 4. Discuss energy transformation	1. Energy Definition 2. Properties of energy a. Energy can be stored b. Energy can change form c. Energy cannot be conserved/stored and destroyed 3. Types of Energy: a. Potential b. Kinetic 4. Forms of energy a. Mechanical b. Electrical c. Light d. Heat e. Sound	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: place learners in mixed ability groups and assign tasks to write on the types of energy they know. • **Pairs:** Take turns to read on the topic to each other. Make key words list. Read list to class. • **Whole class**: Brainstorm about learners idea on the topic. Discuss to get a complete list • Complete a chart showing energy type, and example.	**Level Textbook(s)** Charts Poster sheets Markers Flash light bulb Dry cell Wires Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments

		5. Energy transformations 6. Uses of energy	• **Center:** Name an activity and have learners tell what form of energy is used(e.g. cooking-heat energy) • Display energy chart from the *Whole- Class.* • Demonstrate change of form of energy using dry cell (flash light battery) • **Home work**: bring a list of items or materials that store energy at your homes for "Show -and -Tell " • **Audiovisual**: Watch YouTube animation on ***"types of energy***". Discuss, completing the sentence "I learn that ….." • **Science journal**: Learners fill out journal		• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 4
PERIOD: II
TOPIC: FORCE AND ITS KINDS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners can recognize force and its importance in doing work.	: Upon completing this topic, learners should be able to: **1.** State the meaning of force **2.** Give examples of forces **3.** Use the spring balance to measure force	1. **Force** a. Definition 2. **Two groups of forces** a. Contact Forces b. Field forces 3. **Measurement of force:** a. Unit of force b. Instrument use to measure force	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: place learners in mixed ability groups and assign tasks to draw and describe types of forces in action. • **Pairs:** Take turns to read on the topic to each other. Make key words list. Read list to class. • **Whole class**: A *field trip* to a playground to investigate contact force in swings, see-saws and merry-go-round forces. Learners write on their observation. • **Center:** Demonstration - allow learners stand at different heights with different objects and drop the objects each at a time. Three questions: • What moved	**Level Textbook(s)** Table, marble Palms (hands) paper cups Pencil and Sheet Book Spring balance string DVD/Video of forces in action, e.g. volcano erupting, racing cars Computer Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms

			• In which direction did it move? • Why do you think the object moved in that direction?	**www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 4
PERIOD: III
TOPIC: MEASUREMENT OF SOME PHYSICAL PROPERTIES OF MATTER

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners are able to read units of measurement in the metric system.	Upon completing this topic, learners should be able to: 1. Name the tools for measuring some physical properties. 2. Demonstrate how to measure some physical properties. 3. Assign units to properties measured. 4. Differentiate between Metric and Imperial Systems of measurement	1. Names of some measurement tools Measuring different properties: a. Weight b. Volume c. Length Compare values of the two systems of measurement a. Pounds and grams b. Ounces and liters c. Inches and centimeters 2. Units of measurement in two systems – English and Metric 3. Measuring tools:	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: place learners in mixed ability groups and assign tasks to write on the types of tools of measurement they know. • **Pairs:** Take turns to measure given objects. One member reads the imperial value and the other reads the metric value. • **Whole class**: Display- spring balance, pan balance, meter rule, tape rule, graduated cylinder, beakers, name labels. Learners take turn to pick up each instrument and read the name. • Demonstrate the use of each tool for measurement.	**Level Textbook(s)** ▪ tape line ▪ paper cups and mugs ▪ scales Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments

		4. Converting from one system to the other	Learners answer the questions (What property is measured? • What is the reading?). Record readings on the board in both systems in columns. . • **Home work**: Learners use ruler to measure some objects at home (e.g. foot, length of copy book, etc) and record the value in both metric and imperial units. • Use google to find equivalent values of metric and imperial for weight, length/distances, volume. • Use information from the net and consult with parents to tell distance from their homes to the school in both metric and imperial units. • **Science journal**: arrange the equivalent values of their homework measurements in table form.		• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 4
PERIOD: IV
TOPICS: THE SATELLITES AND THE STARS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS	COMPETENCES ASSESSMENT
Learners will be able to express appreciation for scientific advancement, particularly artificial satellites	Upon completing this topic, learners should be able to: 1. Explain what satellites are 2. Name some artificial and natural satellites 3. Demonstrate the movement of satellites. 4. Investigate how nearly all space crafts are man-made satellite (e.g. Apollo, Gemini, and Skylab) 5. Attempt a model of "My Satellite of the Future"	1. Earth's orbit 2. Earth's satellites 3. Natural and artificial satellites 4. Stars and Galaxy 5. Giant stars	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small groups**: place learners in mixed ability groups and assign tasks to work on "My Satellite of the Future" model • **Whole class**: Brainstorm about learners' idea on topic. Discuss to get a complete, correct ideas and post them on wall or chalkboard. • **Center:** watch videos on topics and complete downloaded worksheets.	1. Level Textbook(s) 2. Downloaded worksheets 3. NASA, STEM, National Geographic sites on the topics Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others** **(*Please pay attention to proprietary information)**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms

			• **Home work**: • Research from named internet sites on artificial satellite and organize for individual report. • Begin a collection of local materials and items that can be used for making satellite model • **Individual work:** Individual research reports. • **Audiovisual**: Watch downloaded YouTube videos. • **Science journal**: Learners fill out the **KW** of the **KWL** chart. • ***Portfolio/Project**: Replicate the Group model of "My Satellite of the Future." For individual portfolios		• Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 4
PERIOD: V
TOPICS: SKIN PROFILE (LAYERS)
SOIL PROFILE (LAYERS)
MALARIA

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIAL	COMPETENCES ASSESSMENT
Learners will be able to appreciate the organization of the skin and compare same to that of soil Learners will be able to identify the benefits of keeping the environment clean to prevent malaria.	Upon completing these topics, learners should be able to: 1. Describe the layers of the human skin 2. Describe the layers of the soil 3. Visualize the ways the skin profile and soil profile are similar 4. Describe how malaria gets to us through the skin 5. Make personal plan about how to prevent malaria infection	Skin: layers and functions Similarities between skin profile and soil profile Malaria and Prevention Soil profile	**Inclusive and differentiated Learning:** Individual seat works or work in mixed groups according to gender, abilities, learning styles, portfolios etc. • **Small groups**: in two mixed abilities groups – one group makes soil profile in a glass or plastic. The other prepares a poster of cut and pasted micrograph or good drawing of the cross-section of the human skin. • **Pairs:** Take turns to read on the topic to each other. Make key words list. Read list to class. • **Whole class**: take a field trip to and open, non-rocky area where the soil could be dug to a depth of about 10 feet. • Learners record the different changes they notice in the color, particle sizes, and texture that they see.	1. Charts of the skin 2. Trend of HIV in Liberia and globally 3. Chart on STIs 4. Soil 5. Dishes or cups Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test

	6. State how malaria is transmitted and how it can be prevented		• Learners are called upon to share their observation notes on returning to class. • Learners bring soil samples that represent each of the changes observed per layer. . • **Center:** soil profile in a jar and the poster of skin layers are displayed. Also labelled pictures of the soil layers are as well as skin layers are displayed. • Learners name the similarities and differences to be organized in a Venn diagram. • **Audiovisual**: Watch a video presentation on malaria and do worksheet activities after watching. • **Science journal**: Learners will copy key word and their explanation of their meaning into journals. • Learners will sketch diagrams: soil profile, skin profile, pathway of malaria infection. • ***Portfolio/Project:** class will design and describe a plan for destroying mosquito breeding places around their homes.	**and others** **(*Please pay attention to proprietary information)**	• Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 4
PERIOD: VI
TOPIC: HEALTH AND PERSONAL HYGIENE

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS	COMPETENCES ASSESSMENT
Learners will be able to: Explain the importance of changes that occur in the body during puberty Identify the different types of changes Recognize inappropriate touching regardless of who does it Act to protect oneself from sexual abuse (inappropriate touches) Understand the facts relating to the processes of conception, pregnancy and childbirth	Upon completing these topic, learners should be able to: 1. Describe body changes during puberty. 2. Explain the ways of preventing pregnancy. 3. Discuss sexual abuse and how to avoid it	**Body changes** **Changes that occur in boys and girls** ✓ Physical changes ✓ Changes that affect the mind ✓ Social/cultural changes **Changes in the way boys and girls are treated** **Unwanted sexual attention** Difference between good and bad touches ✓ What are-good touches and bad touches ✓ Who are possible perpetrators ✓ Reporting bad touches ✓ How to avoid them **Pregnancy/ signs and symptoms**	✓ Q & A on what is good health and importance of keeping healthy ✓ Drawing of a boy and a girl (dressed and undressed) and identify body parts that undergo changes ✓ Small group work based on the different types of changes (physical changes, social changes) Develop matching exercises to have learners show linked to good and bad touches. ✓ Example of bad touch (I do not want anyone to touch my buttocks, breast, vulva and penis). ✓ Example of good touches (I want my friend to shake my hands, hold my hands, etc.).	**Charts** **Posters** **Picture books** **Videos** **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills, • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

Explain the consequences of pregnancy for the teen mother and her partner Be able to act to prevent teen age pregnancy		✓ Who gets pregnant? ✓ Who pregnant their partner ✓ What can a female do to make sure she does not get pregnant? ✓ The role of the Father during pregnancy	✓ Teacher to demonstrate example on bad touches and good touches. ✓ Class discussion with teacher throwing open-ended questions to get student knowledge on pregnancy and it signs ✓ Brainstorm to get learners knowledge on pregnancy regarding ways to avoid getting pregnant. ✓ Role play showing the role of a prepared and unprepared father during pregnancy		• Assignments • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 5
PERIOD: I
TOPIC: SIMPLE MACHINES AND WORK

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Recognizing the importance of the usage of machines to do work Recognize that energy exist in different forms	Upon completing this topic, learners should be able to: 1. State the meaning of machine 2. Name the six kinds of simple machines. 3. Identify some simple machines used alone or combined tools used at home 4. Demonstrate how a simple machine works 5. Explain the relationship between force and work 6. Describe the kinds of forces	1. Definition and examples of the Six Simple Machines 2. The Work that Simple Machines do. 3. Demonstrating with Simple Machines 4. Machines and Work – Mechanical Advantage 5. Machines and Energy - definition - some forms of energy - energy and force (relationship) - forces that makes - machines work Force • Work and force • Frictional force • Gravitational force	**Inclusive and differentiated Learning:** Individual seat works or work in mixed groups according to gender, abilities, learning styles, portfolios etc. • **Small groups**: place learners in mixed ability groups and assign tasks to work on list and draw some simple machine • **Whole class**: Brainstorm on what is/are ….? What is the purpose ….? (Use the **P**ose, **P**ause, **P**robe, **B**ounce to focus) • Collate - make corrections/adjustments and provide definition of and/or a list • Discuss - uses, examples, etc. (elicit suggestions for making machines, by named type, work better) • **Center:** watch videos on topics and complete downloaded worksheets. • **Home work**:	**Primary Text** New Elementary Science for Liberia Grade 5 Pupil's Book (PEARSON 2014). paper, cartons and scissors Hoe, shovel, knife, screw, wedge, incline plane etc. matches, candle, coal, battery, flash light, bulb, etc. Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills. • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework

			Research from named internet sites on artificial satellite and organize for individual report. • Begin a collection of local materials and items that can be used for making satellite model **Individual work:** • Individual research reports. • **Audiovisual**: Watch downloaded YouTube videos. • **Science journal**: Learners fill out the **KW** of the **KWL** chart. ***Portfolio/Project**: • Replicate the Group model of "My Satellite of the Future." For individual portfolios. **Small Groups**: • **Demonstrate**: use demonstration to label • **Summary**: call on individuals to review information, definitions to put on board or poster. Use appropriate graphic organizer.	**and others** **(*Please pay attention to proprietary information)**	• Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 5
PERIOD: II
TOPIC: SOUND AND LIGHT ENERGY

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES/ ASSESSMENT
Learners will show interest in making use of science ideas (technology)	Upon completing this topic, learners should be able to: 1. State the meaning and properties of energy 2. Describe how sound energy is produced 3. List some common instruments that produce sound energy 4. Explain how sound energy can be used in communication 5. Demonstrate how sound travels 6. Describe how to turn sound energy into light energy and back. 7. Identify sources of light	1. Energy in different forms 2. Sound is a form of Energy 3. Properties of Sound 4. Instruments that produce Sound. 5. Light and its Sources 6. Characteristics of Light 7. Converting Sound energy to light energy.	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/ disabilities, and age to be involved in the following activities. • **Small Groups (Vocabulary):** divide class into groups and assign group of Key Word per Team to compile a glossary to display • **Whole Class:** prior to each of the following experiments, learners set up their Science Journals • **Center:** Demonstration on how sound travels along a tightly stretched string • Discussion of how sound travels • Explanation of how sound can be reflected and that it takes time to travel • Explanation of how sound can be repeated (echoes)	Primary Text New elementary Science for Liberia Grade 5 pupil's Book (PEARSON 2014). string, rope, empty cans Guitar Matches Candle Battery Bulb Wire Mirror magnifying glass empty carton flash light - water sugar, sand, etc. clock, watch matches	**EXPECTED COMPETENCIES** • Effective communication skills • Research and Problem solving skills • Digital skills • Analytical skills • Creativity and Innovation skills **ASSESSMENT STRATEGIES to** *be used to check competencies* (*Select relevant option*): • Quizzes • Test • Class and Homework • Assignments

			• Demonstration of how the size, shape and tightness of parts of a vibrating musical instruments affect the sound produced by said musical instruments • Description of the flame of a burning candle. • Demonstrating that light bends when it enters water • Discussion of how light travels • **Homework:** learners write Conclusion/Application of Journal (Use and cite at least two internet sites visited.)	candle Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 5
PERIOD: III
TOPIC: HEALTH LESSONS

LEARNING OUTCOMES	LEARNING OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Understand that nutrition helps people living with HIV lives longer Understand the body immune system and how it keeps us healthy Explain the facts about conception Identify different types of contraceptives, how they work, their strengths and side effects Identify where to find contraceptives in one's community	Upon completion of this topic learners will be able to: • Broaden their knowledge on the impact of nutrition during in HIV infection; • Outline the facts of conception • Research different types of contraceptives, strengths, weakness and side effects • Identify community health services	HIV & Nutrition **The role of nutrients in HIV infection** • What is nutrient • The three(3) food groups (protective, energy, body building) • What is the body immune system • How nutrients improve our immune system Caring for the nutritional needs of PLWHIV **Human reproduction** **Physiological changes** What are the changes How does the body prepare for physiological changes	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • Use picture to identify the three(3) food groups • Brief lecture after pictorial code depicting the different nutritional status of PLWHIV • Whole class discussion on identification of needed amount of food from each food group on a daily basis (at least one kind of food from each group) • Put boys and girls in separate working groups and ask them to discuss body changes they experience	Posters Charts Paper Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **http://www.sciencekids.co.nz/experiments** **http://www.kidzone.ws/science** **www.owlcation.com/stem** **https://www.sciencea-z.com** **and others** **(*Please pay attention to proprietary information)** **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org**	• Effective communication skills: Learners will be able to effectively communicate healthy and unhealthy ways of expressing sexuality as well as safety guidelines for HIV and STIs **Tools:** • **Quizzes** • **Test** • **Class and Homework** • **Assignments** • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks

Explain the benefits of abstinence Identify risky situations Practice how to avoid risky situations Practice refusal skills Understand ways of expressing friendship and love that will lead to building healthy relationship Get out of unhealthy relationships	• Distinguish the benefits of abstinence • Dramatize risky behaviors and situations • Differentiate healthy and unhealthy relationship	**Pregnancy** When does pregnancy occur How to prevent pregnancy **Contraceptive**s ✓ Kinds of contraceptives, their strengths and weaknesses **Abstinence** ✓ Its importance ✓ What are risky situations? ✓ How can they be avoided? ✓ Refusal skills **Sexuality** **Ways of expressing friendship and love/healthy and unhealthy relationship** ✓ Knowing self-acceptance and that of others ✓ Ways of expressing friendship	• Use a chart to demonstrate the menstrual cycle and ovulation • Case study: Scenario discussing menstruation and ovulation between parent and children • Small group discussion on when does pregnancy occur • Whole class discussion on the different types and names of contraceptives • Role play on preventing pregnancy through refusal & good decision making skills • **Think and Write:** invite learners to think of what they want to become in the next 10 years and write it down. • Ask them how having a baby as teenagers can change their plans. • Ask volunteers to share their plans and how pregnancy could change these plans • **Role Play:** Ask volunteers to show risky situations that they should avoid in order to achieve their live plans. • Use the role play to discuss more about risky situations.	**www.sciencefun.org**	• Group and Individual oral reports. • Center activities • Paper-based activities.

		✓ Ways of expressing love ✓ Qualities of good relationship and bad relationship	• **Group Discussion:** *"How can these risky situations be avoided?"* • Demonstrate ineffective refusal skills (*when girls say no, they mean yes*). • Explain the steps in effective refusal skills • Ask learners in pairs to practice effective refusal skills. • Play a game on building respect for one self and that of others • Have the class discuss on how our perception of what others think about us affect our self esteem • **Drama**: Dramatize on enhancing self-esteem and accepting others • **Write** a story showing qualities of good friendship and that of bad friendship • **Practice skills** of effective communication and good mannerism • **Role play** on healthy relationship showing effective communication, decision making, negotiation and assertiveness		

SEMESTER TWO

GRADE: 5
PERIOD: IV
TOPIC: ORGANIZATION OF LIFE

OUTCOMES	LEARNING OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Practice health care behavior to prevent diseases Encourage gender equity in our society	Upon completion of this topic, learners should be able to: • Differentiate between cells, organs, tissues and systems • Name the kinds of tissues, organs and systems • Explain the function of tissues, organs and systems • State the functions of the digestive , circulatory and excretory systems • Describe some body changes at puberty	1. Life starts with Cell (building block of life basic structure) 2. Examples of Tissues, organs, and systems: 3. One organized System in Animal: What happens to my rice? 4. One Organized System in Plant: Do Plants Breathe? 5. Male and female external reproductive system - structures and functions 6. Adolescent development a. body changes b. menstruation and c. ovulation d. teenage pregnancy	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities • **Small groups**: Presentation - divide learners into two mixed groups to present on factors that affect plant population and how over population affects plants survival • Concept map - assign learners into mixed groups to classify plants into their various groups and classify animals into the two groups. • **Whole class**: discussion - on characteristics of invertebrates and vertebrates with examples • **Center:** hands on activities - Preparation of specimens	Primary Text New Elementary Science for Liberia Grade 5 Pupil's Book (PEARSON 2014). Posters – of cell, Organs, organ system Microscope Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. http://www.sciencekids.co.nz/experiments http://www.kidzone.ws/science www.owlcation.com/stem	**EXPECTED COMPETENCIES** **Effective communication skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks

		7. Personal hygiene and sanitation a. care of the mouth, teeth, nose, eyes, hair b. care of our surroundings c. Care of genitals	from any two kinds of vertebrates. • **Home work:** Listing of conditions favorable for plants survival. • Observation of cells using the microscope • Drawing and labeling their main parts of cells of plants and animal. • Discussion on the organization of life from cells to organs and from organs to systems • Drawing and labeling the organs of the digestive, circulatory, and excretory system • Explanation of the function of the digestive, circulatory, and excretory system. • Drawing and observing the female and male reproductive system • Listing the external organs of male and female reproductive systems and stating their function.	**https://www.sciencea-z.com** **and others** **(*Please pay attention to proprietary information)** **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Group and Individual oral reports. • Center activities • Paper-based activities.

			• Displaying a diagram of the external structures of the male and female reproductive system outlining physical differences of sexual organs • Description of body changes during adolescent development. • List of mental and physical characteristics of males and females • Discussion on menstruation and ovulation. • Identifying and discussing the effects of teenage pregnancy • Explanation of how to take good care of the surrounding especially your classroom and homes • Explanation on how to care for genitals		

SEMESTER TWO

GRADE: 5
PERIOD: V
TOPIC: STRUCTURE OF MATTER

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCIES ASSESSMENT
Learners will be able to create a model to demonstrate atomic movement in the different states of matter.	Upon completing this topic, learners should be able to: 1 Describe the fundamental structure of matter 2 Explain that matter contains atoms and molecules 3 Differentiate between atoms and molecules 4 Explain the changes in matter	1. Matter: a) structure 2. composition of matter: a. element b. atoms c. molecules 3. Actions that change matter: a) Physical b) Chemical	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small Groups (Vocabulary):** divide class into three groups. Each group copies squares and dots, from a template provided by teacher, for different states and movement of molecules in each of the three states of matter. • **Pairs:** • **Whole Class:** brainstorm using **PPPB** (**P**ose, **P**ause, **P**robe, **and Bounce**). Questions: Is this matter? What is inside? - for each of several items shown to class. • Supply information: "All matter is made up of atoms; atoms are always moving" – add that no one can see atoms but we can illustrate how atoms behave in the three states of matter.	1. Primary Text: 2. Darsaw Arthur, Fischer-Buder Karin New Elementary Science for Liberia Grade 5 Pupil's Book (PEARSON 2014 Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org** **and others**	Analytical skills Communication skills **Tools:** • Quizzes • Test • Class and Homework • Assignments Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports.

			• Class is divided into three equal groups to represent the three states of matter (solid, liquid, gas). • Group leaders from Small Group work will come up in front of the class; another member of the group will stand behind the persons with the squares in appropriate representation with small raised posters with the words Solid, Liquid, and Gas. • **Center:** the dotted, labelled squares will be displayed in the Center for discussion • Carry out cutting, crushing, burning, adding water, etc. on different objects. • Learners describe changes to the object observed during the activity. • Changes will be grouped as "Chemical" or "Physical" • Each term is explained. • **Homework:** learners to read up and define colloid and plasma with local examples • **Audiovisual:** watch a You Tube animation on matter, atoms, molecules, compounds, elements and discuss their relationships to each other. • **Science Journal**: record information about colloid and plasma in the **L** portion of **KWL** chart	**(*Please pay attention to proprietary information)**	• Center activities • Paper-based activities.

SEMESTER TWO

GRADE 5
PERIOD: VI
TOPICS: WEATHER AND CLIMATE OF THE EARTH

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES/ ASSESSMENT
Learners will be able to connect their learning to solving global climate change problems.	Upon completion of this topic, learners should be able to: 1. Describe cause and effect relationships of humans on earth's climate 2. Describe origins of pollution and how pollution affect habitat, climate change and animals 3. Analyze relationship between carbon dioxide emissions, atmospheric carbon level and global temperatures 4. List possible causes and consequences of global warming	1. The difference between weather and climate 2. Causes of climate change 3. How life depends on climate 4. How life on earth is shaped by climate 5. Consequences of earth's changing climate 6. What responsible citizens can do to help reduce the effect of climate change	**Inclusive and differentiated Learning:** Individual seat works or work in mixed groups according to gender, abilities, learning styles, portfolios etc. • **Small groups (vocabulary game)**: place learners in mixed ability groups of four. Groups divide into pairs of guesser and the other give glue; one minute to give glue and guess the answer to lesson key words. • **Whole class**: read to class or watch video presentation/podcast: what causes climate change? Learners answer the questions: • What is climate? • What is climate change? • What is global warming? • What causes global warming? • What are the greenhouse gases? • What are somethings that produce carbon dioxide? • What problems does global warming cause?	Primary Text New elementary Science for Liberia Grade 5 pupil's Book (PEARSON 2014). Posters Thermometer Hygrometer Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	Research and problem solving skills: learners Can find information to make decision about solving problem on climate change. **Tools:** Quizzes Test Class and Homework Assignments Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

			• **Center:** watch videos on topics and complete downloaded worksheets • Discuss the question: What are can do to prevent global warming? • Correct and summarize answers and display in the center • **Home work**: Research from named internet sites on topic and record two **W** questions for each topic researched. • Begin a collection of local materials and items that can be used for making satellite model • **Individual work:** Individual research reports. • **Audiovisual**: Watch downloaded YouTube videos. • **Science journal**: Learners write answers to **Whole Class** questions • Record two **W** questions for each topic researched	**and others** **(*Please pay attention to proprietary information)**	

SEMESTER ONE

GRADE: 6
PERIOD: I
TOPIC: CLASSIFICATION OF PLANTS AND ANIMALS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIAL/RESOURCES	COMPETENCES/ ASSESSMENT
Learners will be able to state more than one level of classification of plants and animals	Upon completion of this topic, learners should be able to: 1. Classify plants according to specialized structures 2. Explain how over population affect the survival of plants 3. Name vertebrates and invertebrates groups 4. Identify plants adaptation for survival	1. Plants Adaptation - thorny, milky, juice, stinging, hairs, etc) 2. Plant population: - factors affecting plants population - how over population affects plants survival 3. Classification of Vertebrates and Invertebrates	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities: • **Small groups**: Presentation - divide learners into two mixed groups to present on factors that affect plant population and how over population affects plants survival • Concept map - assign learners into mixed groups to classify plants into their various groups and classify animals into the two groups. • **Whole class**: discussion - on characteristics of invertebrates and vertebrates with examples • **Center:** hands on activities - Preparation of specimens from any two kinds of vertebrates.	**Primary Text:** Darsaw Arthur, Fischer-Buder Karin New Elementary Science for Liberia Grade 6 pupil's Book (PEARSON 2014) Posters Secondary Textbooks Charts of Plants showing various parts of plants Chart of animals Slide Microscope Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com**	**Expected Competencies** • **Effective communication skills** • **Organizational skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms

			• **Home work:** Listing of conditions favorable for plants survival.	**www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 6
PERIOD: II
TOPICS: INTERDEPENDENCE IN THE ECOSYSTEM

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCY ASSESSMENT
Learners will be able to use familiar examples to illustrate their understanding of balance and interdependences within the ecosystem.	1. Describe the ecosystem 2. Identify at least one ecosystem in their environment 3. Explain the effect of overpopulation on the ecosystem 4. List plant and animal parasites 5. State preventive measures against HIV/AIDs 6. Discuss human reproduction	1. The Ecosystem 2. plants and animals life in selected ecosystem 3. Food chain 4. the environment as a habitat for animals 5. effects of exploration of resources in the environment 6. effects of destruction of habitat on animal environment 7. Animal parasites a) Protozoa, fungi, viruses and bacteria 8. Plant parasite a) Saprophytes	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities • **Small groups**: place learners into mixed groups to classify food chain. Ask learners to impact of destroying animal habitat. • **Whole class**: learners discuss the interdependence of animals and plants. • Field trip - visit a nearby stream or pond or an aquarium to discover the ecosystem • **Class discussion**: discussion on the nature of viruses • **Home work**: assign learners to record the effects of exploration of local resources on the environment, effects of destructing the habitat on animal environment or plants and animals parasites that cause diseases. • .**Individual work (key vocabulary)**	**Primary Text** Darsaw Arthur, Fischer-Buder Karin New Elementary Science for Liberia Grade 6 pupil's Book (PEARSON 2014) Posters -Secondary Textbooks Markers, etc.; megaphones leaflets, etc.: Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	**Expected Competencies** • **Effective communication skills** • **Organizational skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms

		b) Epiphytes c) Symbionts	• **Science journal**: Learners fill out the **KW** of the **KWL** chart.		• Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER ONE

GRADE: 6
PERIOD: III
TOPIC: THE LIBERIAN FOREST RESOURCES
PROTECTION OF THE ENVIRONMENT

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to analyze the national and global elements, needs, and consequences of nature conservation.	• State the types of the Liberian forest • State the importance of the Liberian forest • Discuss the activities of the Society for the Conservation of Nature • State meaning of global warming and its effects on Liberia b. • State local causes of water pollution	1. Forest resources of Liberia: a. Types b. Conservation (Society for the Conservation of Nature in Liberia – SCNL) 2. Global warming: a. Meaning b. Prevention 3. Environmental Pollution: a. Causes Prevention	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities • **Small groups**: place learners in mixed ability groups and assign tasks to work on water, air and land pollution. Make presentation of their work. • **Whole class**: discuss with the learners the importance of forest, activities of the Society for the Conservation of Nature. • Learners brainstorm on the term "global warming" • Project - Organize learners to carry out cleanup campaign in the school and create awareness on health and sanitation	**Primary Text** Darsaw Arthur Fischer-Buder Karin New Elementary Science for Liberia Grade 6 Pubil's Book (PEARSON 2014) Maps of forest cutlass, hoe, rake Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org**	• **Patriotism** • **Critical thinking** • **Effective communication skills** • **Organizational skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal

	• State causes of environmental pollution • Design a project to prevent land pollution in their community.		• **Center:** Debate - organize class debate on global warming, its impact and stating ways in which it can be prevented or reduced. Or "how global warming is affecting Liberia?" • **Demonstration**: demonstrate method of purifying water (making it safe and clean) • **Homework**: ask each learner to record the names of some animals in Liberia's forest. • Name some resources from the forest and stating their uses. • Listing ways in which soil or land and water pollution can be controlled in your community • **Individual work:** lesson key vocabulary) • **Audiovisual**: Watch downloaded YouTube video on pollution. • **Science journal**: Write your observation from the watched video.	**www.sciencefun.org**	• Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

SEMESTER TWO

GRADE: 6
PERIOD: IV
TOPIC: THE HUMAN BODY: HEALTH LESSONS

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS AND RESOURCES	COMPETENCES ASSESSMENT
Express what we feel about ourselves and that of others Appreciating our bodies and those of others Develop a sense of who one issexually (male or female) Understand facts about sexual orientation Explain risky behaviors that exposes an individual to STI/HIV Infection Identify ways of avoiding risky	Upon completing this unit, the learners should be able to: 1.Identify the organs of the male and female reproductive systems 2.Describe the structure & function of reproductive organs 3.Explain ways to prevent pregnancy 4.Outline risky behaviors that exposes an	1. The Reproductive System a. Organs of the male and female reproductive system b. Functions of the reproductive system 2. Male and Female Sexual Identity Knowing yourself Sex drive/desire Sexual orientation Heterosexual Homosexual Bisexual Discrimination HIV/AIDS and Risky behavior What are Risky behaviors ✓ Drinking liquor ✓ Smoking ✓ Taking in narcotic drugs	<u>Inclusive and Differentiated Learning:</u> Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities • Case study: Allow time for the learners to read case studies of two learners. One has decided to abstain but /he has sexual desires and is attracted a classmate. Another is willing to try sex because he/she feels the desire. • Ask learners to advise each of the learners on what to do. Let them know that sexual desire is natural. • Role play: invite volunteers to act out what the two learners in the case studies can do to make healthy choices. • Tell: Explain sexual orientations. Invite learners to role play teasing and bullying other	**Primary Text:** - Darsaw Arthur, Fischer-Buder Karin - New Elementary Science for Liberia Grade 6 Pubil's Book (PEARSON 2014) - Posters - - Markers - - Diagrams of male and female reproductive system Chart Projector Television Animation	**Expected Competencies** • **Effective communication skills** • **Digital Skills** • **Research & Problem solving skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle.

behaviors and situations Explain the stages of puberty in boys and girls Identify different treatment of girls and boys during puberty Understand different circumstances that lead to teenage sex/or abstinence Describe the structure & function of reproductive organs Explain facts about contraceptive in delaying pregnancy	individual to STI/HIV Infection State the impact of HIV/AIDS on the body defense system	✓ Being alone or in lonely places at night ✓ Unprotected sex ✓ Peer pressure ✓ How to avoid risky behavior/situation ✓ How to get out of risky situations **Puberty** ✓ Physical changes seen as a result of puberty ✓ Social changes as a result of puberty. ✓ Emotional changes a result of puberty. ✓ How puberty is experience differently and why? ✓ Why young people choose not to have sex	learners with a different sexual orientation. • Discussion: From the role play, discuss the need for respect and to fight against discrimination. • Home work: feedback from sexual orientation discussion with parents • Role play on an individual inability to make decision on avoiding risky behavior while under the influence of alcohol or drugs. • Brain storming on identifying risky behaviors common among adolescent. • Drawing competition on places and things that encourage risky behavior. • Letter writing: Invite learners to write a letter to another student in grade 4 about how to get out of risky situations. Invite volunteers to read their letters and use and use information to discuss their strategies.	Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. **http://www.sciencekids.co.nz/experiments** **http://www.kidzone.ws/science** **www.owlcation.com/stem** **https://www.sciencea-z.com** and others (*Please pay attention to proprietary information) **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

		✓ Why they choose to have sex ✓ Why they have sex even when they do not want to Male and Female reproduction, contraceptive and pregnancy ✓ physical changes ✓ menstrual cycle ✓ pregnancy ✓ contraceptives	• Questions and Answer: on • myths and facts about puberty in relation to body changes • puzzle on body changes (matching physical & social body changes that occur in boys and that of girls) • Small group discussion: peer group discussion on what causes stimulation (touching & hormones) • Drama: Showing difference in treatment between boys and girls at home. Discuss fair treatment, respect and equality • Small group discussion: three groups. Group 1- why teenagers choose not to have sex, group 2: why teenagers choose to have sex, group 3- why they have sex even when they do not want to. • Group presentation and discussion • Show and Tell: with the use of visual aids, ask learners to		

			identify and describe the function of male and female organs • Skit on the sexual and reproductive rights depicting ability to apply these rights to prevent pregnancy • Case study of individuals who used contraceptive and the benefits		

SEMESTER TWO

GRADE: 6
PERIOD: V
TOPIC: MACHINE AND WORK

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	COMPETENCES ASSESSMENT
Learners will be able to relate machine to the concept of work effectiveness	Upon completing this unit, the learners should be able to: 1. Identify simple machines in compound machines. 2. Solve work, time, and speed problems. 3. Describe one compound machine at work	1. Machine and work a. examples of simple machines b. simple problems on work, energy, time, and speed 2. Measuring Work (work, time, and speed.) 3. Some compound machines and their uses	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities • **Small groups**: place learners in mixed ability groups and assign tasks to draw and name some simple and compound machines. • **Whole class**: Class discussion - on how pulley as a simple machine makes work easier, definition of the six simple machines and giving examples of each and discuss work, time and speed.	**Primary Text** Darsaw Arthur, Fischer-Buder Karin New Elemetary Science for Liberia Grade 6 Pubil's Book (PEARSON 2014) Simple machines Computer/ DVD Player Phone Chart Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic. http://www.sciencekids.co.nz/experiments	**Expected Competencies** • **Effective communication** • **Analytical skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal • Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks

			• **Center:** Demonstration - on how simple machines such as lever and pulley work • **Home work**: Research from named internet sites on compound machines and organize for individual report. • **Individual work:** Learners solve example problems with work, force, and speed and allow learners to solve problems involving work, force, time and speed.	**http://www.kidzone.ws/science** **www.owlcation.com/stem** **https://www.sciencea-z.com** **www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Group and Individual oral reports. • Center activities. • Paper-based activities.

SEMESTER TWO

GRADE: 6
PERIOD: VI
TOPICS: ELEMENTS, COMPOUNDS AND MOLECULES
MATTER: ITS COMPOSITION AND STRUCTURE
SOUND AND ITS PROPERTIES

OUTCOMES	OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS/ REFERENCES	COMPETENCES/ ASSESSMENT
Learners will appreciate the role of technology particularly microscopy in understanding the concept of matter.	Upon completing this unit, the learners should be able to: 1. Discuss matter in relation to its structure and composition. 2. Distinguish metals from non-metals on the periodic table. 3. Differentiate between elements, compounds and mixtures. 4. Distinguish regular vibration from irregular vibrations. 5. Demonstrate how sound travels.	1. Matter and molecules - solution - preparation - separation 2. Element, Compound and Mixture 3. Energy and its forms 4. Matter and Energy Interconversion 5. Sound: - Transmission 6. Rocks and minerals	**Inclusive and Differentiated Learning:** Mixed groups or individuals according to abilities, gender, learning styles/disabilities, and age to be involved in the following activities. • **Small Groups (Vocabulary):** divide class into three groups. Each group copies squares and dots, from a template provided by teacher, for different states and movement of molecules in each of the three states of matter. • **Pairs:** Pairs of learners form a solution, mixture and tell how it can be separated	**Primary Text** Darsaw Arthur, Fischer-Buder Karin New elementary Science for Liberia Grade 6 pupil's Book (PEARSON 2014) Computer/DVD player Phone Chart Internet source: Internet sites: Facilitators are encouraged to utilize internet links to source additional materials and texts concerning individual topic.	**Expected Competencies** • **Analytical skills** • **Effective Communication skills** **Tools:** • Quizzes • Test • Class and Homework • Assignments • Science journal

	6. Explain the function of the human ear in relation to sound. 7. Explain how sound travels through matter. 8. Explain how matter can be made to produce energy		• **Whole Class:** brainstorm using **PPPB** (**P**ose, **P**ause, **P**robe, **and Bounce**). Questions: Is this matter? What is inside? - For each of several items shown to class. • Supply information: "All matter is made up of atoms; atoms are always moving" – add that no one can see atoms but we can illustrate how atoms behave in the three states of matter. • Class is divided into three equal groups to represent element, compound and mixture • Group leaders from Small Group work will come up in front of the class; another member of the group will stand behind the persons with the squares in appropriate representation with small raised posters with the words element, compound, mixture. • **Center:** the dotted, labelled squares will be displayed in the Center for discussion	**www.owlcation.com/stem** **www.dictionary.com** **www.khanacademy.com** **www.dison.com** **www.nature.com** **www.sporcle.com** **www.sciencekids.org** **www.sciencefun.org**	• Spelling and vocabulary test on lesson Key Terms • Contribution at Discussion Circle. • Group Activity tasks • Group and Individual oral reports. • Center activities • Paper-based activities.

			• Carry out cutting, crushing, burning, adding water, etc. on different objects. • Learners describe changes to the object observed during the activity. • Changes will be grouped as "Chemical" or "Physical" Each term is explained. • **Homework:** learners to read up and define homogeneous and heterogeneous solution • **Audiovisual:** use phone, computer or DVD player watch a You Tube animation on matter, atoms, molecules, compounds, elements and discuss their relationships to each other. • **Science Journal**: record information about colloid and plasma in the **L** portion of **KWL** chart		