GOVERNMENT OF SIERRA LEONE

Ministry of Basic and Senior Secondary Education

THE NEW BASIC EDUCATION CURRICULUM FOR SIERRA LEONE
(With Effect from October 2020)

ENVIRONMENTAL SCIENCE (CLASS 1 - JSS 3)

This subject curriculum is based on the *National Curriculum Framework and Guidelines for Basic Education*. It was prepared by national curriculum specialists, subject experts, and teachers; through a series of nationwide consultations and technical workshops in December 2015, as reviewed in 2020. It also takes account of an "accelerated learning curriculum" prepared for reopening of schools (2020-2021) after the shut-down due to Corona Virus (Covid-19).

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C O N T E N T

A MESSAGE TO ALL TEACHERS IMPLEMENTING THE NEW CURRICULUM

The new basic education curriculum for Sierra Leone comes at a challenging phase in the country's history. After the 11-year civil war and years of economic decline, the country was hit by the worst outbreak of the Ebola Virus Disease (EVD) that set back development. Later on, Sierra Leone experienced series of flooding and a mudslide that killed many people. The current outbreak of Corona Virus (Covid-19) has disrupted this year's economic development plan called year of delivery. These are all factors responsible for the set back in national development. However, as Sierra Leone is determined to minimize the spread of Covid-19, the Government is also poised for full economic recovery and a major push for national development. It is an exciting time for all teachers, school heads and other education professionals who want to see positive change in Sierra Leone. You are the professionals who have the challenging duty to shape the future for the next generation of young Sierra Leoneans. The future of our children and our nation is in your hands!

As part of the curriculum reform process the Ministry of Basic and Senior Secondary Education (MBSSE) has issued a key reference document to guide future strategies and activities. The ***National Curriculum Framework and Guidelines for Basic Education*** is the basis for designing each subject syllabus in the curriculum. Teachers are urged to obtain copies of this framework document from the Public Relations Officer at the MBSSE. It highlights key principles underlying the new curriculum and outlines strategies for the reform of basic education, as well as providing specific guidance on structure, pedagogy, prescribed subjects, time allocation, etc.

The main reform elements in the new curriculum include: a learner-centered approach; learner-friendly schools; equity and a chance for every child to learn; a focus on learning (not just teaching); support for professional development of teachers; a focus on making schools accountable to local communities (not just MBSSE); support for learning beyond memorizing cognitive content for examinations; a focus on empowering learners to make choices and thrive through the joys of learning; an approach that encourages local interpretation of the syllabus to achieve the prescribed learning outcomes through various methods and with a variety of resources.

There are also five key reform issues that have been made part of an advocacy and popularization campaign to win support from the public for this type of education reform. These reform issues, which hold great promise for peace building and development in Sierra Leone, are: **Assessment & Accountability; Equity & Inclusion; Partnerships; Quality & Integrity; and Social Cohesion & Peace Building**. To facilitate popular discussion around these topics MBSSE has issued Advocacy and Guidance Notes on each one, and these are being used to conduct radio discussions and other forms of popular engagement with the public. Teachers can obtain copies of these notes from the Public Relations Officer at the Ministry of Basic and Senior Secondary Education (MBSSE).

The new basic education curriculum has been structured in three broad stages, so the teaching syllabus for each subject area is designed for Stage 1 (Class 1- Class 3), Stage 2 (Class 4 – Class 6), and Stage 3 (Form 1 – Form 3). We hope this will help teachers to focus on links between different subjects in a particular stage. Teachers may then see more clearly how these subjects combine to help their pupils achieve the outcomes relating to that stage. This should help teachers move away from a "class-by-class" and "subject-by-subject" view of their job. Instead teachers will develop a stage-by-stage view of how children develop and learn across subjects. It also gives teachers a sense of what children need to achieve at each stage before moving to the next stage. We hope teachers also see the need to work together like a "Relay Team in Sports". Each teacher has an obligation to the teacher of the next class to prepare pupils well and make sure they are ready for that class. In turn the teacher of the next class has a duty to help learners make up for weak areas from their previous class, as well as to prepare them for progressing to yet another next class.

The three broad stages of basic education also helps teachers to understand that schools have three years in each stage to help learners achieve certain outcomes. So for children who do not learn well in Class 1, there is still a chance to help them catch up in Class 2 and Class 3, so that they can achieve the learning outcomes prescribed for the first stage (Class 1-3) of basic education. This means that instead of failing these children and asking them to repeat class 1 or class 2, they can be allowed proceed to the next class where they should be given help with areas in which they are weak.

However, at the end of each of the three stages there are national assessments which will determine if children are ready to proceed to the next stage. Based on their performance in these examinations, there are two options to consider. Children may be asked to repeat a class in order to retake the examination. Alternatively, they may be allowed to proceed, on condition that they are given remedial support in areas of weakness when they start the next stage. This applies to BECE and NPSE as well as national assessment on reading and mathematics (EGRA and EGMA) at the end of Class 3. Children who do not perform well in EGRA and EGMA may be asked to repeat Class 3 in order to retake these early grade assessments; or they may be allowed to proceed to stage 2 on condition that they are given remedial support in reading and mathematics during the first year of stage 2 (i.e. in Class 4).

Keeping these guidelines in mind the outline curriculum and teaching syllabus has been structured along the lines of four key elements that are important for quality in teaching and learning. These elements are outlined briefly below, and teachers are asked to note that they are inter-related. This has been taken into account by curriculum development practitioners in preparing the outline teaching syllabus to guide teachers on quality classroom practices that reflect the key elements as follows:

- **Learning Outcomes:** There are different levels of learning outcomes in the document and teachers should note the differences. There are: *General learning Outcomes*, which state what learners are expected to achieve in this subject at the end of each of the three stages; *Specific Learning Outcomes by Grade*, which state what learners are expected to achieve in this subject at the end of each Class/Form in the 9-year basic education cycle; and there are *Specific learning Outcomes by Topic*, which state what learners should achieve in this subject at the end of each of the suggested topics/themes/units (i.e. content) for each grade. Based on the resources at their disposal and the background of their pupils, teachers may adapt the suggested content to make the lesson more familiar to learners. Content selected in different parts of the country should enable learners to achieve the specified learning outcomes. **It is the learning outcomes that are important and content is just a way of achieving learning**.

- **Assessment Methods:** suggest various ways in which teachers can test to find out how far learners have been able to achieve the expected learning outcomes during, and at the end of, a period of teaching and learning. These assessment methods must match the learning outcomes as an appropriate way of testing for the required results. E.g. testing for ***recall*** of the memorized definition of a concept cannot tell us if a learner really ***understands*** or ***can make correct use of*** that concept.

- **Teaching Styles or Pedagogy:** suggest how teachers can go about teaching and organizing learning such that the learners have a good chance of achieving the expected learning outcomes during, and at the end of, a period of teaching and learning. The teaching style used must be closely linked to the learning outcome and assessment method.

✧ **Learning & Teaching Resources:** which suggest a wide variety of learning materials and teaching aids that can be used to help teachers do their job and to help learners achieve the expected learning outcomes.

In addition to the outline teaching syllabus for each of the three broad stages of basic education, an implementation guideline chart is provided for teachers to use in planning how to pace learning for each term of the school year.

ENVIRONMENTAL SCIENCE
OUTLINE TEACHING SYLLABUS FOR THE FIRST STAGE OF BASIC EDUCATION (CLASS 1)

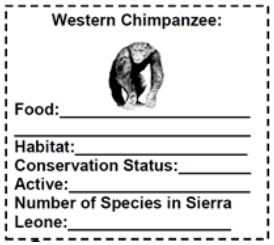
Suggested Topics/Themes /Units	Specific Learning Outcomes	Recommended Teaching Styles or Pedagogical Approaches	Assessment Methods	Suggested Learning and Teaching Resources (Core/supplementary)
THEME 1: THE CHILD AND HIS OR HER HOME ENVIRONMENT **UNIT 1: Living and Non – living Things**	After completing this unit, pupils should be able to: • Identify and describe self as part of the family. • Identify and self as part of the community. • Name some living and non – living things in their environment. • Group materials into living and non-living things in their environment. • Differentiate between things that are living and things that are not living in their environment. • Classify living things as plants and animals in their environment • Draw some living and non – living things in the child's environment • Draw Sierra Leone's National Animal - the Chimpanzee • Design a poster, letting Sierra Leoneans know that the chimpanzee is the national	a) Introduce the lesson by displaying pictures of some living and non – living things and asking questions about who the child is in the family. b) Allow pupils to observe some living and non – living things in their environment. c) Let pupils identify and name some living and non living things in their environment. d) Inform pupils that in 2019, followed by lobbying by Tacugama Chimpanzee Sanctuary, the Government of Sierra Leone declared the chimpanzee as the country's national animal and new face of tourism. e) Teacher helps pupils demonstrate skills involved in classifying living and non – living things. f) Observe pupils display skills in	a) Observation of pupils' responses on some living and non-living things in their environment. b) Oral presentations about some living and non-living things in their environment. c) Small group discussions on grouping materials into living and non-living things and their differences in their environment. d) Observation of pupils' drawings of some living and non – living things in the environment. Give project to pupils to draw other examples of	a) Textbook b) Pictures and charts of some living and non – living things in their environment c) Vanguards d) Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Trips to Tacugama to allow pupils to see Sierra Leone's national animal and its natural habitat

	animal. • Gain awareness of living and non- living things in their environment.	drawings of some living and non – living things in their environment.	living and non – living things in their environment	
Unit 2: Our Environment	After completing this unit, pupils should be able to: • Explain the term environment. • Explain the term conservation (Answer: Conservation is protecting and preserving the natural environment for future use. Sustainable forest use is a forest management practice to ensure that the resources from a forest are not more than the forest is capable of producing without destroying the forest. If people continue to cut down trees and clear forests faster than the trees are able to grow, eventually the forest will be entirely gone). • Give examples of some plants and animals in their environment. • Give examples of why do animals need trees (Answer: Animals get food from the fruit, seeds, and even the bark of certain trees. Trees and shrubs provide home for animals and a place where they can find shelter and hide from predators). All animals, including human beings rely on local trees and shrubs for many natural resources. Also, we need trees to breathe, because they make oxygen. • Discuss the uses of plants and animals in their environment. • State reasons why people rely on trees and shrubs (Answers: food, medicine, oxygen, windbreaks, and natural fences). • State a reason why natural resources may be lost completely if not used wisely. (Answer: As the human population continues to increase, demands on trees and shrubs also increase. If humans are harvesting trees faster than they are growing, then we will eventually run out.) • Provide examples of how people are not managing trees and shrubs wisely. (Answer: cutting down of trees and clearing of shrubs without replanting, deforestation and bush-burning) • State some products obtained from plants and animals in their environment. • Describe how we should treat our national animal (Answer: We should respect it and protect it! We should be proud of them, as they are part of Sierra Leone's heritage. Join Tacugama's efforts and help	a) Introduce the lesson by displaying charts and pictures about some plants and animals in their environment. b) Allow pupils to brainstorm and then explain the term environment. c)Let pupils give examples of some plants and animals in their environment. d) Pupils discuss the uses of plants and animals in their environment. e) Let pupils state products from plants and animals in their environment.	a) Observation of pupils' responses about some plants and animals in their environment. b) Oral presentations about some plants and animals in their environment. c) Group discussions on some plants and animals in their environment. d) State some products obtained from plants and animals in your environment. e) Give project to pupils to draw two plants and two animals in their environment f) Outdoor Activity - Search for products made from trees or shrubs. Share your findings, and the forest products you use at home.	a) Textbook b) Pictures and charts of some plants and animals in their environment c) Vanguards d) Markers e) crayons f) Erasers g) Pencils h) Sharpener i) Trips to Tacugama to allow pupils to see Sierra Leone's national animal and its natural habitat

	save our National Animal).			
THEME 2: Movement and Physical Development	After completing this theme, pupils should be able to: • Identify and categorize the different parts of the human body. • State the functions of the different parts of the human body. Predict what happens when one losses a part of his/her body	a) Introduce the lesson through games, songs, models and dolls about the parts of the human body. b) Do a miming and tell the parts of the human body involved in the activity. c) Pupils draw and match the human body parts to their functions. Pupils discuss the effects of losing part of the human body.	a) Observations of pupils' responses about parts of the body and their functions. b) Oral presentations about the functions of the different parts of the human body. c) Observe pupils' drawings. Pupils explaining the effect of one losing a body part.	a) Textbook b) Pictures and charts of parts of the human body c) Vanguards d) Markers e) Crayons f) Erasers g) Pencils
THEME 3: Nutrition and Health	After completing this theme, pupils should be able to: • Identify and describe local foods in their environment. • Classify foods according to how the human body uses them. • Give examples of different classes of foods. • State the reason why we need food. • Explain their choice in food that they eat. • Name examples of foods that are grown in their community.	a) Introduce the lesson by Show pictures or charts of different classes of food to arouse their interest (e.g. energy given food, body building food and protective food). b) Allow pupils to identify local foods in their environment. c) Let pupils name the types of food they eat at home. d) Let pupils explain why they choose to eat particular types of food. Allow pupils to name examples of foods grown in their community.	a) Observation of pupils' responses about types of food. b) Oral presentations about examples of different classes of foods. c) List different classes of food. d) Discussion in small groups on why they like or do not like some food items and their choice of food they eat. e) Name examples of foods that are grown in their community.	a) Text book b) Charts and pictures of local foods in their environment c) Vanguards d) Markers e) Crayons f) Erasers g) Pencils h) Sharpener
THEME 4: Physical Health	After completing this theme, pupils should be able to: • State ways of keeping themselves healthy. • Demonstrate ways of keeping themselves healthy. • State places where they go to when they are sick. • Name people that help them when they are sick. • Discuss why it is necessary to be healthy.	a) Introduce the lesson by showing pictures of people who appears sick and others who appears strong and well. b) Let pupils discuss differences between the appearances. c) Let pupils list ways of keeping healthy d) Let pupils dramatize ways of keeping healthy. Let pupils give examples of people that work at health centers.	a) Observation of pupils' responses about keeping healthy. b) Oral presentations about keeping healthy. c) Identify sick person and a healthy person/ d) List people that work at health facilities and what they do. Give homework to pupils about how to live as a	a) Textbook b) Pictures and charts of ways of keeping healthy c) Vanguards d) Markers e) Crayons f) Erasers g) Pencils Sharpener

			healthy family.	
Theme 5: Places where people and animals live	After completing this theme, pupils should be able to: a) Briefly explain the term habitat. b) State places where people and animals live. c) Give examples of animals that live with people. d) Suggest reasons why we need to live with some animals. e) Draw animals that live with people at home f) State reasons threatening Sierra Leone's National Animal – the Chimpanzee (Answers: a) deforestation to increase agricultural land b) killed by humans for Bushmeat d) captured from the forest to be sold as pets e) killed due to crop raiding and ensuing danger	a) Introduce the lesson by displaying charts and ask pupils questions about where people and animals live in the environment. b)Let pupils discuss in small groups where people and animals live. c)Pupils explain why they need to live with some animals. Inform pupils Animals are able to survive in certain habitats but not others because they have different features that are perfect for a specific environment. We call these special features that help living things to survive adaptations.	a) Observation of pupils'' responses about places where people and animals live. b) Oral presentations about the definition of a habitat. c) List some examples of animals that live with people. d) Group discussions on why we need to live with some animals Observation of pupils' drawings of some animals that live with people.	a) Textbook b) Charts and pictures of places where people and animals live c) Vanguards d) Markers e) Crayons f) Erasers g) Pencils Sharpener

OUTLINE TEACHING SYLLABUS FOR THE FIRST STAGE OF BASIC EDUCATION (CLASS 2)

Suggested Topics/Themes/Units	**Specific Learning Outcomes**	**Recommended Teaching Styles or Pedagogical Approaches**	**Assessment Methods**	**Suggested Learning and Teaching Resources (Core/supplementary)**
THEME 1: THE CHILD AND HIS OR HER HOME ENVIRONMENT **UNIT 1: Characteristics of Living Organisms in the Environment**	After completing this unit, pupils should be able to: • Identify some plants and animals in the environment. • Fill in the blanks to learn about the western chimpanzee – the only ape in Sierra Leone and the country's national animal.  ***Answers:***	a) Introduce the lesson by displaying charts and pictures of some living and non – living things in the environment. b) Let pupils identify some living and non – living things in their environment. c) Pupils state and describe some characteristics of plants in their environment. d)Pupils state and describe some characteristics of animals in their environment. e) Let pupils state some uses of plants	a) Observation of pupils' responses about characteristics of living and non – living things in their environment. b) Oral presentations about the characteristics of living and non – living things in their environment. c)Group discussions on some characteristics of plants and animals.	a) Textbook b) Pictures and charts of characteristics of some living organisms in their environment. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i)Shoe j) Bag k) Cup l)Pot m)Chalk

	Food: Fruits, leaves, small animals Habitat: Forest Conservation Status: Critically Endangered Active: in the day Number of Species in Sierra Leone: 1 • State some characteristics of plants: size (tall, short, small, big); colour of leaves (green, brown, yellow, mixed colour). • Describe some characteristics of plants: size (tall, short, small, big); colour of leaves (green, brown, yellow, mixed colour). • Describe some characteristics of animals: size (small, big); colour of animals; movement (walking, flying, crawling, swimming, jumping). • Describe the characteristics of Sierra Leone's National Animal – the chimpanzee. (Answers: They have: black hair, white whiskers on their chin, longer arms than legs which is why they walk on the soles of their feet and knuckles of their hands and opposable thumbs and opposable big toes which allow them to grip things with their feet. • State some uses of plants (fence, food, decoration, medicine). • Mention some uses of animals (food, transportation, pet, farming activities) in their environment. • State if is it a crime to kill a chimpanzee (Sierra Leone's National Animal), or to keep one at your house. (Answer: Yes, chimpanzees are wild animals that cannot be killed or trained like a dog or cat. As they get older, they become very strong, and can be dangerous and destructive if kept as a pet. Chimpanzees are apes	(fence, food, decoration, medicine). f) Let pupils mention some uses of animals (food, transportation, pet, farming activities) in their environment. g) Guide pupils to draw or model some plants and animals in the environment. h) Let pupils state some uses of non – living things (shoe, pencil, bag, cup, pot, chalk, stone, etc.)	d) State some uses of plants in your environment. e) List some uses of animals in your environment. f) Observation of pupils' drawings of some plants and animals in their environment. g) ask pupils to state some uses of non – living things in your environment.	n)Stone o) Trips to Tacugama to allow pupils to see Sierra Leone's national animal and its natural habitat

	just like us, so we can carry similar diseases. They can become very sick from our colds or coughs, and humans can get disease from Chimpanzees. Chimpanzees belong in the wild, and since there are very few left, it is very important to leave them there). • Draw or model some plants and animals in the environment. • State some uses of non – living things (shoe, pencil, bag, cup, pot, chalk, stone, etc.)			
Unit 2: Changes in the Physical Environment	After completing this unit, pupils should be able to: • State some things in their environment. • Describe their physical environment. • Explain changes in their physical environment. • Discuss reasons for changes in their physical environment. • Suggest ways of preventing or controlling changes in their physical environment. • Suggest ways of conserving wildlife and your communities (Answer: Answer: Education! We can tell our family and friends about why we should protect the environment and wildlife. We can also help protect Sierra Leone's national animal and their natural habitat. If we protect the chimps natural habitat – the forest we are also protecting our environment. To learn more about Sierra Leone's National Animal, conservation, environmental protection and the consequences of climate change - you can visit the Tacugama Chimpanzee Sanctuary).	a) Introduce the lesson by displaying charts about changes in our physical environment. b) Let pupils state some things in their environment. c) Pupils describe their physical environment. e)Let pupils discuss reasons for changes in their physical environment. e) Let pupils suggest ways of preventing or controlling changes in their physical environment f) Inform pupils about Tacugama Chimpanzee Sanctuary's role in conservation ("About Tacugama Chimpanzee Sanctuary: Tacugama was founded in 1995 by Bala Amarasekaran together with the Government of Sierra Leone (GoSL), which allotted 40 hectares of land to be used inside the area which is now the Western Area Peninsula National Park. As of January 2021, the sanctuary cares for 99 chimpanzees and, unfortunately, each year more orphan chimpanzees continue to arrive at Tacugama. Tacugama perseveres to rescue and care for chimpanzees that have been orphaned due to the illegal bush-meat	a) Observation of pupils' responses about changes in our physical environment. b) Oral presentations about the changes in our physical environment. c)Group discussions on reasons for changes in our physical environment. d) Group discussions on ways of preventing or controlling changes in their environment.	a) Textbook b) Pictures and charts of changes in their physical environment c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Sealtape

		and pet trade or other human-wildlife conflict. Tacugama also proactively protects the 5,500 chimpanzees living in the wild across Sierra Leone and their natural habitat.) g) Let the pupils talk about Tacugama Chimpanzee Sanctuary's Founder - Mr Bala, who is an inspiration to conservation in Sierra Leone (Talking Points: Mr Bala founded Tacugama Chimpanzee Sanctuary in 1995 and has worked tirelessly in conservation for over 25 years. Bala's vision has evolved into a movement that, today, engages youth and citizens across the country to take care of their environment and wildlife. h) Inform pupils to contact the Tacugama Chimpanzee Sanctuary if they know someone keeping a chimpanzee as a pet.		
THEME 2: Movement and Physical Development (Personal Hygiene)	After completing this theme, pupils should be able to: • Explain briefly what is meant by the term personal hygiene. • State the parts of the body that are to be cleaned, include discussion of genital l hygiene • Explain the need for hand washing. • Demonstrate the proper way to wash the hands. • Explain the need for cleaning the teeth. • Demonstrate the proper way to clean the teeth. • Explain the need for bathing. • Demonstrate the proper way of bathing the body. • Explain the need for keeping the finger nails short and clean. • Demonstrate the proper way to keep	a) Introduce the lesson by displaying charts about personal hygiene. Invite health personnel to give talk on the topic. b) Let pupils briefly explain what is meant by the term personal hygiene. c) Pupils state the parts of the body that are to be cleaned. d)Let pupils explain the need for hand washing. e) Let pupils demonstrate the proper way to wash the hands. f) Let pupils explain the need for cleaning the teeth. g) Let pupils demonstrate the proper way to clean the teeth. h) Allow pupils to explain the need for bathing. i) Pupils demonstrate the proper way of bathing the body. j) Allow pupils explain the need for	a) Observation of pupils' responses about personal hygiene. b) Oral presentations about personal hygiene. c)Group discussions on parts of the body and things to be properly cleaned: hands, teeth, bathing of the body, finger nails, hair, clothes and under wears. d) Observation of demonstrations of parts of the body and things to be properly cleaned: hands, teeth, bathing of the body, finger nails, hair, clothes and under wears. E)Demonstrate effective washing of hands and face	a) Textbook b) Pictures and charts of personal hygiene: parts of the body to be cleaned. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Soap j) Water k) Bowl or bucket l) Tooth brush m) Tooth paste n) Nail cutter o) Comb p) Health Personnel

	the finger nails short and clean. • Explain the need for taking good care of the hair. • Demonstrate the proper ways of taking good care of the hair. • Explain the need for washing clothes and under wears.	keeping the finger nails short and clean. k) Let pupils demonstrate the proper way to keep the finger nails short and clean. l) Let pupils explain the need for taking good care of the hair. m) Let pupils demonstrate the proper ways of taking good care of the hair. n) Pupils explain the need for washing clothes and under wears.		
THEME 3: Nutrition and Health	After completing this theme, pupils should be able to: • Identify some raw food materials that are grown in their neighbourhood. • Name some raw food materials that are grown in their neighbourhood. • State reasons for producing these raw food materials. • Draw some raw food materials grown in their neighbourhood.	a) Introduce the lesson by displaying charts about some raw food materials that are grown in their neighbourhood. b) Let pupils Identify some raw food materials that are grown in their neighbourhood. c) Pupils name some raw food materials that are grown in their neighbourhood. d)Let pupils discuss reasons for producing these raw food materials. e) Guide pupils to draw some raw food materials grown in their neighbourhood.	a) Observation of pupils' responses about some raw food materials that are grown in their neighbourhood. b) Oral presentations about some raw food materials that are grown in their neighbourhood. c)Group discussions on reasons for producing these raw food materials. d) Observation of pupils drawings of some raw food materials grown in their neighbourhood.	a) Textbook b) Pictures and charts of some raw food materials in their neighbourhood c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener
THEME 4: Community health	After completing this theme, pupils should be able to: • Identify some materials used to keep their compounds clean. • Name some materials used to keep their compounds clean. • Explain the need to keep their compounds clean. • Explain what happens when we live in dirty communities. • Demonstrate ways of keeping their compounds clean (sweeping, hovering, mopping up, cleaning gutters and around the house, etc.). • Mention some diseases associated with unclean toilet facilities. • Suggest other ways of maintaining	a) Introduce the lesson by displaying charts about some materials used to keep their compounds clean. Invite a sanitary officer to give talk on the topic. b) Let pupils Identify some materials used to keep their compounds clean c) Pupils name some materials used to keep their compounds clean (sweeping, hovering, mopping up, cleaning gutters and around the house, etc.). d)Let pupils mention some diseases associated with unclean toilet facilities. e) Let pupils suggest other ways of maintaining good health.	a) Observation of pupils' responses about some materials used to keep their compounds clean. b) Oral presentations some materials used to keep their compounds clean. c)Group discussions on reasons for keeping their compounds clean. d) Observation of pupils' demonstrations of keeping their compounds clean. e) Group discussions on suggestions of other ways of	a) Textbook b) Pictures and charts of some materials used to clean their compounds. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Sanitary Officer

	good health.		maintaining good health.	
THEME 5: The Earth, Sea, Land, Stars and Moon.	After completing this theme, pupils should be able to: • Identify the earth, sea, land, stars and moon in the charts. • Name the earth, sea, land, stars and moon seen in the charts. • State that the land, sea and earth occupies space in the universe. • Recognise that the earth (land) is surrounded by water (rivers, seas, lakes and oceans). • State that the earth is round like a football. • Demonstrate that the sun does not move but the earth turns round it.	a) Introduce the lesson by displaying charts about the earth, sea, land, stars and moon b) Let pupils Identify the earth, sea, land, stars and moon. c) Pupils name the earth, sea, land, stars and moon. d)Let pupils state the land, sea and earth occupies space in the universe. e) Let pupils recognise that the earth (land) is surrounded by water (rivers, seas, lakes and oceans). f) Pupils state that the earth is round like a football. g) Let pupils demonstrate that the sun does not move but the earth turns round it.	a) Observation of pupils' responses about the earth, sea, land, stars and moon. b) Oral presentations about the earth, sea, land, stars and moon. c) Briefly explain what surrounds the earth. d) Small group discussions on the earth, sea, land, stars and the moon. e) Observation of pupils' demonstrations that the sun does not move but the earth turns round it.	a) Textbook b) Pictures and charts of the earth, sea, land, stars and the moon. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Globe j) Football

Theme: **The Human Body & Development** **Unit 2:** **Bodies: similarities and differences**	Identify similarities and differences between bodies (including male and female) Describe the physical appearance of different bodies Appreciate differences between bodies and recognize that all people are unique and have the right to be treated with respect List ways making fun of people is harmful Demonstrate ways of respecting one's own and other people's bodies including showing tolerance and understanding of people with different bodies Recognize that humans (like other	All bodies are made from the same 'raw material' All bodies are therefore similar but also different in appearance Explain there are rules for talking about body parts depending upon the context. It is important to know the acceptable terms While they share features in common, all bodies are unique. Some are more noticeably different than others. Physical difference should not be a value judgment of a person's worth	Observation of learners describing similarities and differences between images of a variety of bodies If possible, invite people with a variety of disabilities to come and speak about their experiences. Alternatively invite someone who works with children with disabilities to come and address the class. (	Illustrations depicting a wide variety of male and female bodies including some disabilities Invite people with disabilities or organisations representing people with disabilities to speak to the class Have students identify the questions they would like to ask. They can also agree who will welcome the visitor on behalf of the class and thank them at the end. It would also be good to write to the visitor to thank them for their support. Or look for stories by

	mammals) enjoy physical closeness and touching Describe ways that chimpanzees are like humans? (Answer: Chimpanzees are one of the only animals besides humans to use tools. They use stones to crack nuts, and sticks to fish termites out of termite mounds. They also use sticks to harvest honey from bee hives. Chimpanzees and humans are more alike than different, sharing 98.6% of our DNA. Chimpanzees can be afflicted with diseases that affect humans. Like us, they also have a sense of humor and can feel a wide of range emotions. Chimpanzees have feet like hands because they help them to climb in trees and use tools. Humans walk standing up, so our feet are adapted to make this easier. This is why we have shorter toes).			people with disabilities and use these as case studies for discussion Trips to Tacugama to allow pupils to see Sierra Leone's national animal and its natural habitat

ENVIRONMENTAL SCIENCE
OUTLINE TEACHING SYLLABUS FOR THE FIRST STAGE OF BASIC EDUCATION (CLASS 3)

Suggested Topics/Themes/Units	Specific Learning Outcomes	Recommended Teaching Styles or Pedagogical Approaches	Assessment Methods	Suggested Learning and Teaching Resources (Core/supplementary)
THEME 1: THE CHILD AND HIS OR HER HOME ENVIRONMENT **UNIT 1: Plants**	After completing this unit, pupils should be able to: • Identify some plants found around their environment. • Name some plants found around their environment. • Briefly explain what is meant by the term flowering plant. • State the main parts of a flowering plant. • Describe the main parts of a flowering plant. • Draw some plants found around their environment. • Draw a flowering plant found around their homes or environment. • Describe various kinds of plants in their environment. • Name where some plants live. • Mention ways by which plants make their babies (young ones). • Demonstrate ways by which baby plants (young) are produced from seeds. • Discuss the uses of some plants. • State what each part of a plant does.	a) Introduce the lesson by displaying charts or pictures of some plants around their environment. b) Let pupils Identify some plants around their environment. c) Pupils name some plants around their environment. d) Let pupils briefly explain what is meant by the term flowering plant. e) Let pupils state the main parts of a flowering plant f) Let pupils describe the main parts of a flowering plant. g) Guide pupils to draw some plants found around their environment. h) Allow pupils to draw a flowering plant found around their homes or environment. i) Let pupils describe various kinds of plants in their environment. j) Pupils name where some plants live. k) Let pupils mention ways by which plants make their babies (young ones). l) Let pupils demonstrate ways by which baby plants (young) are produced from seeds. m) Allow pupils to discuss the uses of some plants. n) Let pupils state what each part of a plant does.	a) Observation of pupils' responses about some plants in their environment. b) Oral presentations about some plants in their environment. c)Group discussions on the meaning of a flowering plant, the main parts of a flowering plant. d) Observation of pupils' drawings of some plants a named flowering plant in their environment. e) Group discussions on the various kinds of plants in their environment, uses of some plants and what each part of a plant does. f) Observation of pupils' demonstrations of ways by which baby plants (young) are produced from seeds.	a) Textbook b) Pictures and charts of some plants in their environment c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener
Unit 2: Animals	After completing this unit, pupils should be able to:	a) Introduce the lesson by displaying charts or pictures of some animals	a) Observation of pupils' responses	a) Textbook

	• Identify some animals found around their homes or environment. • Tacugama Chimpanzee Sanctuary discovered that the Loma Mountains National Park in Sierra Leone has the highest concentration of chimpanzees anywhere in West and Central Africa - a population of approximately 1,300 chimpanzees. What other animals are found in Loma Mountains National Park? (Answer: forest elephants, golden cats, bay duikers, black duikers, bongos, forest buffalos, leopards, red colobus monkeys, black and white colobus monkeys, and sooty mangabees). • Name some animals found around their homes or environment. • State examples of animals that can move. • Name places where some animals live. • Group animals into birds, fish, insects, reptiles and mammals. • Distinguish among animals in terms of their movement. • Group animals into how they reproduce their young ones. • Draw some animals around their home or environment. • Draw Sierra Leone's National Animal, the chimpanzee, and other animals in their natural habitat. • Explain how we use animals. • Discuss the use of each part of the body of an animal.	around their environment. b) Let pupils Identify some animals around their environment. c) Pupils name some animals around their environment. d) Let pupils briefly explain how animals move. e) Let pupils state some places where animals live. f) Let pupils group animals into birds, fish, insects, reptiles and mammals. g) Allow pupils to distinguish among animals in terms of their movement. h) Allow pupils to group animals into how they reproduce their young ones. i) Let pupils draw some animals around their home or environment. j) Let pupils explain how we use animals. k) Let pupils describe what all living things can do.	about some animals in their environment. b) Oral presentations about some animals in their environment. c) Group discussions on the classification of animals into birds, fish, insects, reptiles and mammals and how they reproduce their young ones. d) Classify the following animals into birds, insects, fish, reptiles and mammals: pigeon, tilapia, snake, rat, grasshopper, housefly, fowl, sheep, goat, cow. e) Observation of pupils' drawings of some animals around their homes or environment. e) Group discussions on how we use animals, the use of each part of the body of an animal and what all living things do.	b) Pictures and charts of some animals in their environment c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Trips to Tacugama to allow pupils to see Sierra Leone's national animal and its natural habitat

	• Describe what all living things can do.			
Unit 3: Some Materials in the Environment	After completing this unit, pupils should be able to: • Identify some materials in the environment. • Classify some materials in the environment into solids, liquids and gases. • Describe the properties of solids, liquids and gases. • State the differences among solids, liquids and gases. • Demonstrate simple activities on solids, liquids and gases. • Classify things in the environment on the basis of shape, size and colour.	a) Introduce the lesson by displaying charts or pictures and some materials in the environment. b) Let pupils identify some materials in their environment. c) Pupils classify some materials in the environment into solids, liquids and gases d)Let pupils describe the properties of solids, liquids and gases. e) Let pupils state the differences among solids, liquids and gases. f) Let pupils Demonstrate simple activities on solids, liquids and gases. g) Allow pupils to Classify things in the environment on the basis of shape, size and colour.	a) Observation of pupils' responses about some materials in their environment. b) Oral presentations about some materials in their environment. c) Group discussions on classification of some materials in the environment into solids, liquids and gases and their properties. d) Group discussions on differences among solids, liquids and classification of things in their environment on the basis of shape, size and colour. e) Observation of pupils demonstration of simple activities on solids, liquids and gases.	Textbook Pictures and charts of some materials in the environment. Vanguards, Markers Crayons, Erasers Pencils, Sharpener Water, Boiled water Beans, Jars of pots, Flour, Stone, Stick, Ice Omole, Palm oil Kerosene, Smoke Nut oil, Palm Kernel, Sass man, Liquid Milk, Balloon, Steam, Book, Air, Sand, Starch, Garri powder, Vaseline, Containers, inner tube, Ball, Cork, Wire, Pen, Iron spoon, Sugar, Salt, Sand, Hammer, Nail
Unit 4: Floating and Sinking Objects	After completing this unit, pupils should be able to: • Identify some materials in the environment that can sink or float in water. • Give examples of materials in their environment that can sink and those that can float in water. • Explain why some materials can sink while others can float in water. • Demonstrate simple activity on materials that can sink and those that can float in water. • Perform an activity on the effect of water on materials.	a) Introduce the lesson by displaying charts or pictures and some materials in the environment. b) Let pupils identify some materials in their environment that can sink or float in water. c) Pupils give examples of materials in their environment that can sink and those that can float in water. d) Let pupils discuss why some materials can sink while others can float in water. e) Let pupils demonstrate simple activity on materials that can sink and those that can float. f) Let pupils perform an activity on the effect of water on materials.	a) Observation of pupils' responses about some materials in their environment that can sink and those that can float in water. b) Oral presentations about some materials in their environment that can sink and those that can float in water. c) Group discussions on why some materials can sink while others can float in water. d) Observation of pupils' demonstrations of simple activities on materials that can sink and those that can float in water and effect of water on materials.	Textbook Pictures and charts of some floating and sinking objects in their environment Vanguards Markers Crayons Erasers Pencils Sharpener Water Stone Bowl or container Nails Dry leaves, paper, Keys, Nail cutter Dry stick

				Coins Pen cover, Beads Plastic bottle
Unit 5: Sound	After completing this unit, pupils should be able to: • Identify some materials in the environment. • Give examples of materials in their environment that can produce sound. • Briefly explain the term sound. • State the types of sound. • Explain how sound is transferred. • Demonstrate simple activities on making and listening to sound.	a) Introduce the lesson by displaying charts or pictures about some materials in the environment that produce sound. b) Let pupils identify some materials in their environment that can produce sound. c) Pupils give examples of materials in their environment that can produce sound. d) Let pupils brainstorm and briefly explain the term sound. e) Allow pupils to state the types of sound. f) Let pupils discuss how sound is produced. g) Let pupils demonstrate simple activities on making and listening to sound.	a) Observation of pupils' responses about some materials in their environment that can produce sound. b) Oral presentations about some materials in their environment that can produce sound. c) Group discussions on how sound is transferred. d) State the types of sound. e) Observation of pupils' demonstrations of simple activities on making and listening to sound.	Textbook Pictures and charts of some materials that produce sound Vanguards Markers Crayons Erasers Pencils Sharpener Flute Drum Metal Bell Guitar Empty tins Thread Seigureh Batta
Unit 6: The Air Around Us- Air Pressure	After completing this unit, pupils should be able to: • Explain the term air or atmospheric pressure. • Discuss how air pressure affects us. • Differentiate between high and low air pressure. • Discuss how air pressure is created. • Demonstrate the presence of air. • Mention some uses of air.	a) Introduce the lesson by displaying charts or pictures about air pressure. b) Let pupils brainstorm and explain the term atmospheric or air pressure. c) Let pupils discuss how air pressure affects us. d) Let pupils differentiate between high and low air pressure. e) Let pupils discuss how air pressure is created. f) Let pupils demonstrate the presence of air. g) Pupils state some uses of air.	a) Observation of pupils' responses about air or atmospheric pressure. b) Oral presentations about air or atmospheric pressure. c) Group discussions on how air pressure affects us and the differences between high and low air pressure. d) Group discussions on how air pressure is created. e) Observation of demonstration of the presence of air. f) State some uses of air.	Textbook Pictures and charts about air pressure Vanguards Markers Crayon Erasers Pencils Sharpener
THEME 2: Movement and Physical Development **Unit 1: Good Health Practices**	After completing this unit, pupils should be able to: • Explain the term good health. • Discuss ways of maintaining good health.	a) Introduce the lesson by displaying charts or pictures about good health practices. Invite a health worker to talk on the topic. b) Let pupils brainstorm and explain the term good health.	a) Observation of pupils' responses about good health practices. b) Oral presentations about good health practices. c) Group discussions on the meaning of good health, ways of	Textbook Pictures and charts of good health practices Vanguards Markers Crayon

	• Describe ways of protecting us from germs. • Explain ways of keeping food clean. • Discuss ways of storing and preserving food.	c) Let pupils discuss ways of maintaining good health. d) Let pupils describe ways of protecting us from germs. e) Allow pupils to explain ways of keeping food clean. f) Let pupils discuss ways of storing and preserving food.	maintaining good health and ways of protecting us from germs. d) Group discussions on ways of keeping food clean and ways of storing and preserving food.	Erasers Pencils Sharpener Health worker
Unit 2: Environmental Sanitation	After completing this unit, pupils should be able to: • Explain what is meant by the term environmental sanitation. • Discuss the need for keeping the compound clean. • Demonstrate ways of keeping the compound clean. • State the benefits of living in a clean environment (Answer: A clean environment helps to minimize sickness and disease among animals, including human beings living in an area). • Mention diseases or infections associated with unclean toilet facilities.	a) Introduce the lesson by displaying charts or pictures about environmental sanitation. Invite a health worker to talk on the topic. b) Let pupils brainstorm and explain the meaning of the term environmental sanitation. c) Let pupils discuss the need for keeping the compound clean. d) Let pupils demonstrate ways of keeping the compound clean. e) Allow pupils to mention diseases or infections associated with unclean toilet facilities. f) Let pupils write down ways of keeping our communities clean. Answers: a) Do not defecate in the open. Dispose of all human wastes in a latrine or toilet. b) Dispose of food and other wastes at least 10 meters away from households so that flies cannot easily carry disease-causing germs from the waste to our food. c) Make compost pits.	a) Observation of pupils' responses about environmental sanitation. b) Oral presentations about environmental sanitation. c) Group discussions on the need for keeping the compound clean. d) Observation of pupils' demonstrations on ways of keeping the compound clean. e) State some diseases or infections associated with unclean toilet facilities.	Textbook Pictures and charts of environmental sanitation Vanguards Markers Crayon Erasers Pencils Sharpener Health worker
THEME 3: Nutrition and Health **Unit 1: The Food we Eat**	After completing this unit, pupils should be able to: • Identify some food that we eat. • Name some food that we eat. • Explain where the food that we eat comes from. • Classify the food that we eat into main groups. • State the uses of food.	a) Introduce the lesson by displaying charts or pictures about some food items. b) Let pupils identify some food that we eat. c) Let pupils name some food that we eat. d) Let pupils explain where the food that we eat comes from.	a) Observation of pupils' responses about the food that we eat. b) Oral presentations about the food that we eat. c) Group discussions on where the food that we eat comes from and the effects of food shortage on plants and humans. d) State the uses of food.	Textbook Pictures and charts of some food that we eat Vanguards Markers Crayon Erasers Pencils Sharpener

	• Discuss the effects of food shortage on plants and humans.	e) Let pupils classify the food that we eat into main groups. f) Allow pupils to state the uses of food. g) Let pupils discuss the effects of food shortage on plants and humans.		Samples of different soils Glass jars Stirring stick/rod Water Paper Empty mayonnaise bottles
Unit 2: Balanced Diet	After completing this unit, pupils should be able to: • Explain the term balanced diet. • Give examples of a balanced diet. • Describe the composition of a balanced diet. • Discuss the effects of not eating a balanced diet.	a) Introduce the lesson by displaying charts or pictures about a balanced diet. b) Let pupils explain the term balanced diet. c) Allow pupils to give examples of a balanced diet. d) Let pupils describe the composition of a balanced diet. e) Let pupils discuss the effects of not eating a balanced diet.	a) Observation of pupils' responses about a balanced diet. b) Oral presentations about a balanced diet. c) Group discussions on the composition of a balanced diet d) Group discussions on the effects of not eating a balanced diet.	Textbook Pictures and charts of some food materials Vanguards Markers Crayon Erasers Pencils Sharpener
THEME 4: Diseases **Unit 1: Animals that Spread Diseases**	After completing this unit, pupils should be able to: • Identify some animals from the charts that spread diseases that affect humans. • Explain the term diseases. • State examples of animals that spread diseases. • Since humans and apes have very similar immune systems, state what would happen if we eat meat from apes that are infected with a disease? (Answer: It is extremely likely that we will then get the disease. We should never eat bushmeat or interact with wild animals. Wild animals live in the bush and they should be left there). • Draw diagram of the maggot of animals that spread diseases. • Discuss ways by which animals spread diseases. • Explain ways by which we can	a) Introduce the lesson by displaying charts or pictures about animals that spread diseases. Invite health personnel to talk on the topic. b) Let pupils identify some animals from the charts that spread diseases that affect humans. c) Let pupils brainstorm and explain the term diseases. d) Guide pupils to draw diagram of the maggot of animals that spread diseases. e) Let pupils discuss ways by which animals spread diseases. e) Let pupils explain ways by which we can stop the spread of diseases by animals. f) Let pupils write a story about your school community and if the school is actually practicing good sanitation. Write your recommendations to improve the sanitation condition in your school.	a) Observation of pupils' responses about animals that spread diseases. b) Oral presentations about animals that spread diseases. c) Group discussions on the meaning of diseases. d) Observation of pupils' diagrams of the maggot of animals that spread diseases. d) Group discussions on ways by which animals spread diseases and ways by which we can stop the spread of diseases by animals.	Textbook Pictures and charts of some animals that spread diseases Vanguards Markers Crayon Erasers Pencils Sharpener Health personnel or School Nurse Maggot Magnifying glass or hand lens

	stop the spread of diseases by animals.			
Unit 2: Children's Illnesses	After completing this unit, pupils should be able to: • Identify some children's illnesses. • Name some children's illnesses. • State what causes some children's illnesses. • Discuss how children's illnesses can be treated.	a) Introduce the lesson by displaying charts or pictures about children's illnesses. Invite health personnel to talk on the topic. b) Let pupils identify some children's illnesses. c) Let pupils name some children's illnesses. d) Let pupils state what causes some children's illnesses. e) Let pupils discuss how children's illnesses can be treated.	a) Observation of pupils' responses about children's illnesses. b) Oral presentations about children's illnesses. c) Group discussions on what causes children's illnesses and how children's illnesses can be treated.	Textbook Pictures and charts of some children's illnesses Vanguards Markers Crayon Erasers Pencils Sharpener Health personnel or School Nurse
Unit 3: Immunisation	After completing this unit, pupils should be able to: • Explain what is meant by the term immunisation. • Name some diseases that affect children. • Explain how we can prevent diseases that affect children. • Discuss ways in which immunisation is done.	a) Introduce the lesson by displaying charts or pictures about immunisation. Invite health personnel to talk on the topic. b) Let pupils brainstorm and explain the term immunisation. c) Let pupils name some diseases that affect children. d) Let pupils explain how we can prevent diseases that affect children. e) Let pupils in small groups discuss ways in which immunisation is done.	a) Observation of pupils' responses about immunisation. b) Oral presentations about immunisation. c) Group discussions on how we can prevent diseases that affect children and ways in which immunisation is done.	Textbook Pictures and charts about immunisation Vanguards Markers Crayon Erasers Pencils Sharpener Health personnel or School Nurse Child Health Card
THEME 5: Physical Health **Unit 1: Physical Fitness**	After completing this unit, pupils should be able to: • Explain what is meant by the term physical fitness. • Give examples of physical fitness. • List down the components of physical fitness. • Demonstrate physical fitness through exercise. • Discuss the importance of physical fitness.	a) Introduce the lesson by displaying charts or pictures about physical fitness. Invite a Physical Fitness Expert to talk on the topic. b) Let pupils brainstorm and explain the term physical fitness. c) Let pupils give examples of physical fitness. d) Let pupils list down the components of physical fitness. e) Let pupils demonstrate physical fitness through exercise. f) Let pupils in small groups discuss the importance of physical fitness.	a) Observation of pupils' responses about physical fitness. b) Oral presentations about physical fitness. c) Observation of pupils' demonstrations of physical fitness through exercise. d) Group discussions on the components of physical fitness and the importance of physical fitness. .	Textbook Pictures and charts about physical fitness Vanguards Markers Crayon Erasers Pencils Sharpener Physical Fitness Expert Weights Foam mattress Metal bar

Unit 2: Sense Organs	After completing this unit, pupils should be able to: • Identify the sense organs. • Name the sense organ for sight. • Demonstrate the dependence of the sense organ for sight on light. • State the sense organ for hearing. • State the sense organ for tasting. • State the sense organ for smelling. • State the sense organ for feeling or touching. • Show that the sense organs that support each other.	a) Introduce the lesson by displaying charts or pictures about the sense organs. b) Let identify the sense organs. c) Allow pupils to carry out demonstration to show that the sense organ for sight depends on light. d) Let pupils state the sense organs for hearing, tasting, smelling and feeling or touching. e) Let pupils discuss how each sense organ respond to changes in contact with materials. e) Let pupils show that the sense organs support each other.	a) Observation of pupils' responses about the sense organs. b) Oral presentations about the sense organs. c) Observation of pupils' demonstrations of the dependence of the organ for sight on light. d) Observation on the sense organs supporting each other. e) Group discussions on the response of the sense organs to tasting substances, smelling perfume, touch by a cold object, warm object and rough surface.	Textbook Pictures and charts about our senses Vanguards Markers Crayon Erasers Pencils Sharpener Cardboard Light source Ray pins Perfume Sugar Salt
THEME 6: The Stars, Planets and Moon	After completing this theme, pupils should be able to: • Identify the stars, planets and moon. • Explain the term universe. • Describe the presence of the sun, moon and stars in the sky. • List members of the solar system. • Describe the features of the planets and other heavenly bodies. • Discuss the importance of the stars and moon.	a) Introduce the lesson by displaying charts or pictures about the stars, planets and moon. b) Let identify the stars, planets and moon. c) Allow pupils to brainstorm and explain the term universe. d) Let pupils describe the presence of the sun, moon and stars in the sky. e) Let pupils list members of the solar system. f) Let pupils describe the features of the planets and other heavenly bodies. g) Let pupils discuss the importance of the stars and moon.	a) Observation of pupils' responses about the stars, planets and moon. b) Oral presentations about the stars, planets and moon. c) Group discussions on the presence of the sun, moon and stars in the sky, the features of the planets and other heavenly bodies and the importance of the stars and moon.	Textbook Pictures and charts of the stars, planets and moon Vanguards Markers Crayon Erasers Pencils Sharpener Globe

SUGGESTED ADDITION

Theme: **The Human Body & Development** **Unit 3:** **Body systems & organs**	Recognise the importance of understanding one's own body Value a personal sense of curiosity about the body Name the different systems of the body Identify the body's vital organs	Introduce the lesson by explaining that to be able to look after our bodies we need to understand them and what they need The body is made up of different systems that we need to stay alive and healthy. Explain the concept of vital organs. Point to the respective parts of your	On an unlabeled diagram of the body, identify correctly the body systems and vital organs	Simple anatomical illustrations depicting each of the main body systems Pictures of the vital organs and their position in the human body Unlabeled diagrams of human body, presented in such a ways as to allow for

	Recognise that no one has the right to touch the private parts of one's body without consent	body and ask learners to name the relevant vital organ Mime the following and ask learners, 'what am I doing?' Walking, breathing, thinking, eating etc. and use this to introduce the respective system and illustrate it on a suitable diagram Explain that no one has the right to touch the private parts of one's body without consent	Role-play Observation	drawing in key systems and organs **Our Future: Grade 4-6 p.29-33 on good touch/bad touch**

OUTLINE TEACHING SYLLABUS FOR THE SECOND STAGE OF BASIC EDUCATION (CLASS 4)

Suggested Topics/Themes/ Units	Specific Learning Outcomes	Recommended Teaching Styles or Pedagogical Approaches	Assessment Methods	Suggested Learning and Teaching Resources
THEME 1: Science and the Environment **UNIT 1: Living and Non – living Things**	After completing this unit, pupils should be able to: • Identify some living and non – living things in their environment. • State the general characteristics of living and non – living things in their environment. • Explain the general characteristics of living and non – living things in their environment. • Classify organisms found on the school compound into living and non-living things. • Classify living organisms according to their habitat: on land, water and air. • Draw some plants and animals found around their school compound. • State the role Sierra Leone's national animal plays in maintaining the health	a) Introduce the lesson by displaying charts or pictures of some living and non - living things in their environment. b) Let pupils Identify some living and non – living things in their environment. c) Pupils state the general characteristics of living and non – living things in their environment. d) Let pupils briefly explain the general characteristics of living and non – living things in their environment. f) Let pupils classify organisms found on the school compound into living and non-living things. g) Let pupils Classify living organisms according to their	a) Observation of pupils' responses about some living and non – living things in their environment. b) Oral presentations about some living and non – living things in their environment. c)Group discussions on the general characteristics of living and non – living things in their environment. d) Observation of pupils' drawings of some plants and animals found around their school compound. e) Observation of pupils' classification of organisms found on the school compound	a) Textbook b) Pictures and charts of some living and non – living things in their environment. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Trips to Tacugama to allow pupils to see Sierra Leone's national animal and its natural habitat

	of our forests. • Discuss the differences between plants and animals.	habitat: on land, water and air. h) Allow pupils to draw some plants and animals found around their school compound. i) Let pupils discuss the differences between plants and animals.	into living and non-living things and according to their habitat: on land, water and air. f) Group discussions on the differences between plants and animals.	
Unit 2: Plants in the Environment	After completing this unit, pupils should be able to: • Identify some plants in their environment. • State ways people can benefit from planting trees and plants (Answer: Provide food and fruits, shade, clean air (oxygen), water and prevent soil erosion and natural disasters (mud slides). • Classify plants in their environment into different groups. • Draw and label a named flowering plant. • State the functions of parts of a flowering plant. • List down the uses of parts of a flowering plant.	a) Introduce the lesson by displaying charts or pictures of some plants in their environment. b) Let pupils Identify some plants in their environment. c) Pupils classify plants in their environment into different groups. d) Let pupils draw and label a named flowering plant. f) Let pupils state the functions of parts of a flowering plant. g) Let pupils list down the uses of parts of a flowering plant.	a) Observation of pupils' responses about some plants in their environment. b) Oral presentations about some plants in their environment. c)Group discussions on the classification of plants in their environment into different groups. d) Observation of pupils' drawings of a named flowering plant. e) State the uses of parts of a flowering plant.	a) Textbook b) Pictures and charts of some plants in their environment c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Fresh flowering plant
Unit 3: Animals in the Environment	After completing this unit, pupils should be able to: • Identify life cycles some animals in their environment. • Classify animals in their environment into different groups. • Draw and label a named mammal. • State the functions of parts of a named mammal. • List down the uses of animals in their environment.	a) Introduce the lesson by displaying charts or pictures of some animals in their environment. b) Let pupils Identify some animals in their environment. c) Pupils classify animals in their environment into different groups. d) Let pupils draw and label a named mammal. f) Let pupils state the functions of parts of a named mammal. g) Let pupils list down the uses of animals in their environment.	a) Observation of pupils' responses about some animals in their environment. b) Oral presentations about some animals in their environment. c)Group discussions on the classification of animals in their environment into different groups. d) Observation of pupils' drawings of a named mammal. e) State the uses of animals in	a) Textbook b) Pictures and charts of some animals in their environment c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener

			their environment.	
Unit 4: Life cycles of Some Plants and Animals	After completing this unit, pupils should be able to: • Identify life cycles of plants and animals. • Describe life cycles of some plants and animals. • Draw life cycles of plants and animals.	a) Introduce the lesson by displaying charts or pictures of life cycles of some plants and animals. b) Let pupils Identify life cycles of some animals in their environment. c) Let pupils draw life cycles of some plants and animals.	a) Observation of pupils' responses about life cycles of some plants and animals. b) Oral presentations about life cycles of some plants and animals. c)Observation of pupils' drawings of life cycles of some plants and animals.	a) Textbook b) Pictures and charts of the life cycles of some plants and animals c)Vanguards d)Markers e) Crayons
THEME 2: Matter Unit 1: Identification of Common Substances in the Environment	After completing this unit, pupils should be able to: • Identify some common powders and liquids in their environment using their senses of smell, sight and touch. • Name and list some common powders and liquids in their environment. • Demonstrate what happens to some common powders and liquids in their environment. • Observe what happens when powders mix with water e.g. blue, grounded chalk, charcoal powder and when water mixes with other liquids e.g. palm oil, kerosene, pegapak, vegetable oil, night train, etc. State explain what happens when powders mixes with water and when water mixes with other liquids (common powders, common liquids and common gases).	a) Introduce the lesson by displaying charts or pictures of some common powders and liquids in their environment. b) Let pupils identify some common powders and liquids in their environment using their senses of smell, sight and touch. c) Pupils name and list some common powders and liquids in their environment. d) Let pupils demonstrate what happens to some common powders and liquids in their environment. f) Let pupils observe what happens when powders mix with water e.g. blue, grounded chalk, charcoal powder and when water mixes with other liquids e.g. palm oil, kerosene, pegapak, vegetable oil, night train, etc. g) Let pupils explain what happens when powders mixes with water and when water mixes with other liquids (common powders, common liquids and common gases).	a) Observation of pupils' responses about some common powders and liquids in their environment. b) Oral presentations about some common powders and liquids in their environment. c) Observation of pupils' demonstrations about what happens to some common powders and liquids in their environment. d) Observation about what happens when powders mix with water e.g. blue, grounded chalk, charcoal powder and when water mixes with other liquids e.g. palm oil, kerosene, pegapak, vegetable oil, night train, etc. e) Group discussions on what happens when powders mixes with water and when water mixes with other liquids (common powders, common liquids and common gases).	a) Textbook b) Pictures and charts of common substances in the environment c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Salt j) Flour k) Wood ash l) Grounded charcoal m) Chalk n) Water o) Kerosene p) Vegetable oil q) Palm oil r) Jars s) Pegapak t) Night train u) Stoppers v) Sticks for stirring w) Watch/ clock

Unit 2: Grouping Materials	After completing this unit, pupils should be able to: • Identify some materials in their environment. • Name and list some materials in their environment. • Group the materials into solids, liquids and gases. • Give examples of solids, liquids and gases. • Discuss the properties of solids, liquids and gases.	a) Introduce the lesson by displaying charts or pictures of grouping some materials in their environment. b) Let pupils identify some materials in their environment. c) Pupils name and list some materials in their environment. d) Let pupils group the materials into solids, liquids and gases. e) Let pupils give examples of solids, liquids and gases. f) Let pupils discuss the properties of solids, liquids and gases.	a) Observation of pupils' responses about grouping some materials in their environment. b) Oral presentations about grouping some materials in their environment. c) Give examples of solids, liquids and gases. d) Group discussions on what the properties of solids. Liquids and gases.	a) Textbook b) Pictures and charts c)Vanguards d)Markers e) Crayons f) Stone g) Duster h) Chalk i) Water j) Kerosene k) Vegetable oil l) Palm oil m) Body Spray n) Shelltox o) Spritex p) Starch q) Corn Flour
Unit 3: Changes in Materials (Effect of Water on Paper)	After completing this unit, pupils should be able to: • Identify different papers that can be soaked in water. • Describe the effect of soaking different types of paper in water. • Identify and indicate which strip of paper soaks more in water. • State some uses of paper soaked in water.	a) Introduce the lesson by displaying charts or pictures of changes in materials (effect of water on paper). b) Let pupils identify different papers that can be soaked in water. c) Let pupils describe the effect of soaking different types of paper in water. d) Pupils identify and indicate which strip of paper soaks more in water. e) Let pupils state some uses of paper soaked in water.	a) Observation of pupils' responses about changes in materials (effect of water on paper). b) Oral presentations about changes in materials (effect of water on paper). c)Group discussions on effect of soaking different types of paper in water. d) State some uses of paper soaked in water.	a) Textbook b) Pictures and charts c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Empty cartoon j) Old newspaper k) Discarded exercise books l) Water m) Empty tins n) Jars o) Strips of papers (colours) p) Rulers q) Plastic or polythene bags
Unit 4: Properties of Materials Before and after Heating	After completing this unit, pupils should be able to: • Identify some materials before and after heating. • Observe and note changes in temperature that take place in some materials when heat is applied. • Classify changes in materials as physical or chemical changes.	a) Introduce the lesson by displaying charts or some materials brought from the environment such as iron, salt, sugar, candle. wax, paper, wood shavings, dry leaves, sulphur, nails, palm wine, empty containers and heat source. b) Let pupils identify some materials before and after heating.	a) Observation of pupils' responses about changes in some materials before and after heating. b) Oral presentations about changes in materials before and after heating. c)Group discussions on changes in temperature that	a) Textbook b) Pictures and charts c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Iron j) Salt

	• Tabulate differences between physical and chemical changes. • Take pupils to a local industry in the community where activities that involve heat changes in materials occur.	c) Let pupils observe and note changes in temperature that take place in some materials when heat is applied. d) Pupils classify changes in materials as physical or chemical changes. e) Let pupils tabulate differences between physical and chemical changes. f) Let teacher take pupils to a local industry in the community where activities that involve heat changes in materials occur.	take place in some materials when heat is applied and classifying materials as physical or chemical change. d) State differences between physical and chemical changes. e) Write a project on activities carried out at local industries in the community where heat changes in materials occur. Submit your project for the award of marks after one week.	k) Sugar l) Candle wax m) Paper n) Wood shavings o) Dry leaves p) Sulphur q) Nails r) Palm wine s) Heat source t) Empty containers u) Caustic soda v) Palm oil w) Local soap industry x) Charcoal processing y) Foofoo processing z) Garri processing - Black smith shop - Ogiri processing - Orleleh processing - Cassada bread processing - Garra Tieing Dyeing
Unit 5: Processes that Result in the Formation of New Materials	After completing this unit, pupils should be able to: • Identify some processes that lead to the formation of new materials. • Name some processes that lead to the formation of new materials. • Discuss some processes that lead to the formation of new materials (burning, heating, fermentation, evaporation, distillation, etc.). • State the everyday application of processes that lead to the formation of new materials cooking, alcohol preparation, gardening, ironing, frying, steaming, etc.).	a) Introduce the lesson by displaying charts or pictures about some processes that lead to the formation of new materials. b) Let pupils identify some processes that lead to the formation of new materials. c) Let pupils name some processes that lead to the formation of new materials. d) Pupils discuss some processes that lead to the formation of new materials (burning, heating, fermentation, evaporation, distillation, etc.). e) Let pupils State the everyday application of processes that lead to the formation of new materials cooking, alcohol preparation,	a) Observation of pupils' responses about some processes that lead to the formation of new materials. b) Oral presentations about some processes that lead to the formation of new materials. c)Group discussions on some processes that lead to the formation of new materials (burning, heating, fermentation, evaporation, distillation, etc.). d) Group discussions on everyday application of processes that lead to the formation of new materials cooking, alcohol preparation, gardening, ironing, frying,	*a) Textbook* *b) Pictures and charts* *c)Vanguards* *d)Markers* *e) Crayons* *f) Erasers* *g) Pencils* *h) Sharpener* *i) Iron* *j) Salt* *k) Sugar* *l) Candle wax* *m) Paper* *n) Wood shavings* *o) Dry leaves* *p) Sulphur* *q) Nails* *r) Palm wine* *s) Heat source* *t) Empty containers*

		gardening, ironing, frying, steaming, etc.)	steaming, etc.).	*u) Caustic soda* *v) Palm oil*
Unit 6: Separating Mixtures of Materials	After completing this unit, pupils should be able to: • Identify some methods used to separate mixtures of materials. • Name some methods used to separate mixtures of materials. • Discuss some methods used to separate mixtures of materials filtration, sedimentation, decantation, evaporation, separating funnel, hand picking, chromatography. • Demonstrate some simple methods to separate mixtures of materials (filtration, sedimentation, decantation, evaporation, separating funnel, hand picking). Discuss the practical application of methods of separating mixtures of materials in their community.	a) Introduce the lesson by displaying charts or pictures about separating mixtures of materials. b) Let pupils identify some methods used to separate mixtures of materials. c) Let pupils name methods used to separate mixtures of materials. d) Pupils discuss some methods used to separate mixtures of materials filtration, sedimentation, decantation, evaporation, separating funnel, hand picking, chromatography. e) Let pupils demonstrate some simple methods to separate mixtures of materials (filtration, sedimentation, decantation, evaporation, separating funnel, hand picking). f) Let pupils discuss the practical application of methods of separating mixtures of materials in their community.	a) Observation of pupils' responses about some methods used to separate mixtures of materials. b) Oral presentations about some methods used to separate mixtures of materials. c)Group discussions on some methods used to separate mixtures of materials filtration, sedimentation, decantation, evaporation, separating funnel, hand picking, chromatography. d) Observation of pupils' demonstrations on some simple methods to separate mixtures of materials (filtration, sedimentation, decantation, evaporation, separating funnel, hand picking). e) Group discussions on the practical application of methods of separating mixtures of materials in their community.	a) Textbook b) Pictures and charts of some methods used to separate mixtures of materials. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Heat source j) Filter paper k) Cotton wool l) Clean piece of cloth m) Sieve n) Empty tins o) Covers p) Funnel q) Separating funnel r) Ink of different colours s) Water t) Sea water u) Evaporating basin/ dish v) Muddy water
THEME 3: Balancing and Weighing	After completing this theme, pupils should be able to: • Identify some materials that can be used for balancing and weighing. • Prepare balancing boards and sticks. • State and explain factors involved in balancing and weighing. • Demonstrate the process of balancing and weighing using appropriate factors	a) Introduce the lesson by displaying charts or pictures about balancing and weighing. b) Let pupils identify some materials that can be used for balancing and weighing. c) Guide pupils to prepare balancing boards and sticks. d) Pupils state and explain factors	a) Observation of pupils' responses about some materials that can be used for balancing and weighing. b) Oral presentations about some materials that can be used for balancing and weighing.	a) Textbook b) Pictures and charts of some materials that can be used for balancing and weighing. c)Vanguards d)Markers e) Crayons f) Erasers

	using known weights to balance unknown weights. • Explain the importance of weight, pivot (fulcrum), position of load from pivot. Classify loads as light and heavy.	involved in balancing and weighing. e) Let pupils demonstrate the process of balancing and weighing using appropriate factors using known weights to balance unknown weights. f) Let pupils explain the importance of weight, pivot (fulcrum), position of load from pivot. g) Allow pupils to classify loads as light and heavy.	c) Observation of pupils' construction of balancing boards and sticks. d) Group discussions on factors involved in balancing and weighing. d) Observation of pupils' demonstrations on the process of balancing and weighing using appropriate factors using known weights to balance unknown weights. e) Group discussions on the importance of weight, pivot (fulcrum), position of load from pivot. f) Classify loads given as light and heavy.	g) Pencils h) Sharpener i) Objects of different weights j) Long pole k) String of wire l) Balancing loads or boards m) Metre rule n) Bamboo cane split into halves o) Piece of timber p) Nails q) Knife r) Hammer s) Balance
THEME 4: Food and Nutrition **Unit 1: Feeding in Humans**	After completing this unit, pupils should be able to: • Identify various food items eaten by humans at home and in the community. • Name various food items eaten by humans at home and in the community. • State and explain the classes of food eaten by humans. • Give examples of different classes of food. • Demonstrate how we test for starch, fats and oils and proteins. • Identify and name parts of the body used for feeding and digestion. • Discuss how each food item is eaten, i.e. either raw, cooked, fried or baked. • Describe what happens to the food we eat. • Define the term balanced diet. • Give examples of a balanced diet.	a) Introduce the lesson by displaying charts or pictures about feeding in humans. b) Let pupils identify various food items eaten by humans at home and in the community. c) Let pupils name various food items eaten by humans at home and in the community. d) Let pupils state and explain the classes of food eaten by humans. e) Pupils give examples of different classes of food. f) Let pupils demonstrate how we test for starch, fats and oils and proteins. g) Let pupils Identify and name parts of the body used for feeding and digestion. h) Let pupils discuss how each food	a) Observation of pupils' responses about various food items eaten by humans at home and in the community. b) Oral presentations about various food items eaten by humans at home and in the community. c) Group discussions on the classes of food eaten by humans. d) Observation of pupils' demonstrations on how we test for starch, fats and oils and proteins. d) Small group discussions on parts of the body used for feeding and digestion. e) Small group discussions on how each food item is eaten,	a) Textbook b) Pictures and charts of feeding in humans c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Various food items in the community including fruits

	• Discuss what happens when we do not eat a balanced diet. • Describe the diet of children, pregnant mothers, sick and the aged. Discuss structures that aid feeding in humans.	item is eaten, i.e. either raw, cooked, fried or baked. i) Let pupils describe what happens to the food we eat. j) Let pupils brainstorm and define the term balanced diet. k) Pupils give examples of a balanced diet. l) Let pupils discuss what happens when we do not eat a balanced diet. m) Let pupils describe the diet of children, pregnant mothers, sick and the aged. n) Let pupils discuss about structures that aid feeding in humans.	i.e. either raw, cooked, fried or baked. f) Small group discussions on what happens to the food we eat. g) Small group discussions on what happens when we do not eat a balanced diet. h) Small group discussions on the diet of children, pregnant mothers, sick and the aged. i) Group discussions on the structures that aid feeding in humans.	
Unit 2: Excretion (Getting Rid of Waste Products) in Humans	After completing this unit, pupils should be able to: • Identify and name parts of the body used for getting rid of waste products. • Describe organs that remove waste products in humans. • Name and state waste materials removed from our bodies. • Describe experiments to show how to investigate the sense of touch and breathing.	a) Introduce the lesson by displaying charts or pictures about parts of the body used for getting rid of waste products. b) Let pupils identify and name parts of the body used for getting rid of waste products. c) Let pupils describe organs that remove waste products in humans. d) Let pupils name and state waste materials removed from our bodies. e) Pupils describe experiments to show how to investigate the sense of touch and breathing.	a) Observation of pupils' responses about parts of the body used for getting rid of waste products. b) Oral presentations about parts of the body used for getting rid of waste products. c) Group discussions on organs that remove waste products in humans. d) Group discussions on Group discussions on organs that remove waste products in humans. e) Observation of pupils' experiments to show how to investigate the sense of touch and breathing.	a) Textbook b) Pictures and charts of parts of the body used for getting rid of waste products. c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener
THEME 5: The Earth, The Solar System and the Moon	After completing this unit, pupils should be able to: • Identify the components of the solar system.	a) Introduce the lesson by displaying charts or pictures about the earth, the solar system and the moon. b) Let pupils identify the	a) Observation of pupils' responses about the earth, the solar system and the moon. b) Oral presentations about the	a) Textbook b) Pictures and charts of the earth, the solar system and the moon

	• Explain that the sun, moon and the earth form part of the solar system. • Describe movement of the moon round the earth. • State and describe members of the solar system. • Explain whether the moon is a planet or star. • Discuss the phases of the moon. • State the uses of the moon.	components of the solar system. c) Let pupils explain that the sun, moon and the earth form part of the solar system. d) Let pupils describe movement of the moon round the earth. e) Pupils state and describe members of the solar system. f) Let pupils explain whether the moon is a planet or star. g) Let pupils discuss the phases of the moon. h) Let pupils state the uses of the moon.	earth, the solar system and the moon. c) Group discussions on that the sun, moon and the earth form part of the solar system. d) Group discussions on movement of the moon round the earth. e) Group discussions on members of the solar system, whether the moon is a planet or star and the phases of the moon. f) Observation of pupils' drawings of the phases of the moon. f) State the uses of the moon.	c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Video clip/ CD – ROM on the solar system j) Television k) Video player l) Globe
THEME 6: Light and Sound **Unit 1: Light**	After completing this unit, pupils should be able to: • Identify some sources of light in their community. • Name some sources of light in their community. • Arrange batteries and bulbs to produce light. • Demonstrate how light travels. • Investigate transparent, translucent and opaque objects. • Explain the term shadows. Describe the formation of shadows. • Construct shadow puppets. • Discuss the process of reflection of light. • Demonstrate how light reflects around corners. • State some uses of light in their community.	a) Introduce the lesson by displaying charts or pictures about light. b) Let pupils identify some sources of light in their community. c) Let pupils name some sources of light in their community. d) Let pupils arrange batteries and bulbs to produce light. e) Pupils demonstrate how light travels. f) Let pupils investigate transparent, translucent and opaque objects. g) Let pupils explain the term shadows. h) Let pupils describe the formation of shadows. i) Guide pupils to construct shadow puppets. j) Let pupils discuss the process of reflection of light. k) Let pupils demonstrate how light	a) Observation of pupils' responses about light. b) Oral presentations about light. c) Group discussions on the term shadows, formation of shadows and the process of reflection of light. d) Observation of pupils' arrangement of batteries and bulbs to produce light, how light travels, transparent, translucent and opaque objects, construction of shadow puppets and how light reflects around a corner. e) State some uses of light in your community.	a) Textbook b) Pictures and charts c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener Candle Matches Bulbs Torchlight Batteries Wires Cardboards Glass/transparent materials Opaque objects Screen, Source of light Plane mirror, Empty box, Water, Chalk dust Sticky tape, Scissors, Drawing pins, Ink, Glue Clay pot, Glass of milk,

		reflects around corners. l) Let pupils state some uses of light in their community.		Clear, Glass jar, Stirring stick, Thin sticks, Metal spoon, Plastic bucket, Thin cotton cloth, honey, Green leaf, Clear polythene bag Black cotton White paper
Unit 2: Sound	After completing this unit, pupils should be able to: • Identify different forms of sound in their community. • Explain the term sound. • Discuss sources of sound in their everyday life. • Demonstrate that sound comes from vibrating objects. • Interpret sound according to the message it carries. • Explain that sound carries energy and can work.	a) Introduce the lesson by displaying charts or pictures about sound and miming sound produced from different sources. b) Let pupils identify different forms of sound in their community. c) Let pupils brainstorm and explain the term sound. d) Let pupils discuss sources of sound in their everyday life. e) Pupils demonstrate that sound comes from vibrating objects. f) Let pupils Interpret sound according to the message it carries. g) Let pupils explain the term shadows. h) Let pupils explain that sound carries energy and can work.	a) Observation of pupils' responses about sound. b) Oral presentations about sound. c) Group discussions on the term sound and sources of sound in their everyday life. d) Observation of pupils' demonstrations that sound comes from vibrating objects. e) Interpretation of sound according to the message it carries. f) Group discussions on the fact that sound carries energy and can do work.	a) Textbook b) Pictures and charts about different forms of sound c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Paper j) Bell k) Drum l) Guitar m) Flute n) Empty tin o) String p) Light source q) Loud speaker
THEME 7: Electricity	After completing this theme, pupils should be able to: • Identify some materials that conduct electricity. • Explain the term electricity. • Differentiate between a complete circuit and an incomplete circuit. • Set up a simple complete and an incomplete circuit. • Demonstrate how to put a switch into a circuit. • Arrange simple circuits in series and	a) Introduce the lesson by displaying charts or pictures about electricity. b) Let pupils identify some materials that conduct electricity. c) Let pupils brainstorm and explain the term electricity. d) Let pupils differentiate between a complete circuit and an incomplete circuit. e) Guide pupils to set up a simple complete and an incomplete circuit. f) Let pupils demonstrate how to put a switch into a circuit.	a) Observation of pupils' responses about electricity. b) Oral presentations about electricity. c) Group discussions on differences between a complete circuit and an incomplete circuit. d) Observation of pupils' demonstrations on setting up a simple complete and an incomplete circuit, how to put a switch into a circuit and how	a) Textbook b) Pictures and charts about electricity c)Vanguards d)Markers e) Crayons f) Erasers g) Pencils h) Sharpener i) Dry cells or batteries j) Bulb k) Electric wires l) Plastercene

	parallel.	g) Guide pupils to arrange simple circuits in series and parallel.	to arrange simple circuits in series and parallel.	m) Paper n) Bulb holders o) Drawing pins p) Paper clips q) Thick cardboards
THEME 8: Local Industries in our Community	After completing this theme, pupils should be able to: • Identify and name some local industries in their community. • Describe the activities at each industry. • Discuss processes involved at each industry. • Explain the importance of local industries to the community.	a) Introduce the lesson by displaying charts or pictures about some local industries in their community. Take pupils out to visit local industries in their community. Invite experts from the local industries to talk on their activities. b) Let pupils identify and name some local industries in their community. c) Let pupils brainstorm and Describe the activities at each industry. d) Let pupils discuss processes involved at each industry. e) Allow pupils to explain the importance of local industries to the community.	a) Observation of pupils' responses about some local industries in their community. b) Oral presentations about some local industries in their community. c) Group discussions on the activities at each industry, processes involved at each industry and the importance of local industries to the community. d) Observation of activities carried out at each industry. e) Give project to pupils to write on the activities of blacksmiths and welders. They should submit their write – ups after one week for the award of marks.	Textbook Pictures and charts of some local industries in their community Vanguards, Markers Crayons, Erasers Pencils, Sharpener Empty aluminium cans Heat source, Metal parts, Benni seeds Rubber bowls, Rubber buckets, Sieve Winnower, Pots, Cassava tubers, Knife, Banana leaves, Firewood, Grater, Pickaxe, Porous sack, Roasting pots, Ash, Long sticks, Sugar, Yeast, Tin/jar, Water, Shovel, Corn or maize, Empty drums, Metal tubes, Caustic soda, Palm oil, cutlass, Raw sticks, Stirrer, Empty drums, Flat containers, Plastic bag, Jute rice bag, Dried banana leaves, Dried scratch leaves
THEME 9: Personal Hygiene Unit 1: Body Odour	After completing this unit, pupils should be able to: • Identify parts of the body that produces odour, Include reference to genital hygiene • State the causes of body odour. • Demonstrate how to reduce or remove body odour.	a) Introduce the lesson by displaying charts or pictures about parts of the body that produces odour. b) Let pupils identify parts of the body that produces odour including the genitals c) Let pupils state the causes of body odour. d) Let pupils demonstrate how to	a) Observation of pupils' responses about parts of the body that produces odour. b) Oral presentations about parts of the body that produces odour. c) Group discussions on the causes of body odour and dangers associated with	Textbook Pictures and charts of parts of the human body that produces odour Vanguards Markers Crayons Pencils Erasers

	• Recognise dangers associated with sharing personal effects with others.	reduce or remove body odour. Including the genital area e) Allow pupils to become aware of the dangers associated with sharing personal effects with others: towel, toothbrush, sponge, razor blade comb and handkerchief.	sharing personal effects with others. d) Observation of pupils' demonstrations on how to reduce or remove body odour.	Sharpener, Towel Toothbrush Sponge Razor blade Comb Handkerchief Perfume Deodorant Soap Shaving set
Unit 2: Care of the Skin	After completing this unit, pupils should be able to: • Identify and name some diseases of the skin (ringworm, eczema, beriberi, scabies, measles, chicken pox, etc.). • Discuss diseases that affect the skin. • Identify skin diseases that can be transmitted through sex • Describe measures that can be used to prevent some common skin diseases.	a) Introduce the lesson by displaying charts or pictures about care of the skin. Invite health personnel to talk on the topic. b) Let pupils identify and name some diseases of the skin (ringworm, eczema, beriberi, scabies, measles, chicken pox, etc.). c) Let pupils discuss diseases that affect the skin. d) Let pupils describe measures that can be used to prevent some common skin diseases. Let pupils name skin diseases transmitted sexually	a) Observation of pupils' responses about care of the skin. b) Oral presentations about care of the skin. c) Group discussions on diseases that affect the skin and measures that can be used to prevent some common skin diseases. d) test of knowledge on common skin diseases	Textbook Pictures and charts of the human skin Vanguards Markers Crayons Pencils Erasers Sharpener, Health personnel Test

OUTLINE TEACHING SYLLABUS FOR THE SECOND STAGE OF BASIC EDUCATION (CLASS 5)

Suggested Topics/Themes /Units	Specific Learning Outcomes	Recommended Teaching Styles or Pedagogical Approaches	Assessment Methods	Suggested Learning and Teaching Resources
THEME 1: **Water: Unit 1: Sources, uses of and properties of water.**	After completing this unit, pupils should be able to: • Identify some sources ow water in their community • State the sources of water • List the properties of water • State the uses of water	a) Teacher discusses with the pupils where they get their water from. b) Show the pupils a bowl of clean water to state some of the properties c) Ask pupils to writer down all the ways water can be used d) Ask pupils about Bumbuna falls and what it is used for. Share with pupils: In large part due to protecting Freetown's two major water catchments, in 2018 Tacugama was accredited with the prestigious Queen's Commonwealth Canopy (QCC) Accreditation. Read more on this and share with pupils	a) Let pupils draw a chart slowing at least four ways in which water is being used. b) Let them also write down the places where they can get water from. Pupils should mention for example drinking, cooking, bathing, laundry, agriculture, hydroelectricity to dissolve substances.	a) Textbook Charts pictures showing some sources of water e.g. well, rain, stream, tap. c) Vanguards d)Markers e) Crayons f) Pencils g) Erasers h) Sharpener i) Visit Congo Dam (one of Freetown's largest water catchments) located on the foothills of Tacugama
Unit 2: Water purification	After completing this unit, the pupils should be able to: • State how water can be purified for domestic use. • Describe how water can be purified for towns and villages. • Explain why it is necessary to purify water. • Name some water- borne diseases	a) Allow the pupils to tell you how they can purify muddy water b) Explain how water is purified on a large scale. c) Let pupils name existing dams Pupils can be asked to name some diseases associated with water. Mention cholera, diarrhoea and dysentery	a) Pupils work in group and explain how they can purify muddy water. Let they explain each step they take	Clean cloth Muddy water Clean container Heat source Chlorine Pictures of Guma Dam Internet Vanguards Markers Crayons Pencils Erasers Sharpener
Unit 3: Water Cycle	After completing this unit, the pupils should be able to: • Exhibit knowledge of the water cycle • Explain the terms associated with the water cycle • Demonstrate the process of	a) Explain the terms associated with the water cycle e.g. evaporation, condensation and precipitation. b) Let pupils state factors that cause water to evaporate (temperature dryness, wind) Do experiments to demonstrate evaporation and condensation with the	a) Pupils work in group do their experiment and explain the result. b) Boil water and hold the transparent flat sheet over it. c) Let pupils explain with reasons which will dry faster.	Heater Transparent flat sheet Water Heat source. Cup filled with ice cubes Fan Vanguards

	evaporation and condensation Draw the water cycle	pupils.	d) Wet clothes in the sun w the water cycle	Markers Crayons Pencils Erasers Sharpener
THEME 2: Machines **Unit 1:** **Simple machines**	After completing this theme, the pupils should be able to; • Explain what a machine is • Identify some simple machines used in the home. • Identify the effort load and fulcrum a lever Understand how machines used every day work	a) Explain the definition of a machine b) Do a simple diagram to explain the terms, effort load and fulcrum c) Identify the load effort and fulcrum on some machines used in every day work e.g. plier Ask pupils to name some other machines used in the home (forceps, scissors, bottle opener, hammer, shovel).	a) Pupils work in groups with some of these machines and carry our simple activities e.g. opening a bottle of drink b) Let pupils state the importance of machines Pupils draw a diagram of a lever system.	Pictures Bottle opener Scissors Forceps Shovel Nut cracker Sugar tong Wet clothes in front of a fan Wet clothes in a study place
THEME 3: Ecology and Conservation **Unit 1: Soil Components, Types and Uses**	After completing this unit, the pupils should be able to: • Define soil and state its component • Name the different types of soils and list their proprieties. • State the effect of soil on the vegetable type • Do simple experiments to demonstrate porosity water retention in soil and to separate its particles • Name some soil organisms State some uses of soil.	a) Teacher comes to class with sand, loamy and clayey soil and asks pupils to identify them. b) Pupils in groups observe the soils and state some differences among them. c) Pupils state with reasons the best soil for planting crops. d) In group, let the pupils perform experiment to: i. Determine porosity ii. Water retention iii. Different soil particles Find out from pupils what soil is used for in their community	a) Practical investigations in groups b) Pupils perform the various experiments and state their conclusions c) Pupils collect samples of garden soil and list the soil organism them Pupils examine sandy, clayey and loamy soils and list their properties.	Sandy soil Loamy soil Clayey soil Funnel Cotton wool Measuring cylinders Vanguards Markers Crayons Pencils Erasers Sharpener
Unit 2: Soil Conservation	After completing this unit, pupils should be able to: • State the meaning of the term conservation. • Explain why we need to conserve the soil • Discuss how nutrients may be lost from the soil • Describe how soil fertility may be maintained	a) Start by explaining the meaning of the term conservation. b) Ask pupils to explain why soil needs to be conserved. c) Ask how local farmers in their area maintain the fertility of the soil. d) Ask pupils to state how soil may lose its fertility. e) Discuss with pupils how soil. ay lose its fertility and ways of maintaining soil fertility. Let pupils explain the terms: crop rotation, soil erosion, compost, fertilizers.	Pupils in groups will explain one method of maintaining soil fertility to the class stating its advantages	Charts and pictures about soil conservation Soil conservation specialist from the Ministry of Agriculture, Forestry and Food Security Vanguards Markers Crayons Pencils Erasers Sharpener

Unit 3: Forest Reserves	After completing this unit, pupils should be able to: • Understand why we need to conserve our forests. • State where we have forest reserves in Sierra Leone • State where we have national parks in Sierra Leone (Answer: Sierra Leone's has 4 National Parks: 1) Western Area Peninsula National Park (where he Tacugama Chimpanzee Sanctuary is located) 2) Loma Mountains National Park (Home to the highest concentration of chimpanzees anywhere in West and Central Africa (as per Tacugama) 3) Outamba Kilimi National Park and 4) Gola Rainforest National Park). • State some of the products we get from our forest reserves. • Explain how we can maintain our forest reserves. • Why are chimpanzees, Sierra Leone's national animal, important to the forest?	a) Brainstorming to get prior knowledge of pupils. b) Ask pupils to state all the things that they can get from the forest. c) Mention the Gola Forest and Tiwaii Island, Tacaguma d) Ask pupils to state some of the resources from the forest e.g. wild life, timber, wood, fruits, medicine, etc. e) Talk about forest guards and governmental to protect the forests. Invite a specialist for forest reserves from Ministry of Agriculture, Forestry and Food Security	Pupils find out about species in the forest that need to be protected	Pictures and charts about forest reserves, forester Visit to Tacaguma at Charlotte. Vanguards Markers Crayons Pencils Erasers Sharpener
THEME 4: Chemical Reactions **Unit 1: Chemical Processes in the Home**	After completing this theme, pupils should be able to: • Explain what a chemical reaction is. • State some chemical processes in the home • Explain how foofoo is made • Explain how ogiri is made • Explain how local soap is made Discuss about preservation of foofoo, ogiri and local soap.	a) Let pupils explain what a chemical reaction is. b) Let pupils Name some chemical reactions, like fermentation distillation and explain them c) Ask pupils to state what is used to make: foofoo, ogiri and local soap. d) Let pupils explain that foofoo and ogiri use fermentation processes, omole uses fermentation and distillation. f) Let pupils discuss about how foofoo, ogiri and local soap are preserved.	a) Divide the class into three groups. b) Group 1 – find out and write how ogiri is made. c) Group 2 – find out and write how foofoo is made d) Group 3 – find out and write how local soap is made e) Group 4 - preservation of foofoo, ogiri and local soap. Pupils submit their write –ups and assess them.	Foofoo Ogiri, Cassava, Benni seeds Caustic soda Palm oil Water Containers Knife Heat source Vanguards Markers Crayons Pencils

				Erasers Sharpener
THEME 5 **Disease prevention** **Unit 1: Disease Prevention**	After completing this unit, the pupils should be able to; • Explain the importance of disease prevention. • State the ways of preventing diseases. • State some of the common diseases that we can prevent. • Explain the difference between communicable and non-communicable diseases • State how to prevent Covid -19 from spreading in their classroom. • State the importance of vaccination	a) Introduce the lesson with two pictures. One showing a clean environment and the other a dirty environment. b) Introduce the concepts of communicable and non-communicable disease c) Let pupils state in which environment one is likely to get sick and state the reasons d) Remind pupils about personal hygiene which they studied earlier e) Discuss some of the common diseases like malaria, cholera and diarrhea with them. f) Let pupils tell you about the ways to prevent Covid -19 e) Talk about immunization in young children.	a) Pupils write down in their notebooks all the unhealthy habits shown in the unclean environment. b) Draw a picture of some ways of keeping ways of keeping the classroom clean. c) In groups, pupils discuss how to prevent malaria, diarrhea and cholera d) Pupils write down precautionary measures to prevent Covid- 19 f) Let pupils find out about diseases that children are vaccinated for.	Bucket Soap Water Towels Broom Dustbin Mosquito tent Pictures Posters about sexual and reproductive health. Vanguards Markers Crayons Pencils Erasers Sharpener
Theme: **The Human Body & Development:** **Preparation for discussion of sexual development :** **Bodily integrity & Rights** **Unit 5:** **Puberty and changes**	Respect the right of self and others to personal space and privacy Recognise the difference between good and bad touch Feelings and self-esteem Identify major changes male and female bodies undergo throughout life Define puberty Describe the process of puberty for boys and girls Identify the key respective dimensions of puberty (physical, emotional, social, cognitive) for	Introduce the ideas of human and children's rights as a necessary prelude to discussing sex and sexuality Talk about the fundamental right to control over one's own body and the role of feelings and self-esteem in influencing subsequent behaviour Introduce the lesson by explaining that throughout life, our bodies change. Illustrate this with images of babies, toddlers, young children, older children, young people, adults, older people. Ask students to identify the physical differences they see from one stage to the next What do these differences mean in terms of what the person can do? How they feel?	Observation of discussion p.55-6 Activity 2, 3 + 4 p.60 Activity 1+ 2 Quiz on changes associated with puberty for boys and girls To include questions on: • Defining puberty • Male and female bodies and puberty • Physical, emotional, cognitive and social changes associated with puberty • Differences between	**Our Future** Grade 4-5: p.19-33 reference material and trigger images in children's rights, good and bad touch and abuse p.53-54 reference material on feelings p.58-59 on self-esteem Illustrations of male and female bodies at different key stages: birth, puberty, adulthood (include pregnant and non-pregnant women), old-age large sheets of paper Marker pens Cards or smaller bit of

	boys and girls Acknowledge - in self and others - the internal and external effects of puberty Recognise that the visible features of puberty can might be especially challenging (e.g. those with disabilities, intersex) Resist efforts to tease or stigmatize others Challenge attempts by others to shame those undergoing puberty Distinguish between sex and gender Identify gender stereotypes and their respective effects upon girls and boys Value gender equality Recognise different forms of gender inequality, including bullying, teasing, harassment and violence Identify sources of support for those affected by the above Challenge assertively gender discriminatory language and	What they think about? Puberty is the name for the time when our bodies go through a series of changes in preparation for adulthood. Illustrate these changes with suitable models or images Body mapping (drawing the outline of real-size male and female bodies – using volunteers lying on large sheets of paper on the floor and drawing around them) Ask pupils to mark on the outline the parts of the body where the changes associated with puberty occur You can also use these as reference items for further activities about the body and development Explain why puberty might be more challenging for some people than others Give examples of teasing, bullying and shaming related to puberty Ask pupils to brainstorm or role-play constructive ways of responding to these Explain the difference between sex and gender with examples Provide examples of gender stereotypes and how these might affect what people feel about themselves Explain what gender equality means and why it matters Ask pupils to give examples of gender inequality	sex and gender Observation of discussion Role plays Activity: p.38 Changes in boys and girls Activity p.37 on body mapping Observation of discussion Observation Observation Activity (p.73) Gender role or sex role Activity (p.74) Being a boy, being a girl Activities (p.74-5) Miming sex roles	paper to use as labels **Our Future:** p. 36 Reference material on physical changes at puberty **Our Future:** models of male (p42-44) and female reproductive systems (p39-41) menstruation (p45-46) and wet dreams (p50-52) **Our Future p. 70-79 –** resource information, images and activities on gender Trigger pictures from **Our Future** p8-9 to discuss gender and respect in classroom (for both pupils and teachers) **Our Future** p.13-15 resource material for talking about supporting one another during puberty **Our Future: (65-66)**
GENDER				

	behaviour	Discuss sources of emotional support Ask pupils to demonstrate through role play challenging gender discrimination	Activities (p.77-9) 'Real' boys & girls Activities (p.66) Role plays	**Resource material** Also: p. 53-61 reference material and activities on feelings and self-esteem

SCIENCE AND THE ENVIRONMENT

OUTLINE TEACHING SYLLABUS FOR THE SECOND STAGE OF BASIC EDUCATION (CLASS 6)

Suggested Topics/Themes/Units	Specific Learning Outcomes	Recommended Teaching Styles or Pedagogical Approaches	Assessment Methods	Suggested Learning and Teaching Resources (Core/supplementary)
THEME 1: Energy **Unit 1: Sources of Energy**	After completing this theme, pupils should be able to: • Identify some sources of energy in their community. • State some sources of energy in their community. • State the forms of energy that these sources produce. • Explain that energy can be converted from one form to the other.	a) Ask pupils to name some things that can produce energy and the type of energy produced. b) Puts the list on the blackboard for discussion. c) Ask pupils to state the most commonly used source of energy in their locality d) Let pupils explain, for example: - Plants convert solar energy to chemical energy. - Electric iron converts electrical energy to heat energy. - Torchlight converts chemical to light energy.	a) From pictures of different energy sources pupils state the form of energy that they produce. b) Pupils name five things used in the home that produce heat energy c) Pupils find out other forms of energy change.	Pictures of the different sources of energy. Charcoal, Wood, Kerosene, Solar panels, Windmill, Waterfall, Car lighting, Battery, Sun, Light bulb, Afrigas, Moving waves and tides, Moving crane, Torch light, Electric iron, light, bulb

THEME 2: Matter **Unit 1: General properties of matter**	After completing this unit, pupils should be able to: • Define the term matter. • List the general properties of matter • Name some examples of plants • Name some examples of animals • Name some non- living things that make up matter.	a) Let pupils define the term matter. b) Now ask pupils to name examples of matter based on their definition. c) Let the pupils group the examples into living things (plants and animals) d) Non-living things, let them say which of the non-living things are metals and non-metals. Tell pupils that air, soil and water are also matter.	a) Pupils make a list of objects in the classroom and in the school compound. Let them include the plants and animals in the compound b) Let them put the examples of matter under these headings: Living Non- living Plants Animals Metals Non- metals	Variety of objects e.g. stones, bricks, rope, iron, clay, book, nails, cup, wire, soil, water
Unit 2: Properties of Matter – mass, volume and density	After completing this unit, pupils should be able to: • Explain the terms, mass, volume and density. • Identify instruments used to measure mass, volume and density. • State the units of mass, volume and density • Measure the mass and volume of objects • Discuss about mass, volumes and densities of objects.	a) Start the lesson by asking pupils to brainstorm and explain the meaning of the terms mass, volume and density. b) Let pupils state the units of mass, volume and density. c) Let pupils explain how to use the beam balance and to read the volume on the measuring cylinder. d) Let pupils explain that the volume of regular object = length x breath x height e) Guide pupils to demonstrate how to find the volume of an irregular object like a stone f) Let pupils discuss about mass, volumes and densities of objects.	a) Practical investigations of the properties of matter. b) Pupils use the beam balance to measure the mass of a stone, fruit and pen c) Pupils record your answer in kilograms or grammes d) Let pupils calculate the volume of a soap bar e) Guide pupils to read the volume of fluid in a measuring cylinder f) Given that density = $\frac{\text{mass}}{\text{volume}}$ g) Let pupils do simple calculations of density	Bathroom scale or beam balance Different kinds of fruits, stone and pen Measuring cylinder Water Soap bar

Unit 3: States of Matter	After completing this unit, pupils should be able to: • Name the three states of matter. • Outline the properties of the states of matter. • Carry out simple experiments to show some of the properties of matter. • Demonstrate how matter can change from one state to another.	a) Start the lesson by guiding pupils to state that matter exists as solids, liquids and gases. b) Ask pupils to name some examples of solids, liquids and gases in their environment. c) Let pupils record their list on the blackboard. d) Divide the class into groups, each group is provided with a group of items e) Pupils examine the materials and record their shape, size, colour, texture, hard or soft. f) Guide pupils to explain the properties of solids, liquids and gases.	a) Pupils group the objects named as solids, liquids and gases b) Pupils examine objects provided by the teacher and record their shape, size, colour, texture, hard, soft, liquid c) Group discussions on the properties of solids, liquids and gases. d) Observation of pupils' demonstrations of change of matter from one state to another.	Charts and pictures of different examples of matter Ice block Water Glass Wood Candle wax Stone Oil Bread Paper Ink Ruler Key Coke Tin Can
Unit 4: Changes in Shape of Matter	• Explain what can cause matter to change its shape	a) Guide pupils to demonstrate change of shape of matter by: - Leaving ice cubes by a sunny window silt. - Heat water in a beaker. - Hold a mirror above a beaker of boiling water. - Let the pupils observe record their observations. b) Light a candle and let pupils observe and record what happens to the wax when the flame is on, and after the flame is off.	a) Observation of pupils' responses about changes in shape of matter. b) Oral presentations about pupils' responses about change in shape of matter. c) Observation of pupils' demonstrations of change in shape of matter.	Ice cubes Heat source

THEME 3: Motion **Unit 1: Motion in plants**	After completing this unit, pupils should be able to: • Explain what motion means. • Describe ways by which plants move. • Name the structures that aid movement in plants. • Discuss why plants move.	a) Use questions to get the pupils to give you the correct information. b) E.g. if you say something is in motion, what does it mean? c) Do plants show movement? d) What part of the plant moves? e) What are some of the ways that plants move? f) Why do you think that plants move? g) How many of you know the plant "tie you lappa"? h) What part of the that plant moves? i) Let pupils say that plants move in search of food, water, light .	a) Draw and label one climbing plant and one creeping plant b) Pupils write down the names of some plants that move and state how they are able to do so c) In groups, pupils examine potato vines, yam, stems, piece of bougainvillea stem, coralitta stem and say how these plants move.	a) Variety of plants, bougainvillea, potato vines, plant with tendrils, flowers that are opened, one that is closed, coralitta or any other flower. b) Pictures of plants in the school garden that show movement.
Unit 2: Motion in Animals	After completing this unit, pupils should be able to: • Name a variety of animals in different environments. • List down different ways by which animals move. • Explain why animals move.	a) Discussion with pupils on different types of animals e.g. insects, birds, reptiles, fish, frogs etc. b) Take each type separately and let pupils say how these organisms move e.g. fish use fins to swim, etc. c) Let pupils list down on the blackboard the different ways by which animals move. d) Let the pupils write explain why animals move e.g. to escape predators, to look for food, etc.	a) From a group of animals in different environments pupils state how they move b) Group discussions on how animals move.	Pictures or charts of different animals in water, land and air. Vanguards Markers Erasers Pencils Sharpener

Theme: **The Human Body & Development** **Unit 6:** **Sexual maturation**	Explain the following processes that contribute to human reproduction: menstrual cycle, ovulation, sperm production/ ejaculation	**Introduce the lesson by reminding pupils of the work they did on puberty and explain how this theme will deepen their understanding**		

and reproduction	Identify specific hormones and how these influence puberty and sexual maturation Describe possible personal and social effects of these physical processes on boys and girls Describe effective menstrual hygiene (including access to relevant materials e.g. pads and clean water) Distinguish between physical and emotional maturity and the implications of this for girls and boys Recognise that physical ability to conceive and carry a child does not, in itself, imply readiness Identify social rituals and rites that mark sexual maturity for girls and boys respectively, including traditions which may be harmful such as FGM Accept that both girls and boys have sexual thoughts and feelings that can be pleasurable Recognise sexual pleasure as the outcome of a physiological process of stimulus and response Understand how sexual maturity	Explain the specific hormones involved in puberty and sexual maturation and how they contribute e.g. menstruation and wet dreams Discuss the personal and social effects of these physical processes on boys and girls Explain effective menstrual hygiene (including access to relevant materials e.g. pads and clean water) Explain the difference between physical and emotional maturity and the implications for girls and boys Recognise that physical ability to conceive and carry a child does not, in itself, imply readiness Give examples of social rituals and rites that mark sexual maturity for girls and boys respectively	**Activities p51-2: 1+2+3:** **Letter to Auntie** **True or False** **The Question Box** **Activities p.82:** **Debate** **Assessment Game** **Activities p.84-5:** **Answering questions** **Agony aunt letter** **Activities 1+2 p.47-8:** **why do girls have periods?** **March words to picture** **Problems and worries about menstruation** **(Grade 6)** **Activities p34** **Discussing traditional ideas** **Helpful or harmful effects**	**Our future p. 50** **Resource material:** **wet dreams p.80-1** **sexual feelings** **p.84 worries about sexual feelings** **Menstruation p.45-6** **Our Future (grade 6)** **Reference material p.29 + p.33 + p.35**

	is perceived and experienced differently by boys and girls Articulate significant outstanding questions			

INTEGRATED SCIENCE
OUTLINE TEACHING SYLLABUS FOR THE THIRD STAGE OF BASIC EDUCATION
(JSS 1)

Suggested Topics/Themes/ Units	**Specific Learning Outcomes**	**Recommended Teaching Styles or Pedagogical Approaches**	**Assessment Methods**	**Suggested Teaching and Learning Resources**
Theme 1: **Introduction to Science and the Society** **Unit 1: Meaning, branches and Importance of Science**	After completing this unit, pupils should be able to: • Explain what is meant by the term science. • State the branches of science. • Discuss the method of studying science. • Define the term technology. • List some careers in science and technology • Name some prominent national and international scientists • Discuss importance of science and technology.	a) Introduce the lesson by displaying charts and ask pupils to brainstorm and explain what they mean by the term science and technology. b) Allow pupils to provide a list of basic branches of science. c) Let pupils discuss the method of studying science and the importance of science and technology. d) Pupils list down some careers in science and technology e) Allow pupils to name some prominent national and international scientists.	a) Observation of pupils' responses about science and technology. b) Oral presentations about science and technology. c) Group discussions on method of studying science and the importance of science and technology.	a) Textbook b) Charts and pictures about some activities in science and society c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Unit 2: Process Skills in Science	• After completing this unit, pupils should be able to: • Explain the term process skills • State process skills involved in science	a) Introduce the lesson by asking pupils to brainstorm and explain what they mean by the term process skills in science.	a) Observation of pupils' responses about process skills in science. b) Oral presentations about process skills in science.	a) Textbook b) Charts and pictures about process skills in

	• Discuss process skills involved in science.	b) Allow pupils to provide a list of basic skills in science. c) Let pupils discuss the process skills in science.	c)Group discussions on skills involved in studying science.	science c)Vanguards d)Markers e) Sharpeners f) Erasers g)Pencils
Unit 3: Introduction to Measurement	• After completing this unit, pupils should be able to: • Define the term measurement • State the types of measurement • Discuss the types of measurement • State basic and derived units of measurement, instruments and their S.I units. • Demonstrate measuring mass, length, volume, time and temperature	a) Introduce the lesson by displaying charts and ask pupils to brainstorm and define the term measurement. b) Let pupils state the types of measurement. c) Let pupils discuss the types of measurement. d) Pupils state basic and derived units of measurement, the instruments used and their S.I units. e) Demonstrate measurement of mass, length, volume, time and temperature and allow pupils to also measure the following units.	a) Observation of pupils' responses about measurement. b) Oral presentations about measurement. c)Group discussions on types of measurement. d) State some basic and derived units of measurement, the instrument used for each of them and their S.I units	a) Textbook b) Charts and pictures about measurement c)Vanguards d)Markers e) Sharpeners f) Erasers g) Pencils h) Vernier calipers i) Micrometer screw gauge j) Measuring cylinder k) Metre rule l) Tape measure m) Spring balance n) Thermometers o) Stop Clocks p) Beakers q) Chemical balance
Theme 2: **Matter** **Unit 1: Matter around us**	After completing this unit, pupils should be able to: • Explain the term matter. • State the building blocks of matter • Name the three states of matter. • Define basic terms associated with matter. • List the properties of the three states of matter (e.g. shape, volume, mass, etc.) • Classify some earth's resources into their respective states of matter. • Observe and explain the movement of	a) Introduce the lesson by asking pupils to name some things around them. b) Allow pupils to explain the term matter, state the building blocks of matter and the three states of matter with their properties. c) Let pupils define some basic terms associated with matter. d) Pupils classify some earth's resources into the three states of matter.	a) Observation of pupils' responses about matter. b) Oral presentations about matter. c)Group discussions on properties of matter. d) Define the following terms associated with matter: atom, element, molecule, compound, mixture, ion, cation, anion, etc. e) Group discussions on movement of particles in gases, liquids and semi – solids (diffusion). f) Observation of demonstrations on	Textbook, Charts and pictures about matter, Vanguards Markers, Sharpeners Erasers, Pencils Hand lens, Chalk Cubes of sugar Knife, Microscope Microscope slide, Syringe, Salt, Sand, Sugar, water, Kerosene,

	particles in gas, liquid and semi – solid as diffusion. • Define and describe diffusion in gases and liquids. • Do simple demonstrations to explain the process of diffusion. • Observe various temporary and permanent changes that matter undergoes and deduce accordingly. • Give examples of temporary and permanent changes of matter. • Discuss the Kinetic Theory of Matter in terms of movement of atoms and molecules.	e) Allow pupils to observe and explain the movement of particles in gases, liquids and semi – solids. f) Let pupils define and describe diffusion in gases and liquids. g) Pupils carry out demonstrations on diffusion after demonstration by the teacher. h) Let pupils state some examples of temporary and permanent changes of matter. i) Pupils briefly discuss the Kinetic Theory of Matter in terms of movement of atoms and molecules.	diffusion g) Observation of pupils' responses on temporary and permanent changes in matter. h) State some examples of temporary and permanent changes in matter. i) Group discussions on Kinetic Theory of Matter	Palm oil, Gas cylinder, Transparent containers, eakers Balloons, Crystals of potassium permanganate, Heat, source/Bunsen burner, Tripod, stand, Iodine, Camphor Naphthalene, Filter funnel, Evaporating dish, Sheet of metal Block of ice
Unit 2: Gases in the Air	After completing this unit, pupils should be able to: • List the constituents of gases in the atmosphere and their percentage abundances. • State the physical and chemical properties of gases in the atmosphere. • List the uses of gases in the atmosphere. • Carry out simple experiments to show that air supports burning or combustion and living things breathe air. • Do simple tests for gases. • Briefly explain the changes in the composition of air brought about by volcanic eruptions, industrial pollutants, burning of fuels and biological processes (respiration, photosynthesis and decay). • Define the terms pollution and pollutants. • List and explain the types of pollution. • Note the causes of air pollution and its effects on the environment. • State ways of minimising air pollution. • Explain the terms Greenhouse Effect and Global Warming. • Discuss the effects of Greenhouse Effect and	a) Introduce the lesson by displaying charts and asking pupils to brainstorm and state the components of air and their corresponding percentages. b) Let pupils state the physical and chemical properties of gases in the atmosphere and their uses. c) Let pupils perform simple experiments to show that air supports burning or combustion and living things breathe air. d) Pupils explain changes in the composition of air. e). Let pupils in small groups discuss about air pollution, its causes, effects and prevention. f) Pupils discuss about Greenhouse Effect and Global Warming: definitions, causes, effects and ways of reducing Global Warming.	a) Observation of pupils' responses about gases in the air. b) Oral presentations about gases in the air. c)Observation of simple experiments on air. e) Observation of simple tests for gases. • f) Group discussions on changes in the composition of air brought about by volcanic eruptions, industrial pollutants, burning of fuels and biological processes (respiration, photosynthesis and decay). g) Group discussions on meaning of pollution, types of pollution and air pollution. h) Group discussions on Greenhouse Effect and Global Warming.	a) Textbook b) Charts and pictures about gases in the air c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Test tubes of gases i) Bunsen burner or heat source j) Water k) Trough l) Charcoal

	Global Warming (climate change). • Suggest ways of reducing Global Warming.			
Unit 3: Characteristics of Living Things	After completing this unit, pupils should be able to: • State and explain the characteristics of living things. • List the main differences between living things and non - things. • State the differences between plants and animals. • Recognise that there is a variety of plants and animals which can be grouped on the basis of observable external characteristics. • Classify an assortment of objects based on observable features e.g. colour, shape, size, smell, etc. • Classify plants and animals according to common observable characteristics into plants, algae, fern, flowering and non – flowering plants (seed plants), animals: vertebrates and non – vertebrates. • Construct a simple classification key and use it to identify organisms. **NOTE**: the existence of micro – organisms such as fungi, bacteria and viruses which are not classified as either plants or animals.	a) Introduce the lesson by displaying charts and asking pupils to explain the characteristics of living things. b) Let pupils state the differences between plants and animals. c) Pupils classify assorted objects on the basis of observable features or characteristics. d) Let pupils classify plants and animals into different groups according to observable features or characteristics. e) Allow pupils to construct a simple classification key to identify different organisms. f) Pupils discuss that some micro –organisms such as fungi, bacteria and viruses are not classified as plants or animals.	a) Observation of pupils' responses about characteristics of living and non – living things b) Oral presentations about characteristics of living and non – living things. c)Classify different living things into plants and animals on the basis of observable features or characteristics. d) Allow pupils to construct a simple classification key to identify different organisms. e) Group discussions on some micro – organisms such as fungi, bacteria and viruses which are not classified as plants or animals.	a) Textbook b) Charts and pictures about characteristics of living things c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Flowering plants
Unit 4: Cell Structure, Organisation and Systems	After completing this unit, pupils should be able to: • Define the terms cells, tissues, organs and systems. • Give examples of cells, tissues, organs and systems in plants and animals. • Recognise the importance of division of labour in multicellular organisms. • Recognise that there is a variety of plants and animals which can be grouped on the	a) Introduce the lesson by displaying charts and asking pupils to define the terms cells, tissues, organs and systems. b) Use examples for them to understand the concept of cell structure, organisation and systems. c) Discuss the importance of division of labour in multicellular	a) Observation of pupils' responses about cell structure, organisation and systems. b) Oral presentations about cell structure, organisation and systems. c)Group discussions on the importance of division of labour in multicellular organisms. d) State examples of systems to	a) Textbook b) Charts and pictures about cell structure, organisation and systems c) Vanguards d) Markers e) Sharpeners f) Erasers

	basis of observable external characteristics. • List examples of some systems to explain the concept of importance of cellular organisation. • Identify and draw simple structures of plant and animal cells by microscopic and photographic study. • State the functions of cell wall, cell membrane, cytoplasm, nucleus, vacuole, chloroplast, mitochondrion and ribosome. • Tabulate the similarities and differences between plant and animal cells. • Recognise the relationship between structure and function of specialized cells, root hairs, xylem vessel, phloem, red and white blood cells.	organisms. d) Let pupils give examples of systems to explain the concept of importance of cellular organisation. e) Let pupils draw simple cell structures of plant and animal cells. f) Let pupils discuss the functions of cell organelles such as cell wall, cell membrane, cytoplasm, nucleus, vacuole, chloroplast, mitochondrion and ribosomes. g) Pupils tabulate similarities and differences between plant and animal cells. h) Pupils in small groups discuss the relationship between structure and function of specialized cells, root hairs, xylem vessel, phloem, red and white blood cells.	explain the concept of importance of cellular organisation. e) Observation of pupils' drawings of plant and animal cells. f) State the function of each of the following organelles: Cell wall Cell membrane Nucleus Cytoplasm Vacuole Chloroplast Mitochondrion Ribosome g) Tabulate similarities and differences between plant and animal cells. h) Group discussions on relationship between structure and function of specialised cells, root hairs, xylem vessel, phloem, red and white blood cells.	g) Pencils h) Microscope i) Microscope slides j) Petri dishes k) Hand lenses
Theme 3: Chemical Reactions **Unit 1: Atoms and Molecules**	After completing this unit, pupils should be able to: • Define the terms atom and molecule. • Identify atoms and molecules from the charts. • State examples of atoms and molecules. • Illustrate how atoms combine together to form molecules.	a) Introduce the lesson by displaying charts to show atoms and molecules. b) Let pupils define the terms atom and molecule. b) Allow pupils to identify atoms and molecules and state examples of atoms and molecules. c) Let pupils illustrate how atoms combine together to form molecules.	a) Observation of pupils' responses about atoms and molecules. b) Oral presentations about atoms and molecules. c)Observation of pupils' illustrations of atoms combining to form molecules	a) Textbook a) Charts and pictures about atoms and molecules b) Vanguards c) Markers d) Sharpeners e) Erasers f) Pencils g) Plastercene h) Models
Unit 2: Elements, mixtures and compounds	After completing this unit, pupils should be able to: • Define the terms, element, ion, cation, anion, mixture and compound.	a) Introduce the lesson by displaying charts and asking pupils to define the terms, element, ion, cation, anion,	a) Observation of pupils' responses about elements, mixtures and compounds. b) Oral presentations about	a) Textbook b) Charts and pictures about elements, mixtures

	• Identify selected elements, mixtures and compounds from a given list of substances. • Explain that atoms of elements are the building blocks of matter.	mixture and compound. b) Allow pupils to identify selected elements, mixtures and compounds from a given list of substances. c) Let pupils discuss in small groups that atoms elements are the building blocks of matter.	elements, mixtures and compounds. c)Group discussions on atoms of elements as the building blocks of matter.	and compounds c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Models of atoms
Unit 3: Properties of Mixtures and Compounds	After completing this unit, pupils should be able to: • Identify mixtures and compounds. • Give examples of mixtures and compounds • Describe the properties of mixtures and compounds. • Tabulate the differences between mixtures and compounds.	a) Introduce the lesson by displaying charts and asking pupils to identify some mixtures and compounds. b) Pupils provide a list of some mixtures and compounds. c) Let pupils discuss in small groups the properties of mixtures and compounds. d) Allow pupils to tabulate the differences between mixtures and compounds.	a) Observation of pupils' responses about mixtures and compounds. b) Oral presentations about mixtures and compounds. c) State some examples of mixtures and compounds d)Group discussions on properties of mixtures and compounds. e) Tabulate differences between mixtures and compounds.	a) Textbook, b) Charts and pictures of mixtures and compounds c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Cold water i) Sulphur j) Bar magnet k) Sugar and salt l) Rice and stones m) Calcium oxide
Unit 4: Physical and Chemical Changes	After completing this unit, pupils should be able to: • Define the terms physical and chemical changes. • Give examples of physical and chemical changes. • Discuss differences between physical and chemical changes. • Demonstrate some processes that are classified as physical and chemical changes.	a) Introduce the lesson by displaying charts and asking pupils to define the terms physical and chemical changes. b) Pupils provide a list of some physical and chemical changes. c) Let pupils discuss in small groups the differences between physical and chemical changes. d) Let pupils demonstrate some processes that are either termed as physical and chemical changes.	a) Observation of pupils' responses about physical and chemical changes. b) Oral presentations about physical and chemical changes. c) State some examples of physical and chemical changes. d)Group discussions on differences between physical and chemical changes. e) Observe some demonstrations on physical and chemical changes.	a) Textbook b) Charts and pictures about some processes that involve physical and chemical changes Vanguards, Markers Sharpeners, Erasers Pencils, Cold water Iron filings & sulphur Paper, Wood or board Milk, Totapak Heat source or Bunsen burner, Iron, Sugar Salt, Water, Camphor,

				Ice block
Unit 5: Elements from the Periodic Table	After completing this unit, pupils should be able to: • Describe the arrangement of elements in the Periodic Table. • Give examples of elements from the Periodic Table that combine to form mixtures and compounds. • Discuss the properties of elements in Groups and Periods in the Periodic Table. • Draw a simplified Periodic Table	a) Introduce the lesson by displaying chart depicting the Periodic Table and ask pupils to describe in small groups the way elements are arranged. b) Pupils provide a list of some elements from the Periodic Table that combine to form mixtures and compounds. c) Let pupils discuss in small groups briefly the properties of elements in Groups and Periods in the Periodic Table. d) Give a project to pupils to draw a simplified Periodic Table and submit it after one week for the award of marks.	a) Observation of pupils' responses about elements from the Periodic Table. b) Oral presentations about the Periodic Table. c) State some examples of elements from the Periodic Table that combine to form mixtures and compounds. d)Group discussions on the properties of elements in Groups and Periods in the Periodic Table. e) Observation of pupils' drawings of the Periodic Table.	a) Textbook b) Charts and pictures of some elements in the periodic table c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Periodic Table
Unit 6: Separation Techniques of Mixtures by Physical Means	After completing this unit, pupils should be able to: • State and describe separation techniques of mixtures by physical means. • Demonstrate separation techniques of mixtures by physical means. • Use appropriate techniques for separating constituents of mixtures by physical means (e.g. filtration, evaporation, crystallization, chromatography, distillation, etc.). • Note the application of techniques of separation in industries.	a) Introduce the lesson by displaying charts showing separation techniques of mixtures by physical means. b) Let pupils in small groups state and describe various separation techniques by physical means. c) Allow pupils to draw labelled diagrams of the various separation techniques discussed above. d) Let pupils demonstrate separation techniques of mixtures by physical means. d) Give a project to pupils to explain the application of separation techniques in industries and submit it after one week for the award of marks.	a) Observation of pupils' responses about separation techniques of mixtures by physical means. b) Oral presentations about separation techniques of mixtures by physical means. c) Observation of pupils' demonstrations of separation techniques of mixtures by physical means. d) Observation of pupils' drawings separation techniques by physical means. e) Group discussions on application of techniques of separation in industries.	a) Textbook b) Charts and pictures of separation techniques of mixtures by physical means. Vanguards, Markers, Sharpeners Erasers, Pencils Fanner, Big bowl Piece of clean white cloth Heat source or Bunsen burner Soil, Water Starch grains Syrups, Beaker Tripod stand Filter funnel, Sand, bath, Water bath Filter paper, Ammonium chloride

				and sodium chloride Camphor, Iron filings Sulphur, Nails
Theme 4: Energy **Unit 1: Definition, S.I unit, Types, Forms and Sources of Energy**	After completing this unit, pupils should be able to: • Define the term energy. • State the S.I unit of energy. • List the types of energy. • State the various forms of energy. • Identify various sources of energy. • List some of the energy sources in Sierra Leone and the need for their conversion. • Demonstrate potential energy in springs, pendulums and masses at a height above ground. • Discuss the importance of nuclear energy.	a) Introduce the lesson by displaying charts about energy and ask pupils to define energy and state its S.I unit. b) Let pupils list the types, forms and sources of energy. c) Allow pupils to list some sources of energy in Sierra Leone and discuss why they need to be converted into other uses. d) Let pupils demonstrate potential energy in springs, pendulums different masses at heights above ground. d) Pupils in small groups discuss the importance of nuclear energy.	a) Observation of pupils' responses about definition, S.I unit, types, forms and sources of energy. b) Oral presentations about definition, S.I unit, types, forms and sources of energy. • c) Observation of pupils' demonstrations of potential energy in springs, pendulums and masses at a height above ground. d) Observation of pupils' drawings separation techniques by physical means. e) Group discussions on the importance of nuclear energy.	a) Textbook b) Charts and pictures about energy c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Spring balance i) Simple pendulums j) Assorted masses
Unit 2: Transformation of Energy	After completing this unit, pupils should be able to: • Identify energy transformation in everyday application. • Illustrate different types of energy transformations. • State that energy is required to lift a load of force 1N through a vertical distance of 1m.	a) Introduce the lesson by displaying charts about transformation of energy. b) Let pupils identify energy transformation in everyday application. c) Allow pupils to illustrate different types of energy transformations. d) Pupils demonstrate potential energy in springs, pendulums different masses at heights above ground. d) Pupils in small groups discuss how force and energy are related.	a) Observation of pupils' responses about transformation of energy. b) Oral presentations about transformation of energy. c) Observation of pupils' illustration of different types of energy transformations. d) Observation of pupils' drawings separation techniques by physical means. e) Group discussions on the relationship between force and energy.	a) Textbook b) Charts and pictures about transformation of energy Vanguards, Markers Sharpeners, Erasers Pencils, Light bulb Radio, Empty tins Water, Strip of paper,Stop watch, Torch light Thermometer Lime,Beaker Bunsen burner s) Tripod stand
Unit 3: Conservation of Energy	After completing this unit, pupils should be able to: • Give examples of energy conservation. • State the Law of Conservation of Energy.	a) Introduce the lesson by displaying charts about conservation of energy. b) Let pupils provide a list of examples of energy conservation.	a) Observation of pupils' responses about conservation of energy. b) Oral presentations about conservation of energy. c) Observation of pupils'	a) Textbook b) Charts and pictures about conservation of energy c) Vanguards d) Markers

	• Demonstrate conservation of energy with energy converters. • Discuss the conversion of energy in simple systems like an electric lamp, hydroelectric plant and a free falling body. • State the uses of energy	c) Allow pupils to state the Law of Conservation of Energy. d) Pupils demonstrate conservation of energy with energy converters. d) Pupils in small groups discuss conversion of energy in simple systems like an electric lamp, hydroelectric plant and a free falling body. e) Let pupils list down the uses of energy.	demonstration of conservation of energy with energy converters. d) Group discussions on the conversion of energy in simple systems like an electric lamp, hydroelectric plant and a free falling body. e) State five uses of energy.	e) Sharpeners f) Erasers g) Pencils h) Electric lamp i) Free falling bodies (stone, metal, pendulum bob, etc.)
Unit 4: Energy Storage	After completing this unit, pupils should be able to: • Define the term energy storage. • State the types of energy storage. • Explain some examples of stored energy. • Discuss various ways energy is stored. • Explain the most efficient energy storage. • Discuss how energy storage can be converted.	a) Introduce the lesson by displaying charts about energy storage. b) Let pupils brainstorm and then define energy storage. c) Let pupils state the types of energy storage and explain some examples of stored energy. d) Pupils in small groups discuss ways of storing energy, the most efficient energy storage and how energy storage can be converted.	a) Observation of pupils' responses about energy storage. b) Oral presentations about energy storage. c) Group discussions on ways of storing energy, the most efficient energy storage and how energy storage can be converted.	a) Textbook b) Charts and pictures about energy storage c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Large cork i) Piece of glass tube j) Armature insulated wire k) Rubber rings l) Contact brushes
Theme 5: Machines (including how Things Work) Unit 1: Definition and Types of Machines	After completing this unit, pupils should be able to: • Identify types of machines. • Define the term machines. • Give examples of simple machines in everyday life. • Classify machines into different groups. • State the uses of machines.	a) Introduce the lesson by displaying charts about machines. b) Let pupils define the term machines c) Allow pupils to identify different types of machines in the charts. d) Pupils classify machines into different groups. d) Pupils provide a list of uses of machines.	a) Observation of pupils' responses about machines. b) Oral presentations about machines. c) Classify machines into different groups. d) State the uses of machines.	a) Textbook b) Charts and pictures about simple machines c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Hammer i) Pair of scissors j) Bottle opener k) Pliers l) Crow bar m) Pincers o) Nut cracker p) Pliers
Unit 2: Force	After completing this unit, pupils should be	a) Introduce the lesson by	a) Observation of pupils' responses	a) Textbook

	able to: • Define the term force. • List the types or forms of forces. • Explain what forces do.	displaying charts about forces and asking pupils to brainstorm and define the term force. b) Let pupils list down the types or forms of forces. c) Allow pupils discuss in small groups the uses of forces.	about forces. b) Oral presentations about forces. c) List down the types or forms of forces. d) Group discussions on the uses of forces.	b) Charts and pictures about forces c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Theme 6: Basic Ideas about Electricity **Unit 1: Electric current**	After completing this unit, pupils should be able to: • Define the term electricity. • Explain that a cell makes the electrons to flow in one direction (conventional direction). • Describe and illustrate a simple model of an atom.	a) Introduce the lesson by displaying charts about electric current and ask pupils to define the term electricity. b) Let pupils in small groups explain how electric current flows. c) Allow pupils to describe and illustrate a simple model of an atom.	a) Observation of pupils' responses about electric current. b) Oral presentations about electric current. c) Group discussions on flow of electric current and model of an atom. d) Observation of pupils' illustration of a model of an atom.	a) Textbook b) Charts and pictures of basic ideas about current electricity c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Beads i) Plastercene
Unit 2: Simple Electrical Circuits	After completing this unit, pupils should be able to: • State that cell drives electrons around a complete circuit in one direction. • Differentiate between an open and close circuit. • Set up simple circuits in series and parallel. • Read simple circuits • Identify symbols of simple electrical components such as switch, resistor, cells, lamp, ammeter, voltmeter.	a) Introduce the lesson by displaying charts about simple electrical circuits b) Allow pupils to explain how electrons go round a complete circuit. c) Guide pupils to set up simple circuits in series and parallel. d) Let pupils follow necessary instructions to read simple circuits correctly. e) Let pupils identify symbols of electrical components.	a) Observation of pupils' responses about simple electrical circuits. b) Oral presentations about simple electrical circuits. c) State the difference between open and close circuits. d) Observation of pupils' set ups of simple circuits in series and parallel, their correct readings and identification of simple electrical components.	a) Textbook b) Charts and pictures about simple electrical circuits c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Switch i) Resistors j) Cells k) Lamps l) Ammeter m) Voltmeter
Unit 3: Use of Ammeters and Voltmeters	After completing this unit, pupils should be able to: • Connect ammeters and voltmeters correctly to a circuit. • Take correct readings of ammeters and	a) Introduce the lesson by demonstrating to pupils how to connect ammeters and voltmeters correctly to a circuit. b) Guide pupils how to connect	a) Observation of pupils' correct connections of ammeters and voltmeters. b) Oral presentations about ammeter and voltmeter readings.	a) Textbook b) Charts and pictures about ammeters and voltmeters

	voltmeters. • Properly interpret the readings of ammeters and voltmeters. • Recognise how two resistors in series can be used as a divider for a voltage source.	ammeters and voltmeters correctly to a circuit. c) Let pupils take correct readings of ammeters and voltmeters. d) Let pupils correctly interpret readings of ammeters and voltmeters. e) Allow pupils to discover that two resistors connected in series can be used as a divider for a voltage source.	c) Oral presentations on interpretation of readings from ammeters and voltmeters. d) Group discussions on how two resistors can be connected in series can be used as a divider for a voltage source.	c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Switch i) Resistors j) Cells k) Lamps l) Ammeter m) Voltmeter o) Simple electrical circuits
Theme 7: Ecology and Conservation **Unit 1: Basic Concepts in Ecology and Conservation**	After completing this unit, pupils should be able to: • Define and explain the meaning of each of the following basic concepts: Ecology, Habitat, Population, Community, Ecosystems, Biome, Food chain, Food web, Prey, Predator, Adaptation or Survival, Recycling, Biotic factors, Abiotic factors, Conservation, Resources, Degradation, Decomposition, Greenhouse Effects, Global Warming, Climate change	a) Introduce the lesson by displaying charts and pictures about ecology and conservation. b) Let pupils brainstorm and come up with definition and meaning of basic terms associated with ecology and conservation.	a) Observation of pupils' responses about definitions and meanings of basic terms associated with ecology and conservation. b) Oral presentations about definitions and meanings of basic terms associated with ecology and conservation. c) Small group discussions on definitions and meanings of basic terms associated with ecology and conservation.	a) Textbook b) Charts and pictures about ecology c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Unit 2: Interdependence in Nature	After completing this unit, pupils should be able to: • Explain the relationships between organisms in specific environments e.g. school field, garden. • Illustrate relationships between organisms in specific environments. • Give examples of relationships between organisms in specific environments.	a) Introduce the lesson by displaying charts about interdependence in nature. b) Let pupils in small groups explain the relationships between organisms in specific environments. c) Let pupils illustrate relationships between organisms in specific environments c) Allow pupils to state examples	a) Observation of pupils' responses about interdependence in nature. b) Oral presentations about interdependence in nature. c) Observation of pupils' illustrations of relationships between organisms in specific environments d) State examples of relationships between organisms in specific environments.	a) Textbook b) Charts and pictures about interdependence of living organisms c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils

		of relationships between organisms in specific environments.		
Unit 3: Effects of Human Activities on the Environment	After completing this unit, pupils should be able to: • State effects of human activities on the environment. • Explain how human activities affect the environment. • Discuss the effects of human activities on the environment such as bush fires, tree cutting for firewood, charcoal burning, sand winning, mining, garbage, etc.	a) Introduce the lesson by displaying charts or pictures about effects of human activities on the environment. b) Allow pupils to state and explain the effects of human activities on the environment. c) Let pupils in small groups discuss effects of human activities on the environment.	a) Observation of pupils' responses about effects of human activities on the environment. b) Oral presentations about effects of human activities on the environment. c) State and explain the effects of human activities on the environment. d) Group discussions on the effects of human activities on the environment.	a) Textbook b) Charts and pictures about some effects of human activities on the environment c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Unit 3: Soil	After completing this unit, pupils should be able to: • Define the term soil. • State the types of soil. • Describe the types of soil. • List the properties of each type of soil. • State that the soil is a natural habitat for living organisms. • Explain how soil is formed. • Discuss ways by means of which the soil loses and gain its fertility. • Define the term soil erosion. • State the types of soil erosion. • Explain the causes and effects of soil erosion. • List ways in which soil erosion can be prevented. • Discuss ways in which soil can be conserved.	a) Introduce the lesson by displaying charts or pictures about soil. b) Allow pupils to define and state the types of soil. c) Let pupils in small groups describe and list the properties of soil. d) Let pupils explain the process of soil formation. e) Let pupils in small groups ways of losing and gaining soil fertility. f) Let pupils in small groups discuss about meaning, types, causes, effects and ways of preventing and conserving soil.	a) Observation of pupils' responses about soil and soil erosion. b) Oral presentations about soil and soil erosion. c) State and explain the types and properties of soil. d) Let pupils describe each type of soil and state with reason the type of soil good for agricultural activities. e) Group discussions on soil formation and ways of losing and gaining fertility. f) Let pupils discuss about soil erosion, with emphasis on causes, effects, prevention and conservation.	a) Textbook b) Charts and pictures about the soil c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Theme 8: Life Cycles of	After completing this unit, pupils should be able to:	a) Introduce the lesson by displaying charts or pictures	a) Observation of pupils' responses about life cycles of selected plants	a) Textbook b) Charts and

Selected Plants and Animals	• Explain the meaning of the term life cycle. • Identify life cycles of selected plants and animals. • Draw life cycles of selected plants and animals. •Describe life cycles of selected plants and animals (mammal, bird, insect, example of plant grown from seeds and also grown from stems).	different life cycles of plants and animals. b) Let pupils identify the life cycles of selected plants and animals. c) Allow pupils to draw and describe the life cycles of selected plants and animals (mammal, bird, insect, example of plant grown from seeds and also grown from stems).	and animals. b) Oral presentations about life cycles of selected plants and animals. c) Group discussions on the life cycles of selected plants and animals.	pictures the life cycles of selected plants and animals c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Theme 9: Organs and Systems **Unit 1: Digestive, Circulatory and Respiratory Systems**	After completing this unit, pupils should be able to: • Identify the main organs of the digestive, circulatory and respiratory systems. • List the main organs of the digestive, circulatory and respiratory systems. • Draw and diagrams of the digestive, circulatory and respiratory systems. • Describe the digestive, circulatory and respiratory systems •State the functions of the main organs of the digestive, circulatory and respiratory systems.	a) Introduce the lesson by displaying charts or pictures about digestive, circulatory and respiratory systems b) Let pupils identify the main organs of the digestive, circulatory and respiratory systems. c) Let pupils list the main organs of the digestive, circulatory and respiratory systems. d) Allow pupils to draw labelled diagrams of the digestive, circulatory and respiratory systems. d) Let pupils state the functions of the main organs of the digestive, circulatory and respiratory systems.	a) Observation of pupils' responses about life cycles of selected plants and animals. b) Oral presentations about life cycles of selected plants and animals. c) Group discussions on the digestive, circulatory and respiratory systems. d) Observation of pupils' drawings of the digestive, circulatory and respiratory systems. d) State the functions of the main organs of the digestive, circulatory and respiratory systems	a) Textbook b) Charts and pictures of digestive, circulatory and respiratory systems. c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Unit 2: Reproduction in Plants and Animals	After completing this unit, pupils should be able to: • Identify the reproductive organs in plants and animals. • List the reproductive organs in plants and animals. • State the functions of reproductive organs in plants and animals.	a) Introduce the lesson by displaying charts about reproductive organs in plants and animals. b) Let pupils identify the reproductive organs in plants and animals. c) Guide pupils to draw labelled	a) Observation of pupils' responses about reproductive organs in plants and animals. b) Oral presentations about reproductive organs in plants and animals. c) List the reproductive organs in plants and animals.	a) Textbook b) Charts and pictures of reproduction in plants and animals c) Vanguards d) Markers e) Sharpeners

	• Draw and label reproductive organs in plants and animals. • Describe the reproductive organs in plants and animals.	diagrams of reproductive organs in plants and animals. d) Let pupils state the functions of reproductive organs in plants and animals. e) Pupils in small groups describe the reproductive organs in plants and animals.	d) Observation of pupils' labelled diagrams of reproductive organs in plants and animals. e) Group discussions on reproductive organs in plants and animals.	f) Erasers g) Pencils
Theme 10: Personal Hygiene **Unit 1: Hand Hygiene**	After completing this unit, pupils should be able to: • Explain what is meant by the term hygiene. • List the different methods of hand hygiene. • State the equipment needed to perform hand hygiene. • Outline general principles in hand hygiene. • State standard precautions in hand hygiene. • Discuss why we should perform hand hygiene. • Demonstrate correct hand hygiene technique.	a) Introduce the lesson by displaying charts or pictures about hand hygiene. Invite health personnel for a talk on the topic. b) Let pupils brainstorm and come up meaning of the term hand hygiene. c) Pupils provide a list of equipment needed to perform hand hygiene. d) Let pupils demonstrate the correct way of performing hand hygiene. e) Pupils in small groups discuss why we should perform hand hygiene.	a) Observation of pupils' responses about hand hygiene. b) Oral presentations about hand hygiene. c) List the different methods of hand hygiene. d) Outline the general principles and state standard precautions in hand hygiene standard precautions in hand hygiene. e) Group discussions on why we should perform hand hygiene.	a) Textbook b) Charts and pictures about hand hygiene c) Health Personnel c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Veronica buckets i) Soap (liquid or bar) j) Clean towels k) Alcohol – based hand rub or sanitizer (at least 70% alcohol)
Unit 2: Cleaning of other Body Parts	After completing this unit, pupils should be able to: • Explain the need for cleaning the teeth. • Demonstrate the proper way to clean the teeth. • Explain the need for cleaning the teeth. • Demonstrate the proper way of bathing the body, include reference to genital hygiene for boys and girls • Explain the need for keeping the finger nails short and clean. • Demonstrate the proper way to keep the	a) Introduce the lesson by displaying charts or pictures about how to clean parts of the body. Invite health personnel for a talk on the topic. b) Let pupils discuss need for cleaning the teeth. c) Pupils demonstrate proper way to brush the teeth. d) Let pupils discuss the need for bathing. e) Pupils demonstrate proper way of bathing.	a) Observation of pupils' responses about taking good care of body parts. b) Oral presentations about taking good care of body parts. c) Observation of pupils' demonstrations of cleaning other body parts. e) Group discussions on need of taking good care of body parts, clothes and underwear. f) Briefly explain how different parts of our body, clothes and	a) Textbook b) Charts and pictures about cleaning of other body parts c) Health Personnel c) Vanguards d) Markers e) Toothbrush f) Soap g) Water h) Clean towels

	finger nails short and clean. • Explain the need for taking good care of the hair. • Demonstrate the proper way of taking good care of the hair. • Explain the need for washing clothes and under wears.	f) Let pupils discuss the need for keeping the finger nails short and clean. g) Pupils demonstrate ways for keeping the finger nails short and clean. h) Let pupils discuss the need for taking good care of the hair. i) Pupils demonstrate proper way for taking good care of the hair. j) Pupils in small groups discuss the need for washing clothes and under wears. k) Pupils describe how to clean the genital areas	underwear can be cleaned.	i) Bowls or medium containers j) Nail cutters k) Comb l) Buckets m) Rubbing boards

Unit 5: Gender – based Violence (GBV)	After completing this unit, pupils should be able to: Define Gender – based Violence (GBV). Provide examples of Gender - based Violence (GBV) Identify causes of Gender - based Violence (GBV) State the signs of Gender - based Violence (GBV).	Refer to previous work on human and children's rights, gender inequality, bullying and harassment Define gender based violence and give examples from across the spectrum of such behaviour Ask pupils to identify what they think causes Gender - based Violence (GBV) How might you recognize someone affected by GBV?	a) Observation of pupils' responses about Gender – based Violence (GBV). b) Oral presentations about Gender – based Violence (GBV). c) Group discussions about the causes of Gender - based Violence (GBV). d) State some examples of Gender - based Violence (GBV). e) List the signs of Gender - based Violence (GBV).	a) Textbook b) Charts and pictures about Gender - based Violence (GBV). c) Gender - based Violence (GBV) specialist. d) Vanguards e) Markers f) Sharpeners g) Erasers External speaker e.g. staff or volunteers from women's and children's shelter

Theme: Reproduction, Sexuality and Health **Unit 1:**	Identify common indications of pregnancy Explain how to confirm a pregnancy Describe the key stages of pregnancy	Introduce the subject by asking how does someone know when they are pregnant? Discuss how to confirm a pregnancy	Invite pregnant women and their partners to come and talk about their experiences of pregnancy, birth and parenting Prepare a quiz to test knowledge	Our Future: reference material: 86-8 pregnancy p. 91 Signs of pregnancy

Pregnancy & Birth	Describe what happens during birth and after Identify health risks associated with early pregnancy Specify adverse social consequences of early pregnancy or too many pregnancies too close together	Describe the key stages of pregnancy Explain what happens during birth and after Discuss health risks associated with early pregnancy Discuss adverse social consequences of early pregnancy or too many pregnancies too close together	Activities (p.89-90) The story of Sara and Vincent Filling the gaps Activities (p.95-8) Discussing pictures Group discussion Crossword puzzle	p.93-4 Unsafe & unwanted pregnancies
Unit 2: **Having children**	Appreciate that children should be wanted, need to be cared and provided for, and loved Articulate reasons women may not wish to be pregnant Appreciate that pregnancy can be planned Acknowledge that not all people can or want to have children Articulate the law on abortion in Sierra Leone and the health issues which might arise from unsafe abortion	Lead a discussion or brainstorm on what babies and children need to be able to thrive Ask pupils – at what age/life-stage do you think people can provide these and hence begin child-bearing Differentiate between safe and unsafe abortion and discuss their respective implications. Discuss when a medical abortion can be carried out.	Observation of discussion Activities (Grade 8-9) p.105 Role plays Filling in the blanks Activity (Grade 6) p.83 Story of Mzamose & Mangani Activity (Grade 8-9)p.101-2 Story of Nzaliwe & Kanthonondo Story of Yohane & Thandi	Our Future: Reference material p.98 Infertility Our Future (grade 8-9) Resource material: p.103-4 Our Future (Grade6-7) Reference material p.81-2) Unsafe and unwanted pregnancy Our Future Grade 8-9) Reference material p.100
Unit 3: **Contraception**	Distinguish between modern and traditional forms of contraception Describe how the different available methods of contraception prevent pregnancy Explain the purpose and mechanism of emergency contraception Recognise that condoms can prevent both pregnancy and sexually transmitted infections	Explain that there are a variety of methods of contraception – some traditional, others modern, some temporary and others permanent – not all methods are equally effective	Activities (p.94-6) Reading and discussion Maps and role-plays Madalito's story	Our Future (grade 6) Reference material p.77 Preventing pregnancy + Our Future (Grade 8-9) p.87-93

	Demonstrate the correct use of both male and female condoms Respond constructively to objections to contraception (including misinformation)			

INTEGRATED SCIENCE
OUTLINE TEACHING SYLLABUS FOR THE THIRD STAGE OF BASIC EDUCATION (JSS 2)

Suggested Topics/Themes/Units	Specific Learning Outcomes	Recommended Teaching Styles or Pedagogical Approaches	Assessment Methods	Suggested Teaching and Learning Resources
THEME 1: Matter **Unit 1:Water and Solutions**	After completing this unit, pupils should be able to: • State the three states of water and their properties. • Demonstrate knowledge of the water cycle. • State the differences between evaporation and boiling. • Demonstrate that solids and gases dissolve in water. • State the effect of temperature on solubility. • Explain the importance of water to aquatic life, water and solutions.	a) Introduce the lesson by questioning pupils on the three states in which water exists. b) Let pupils explains the processes involved in the water cycle. c) Guide pupils to boils water in a beaker to explain evaporation and boiling. d) Pupils in groups dissolve different substances in water and repeat the process with hot water. e) Let pupils explain the terms, solute, solvent and solution f) Ask pupils to state the importance of water to aquatic life e.g. source of oxygen understand the term density. g) Pupils explain sinking and floating in terms of density.	a) Observation of pupils' responses about water and solutions. b) Oral presentations about water and solutions. c) Observation of pupils labelled drawings of the water cycle. d) Pupils in groups do an experiment on solubility with different substances and record their results. e) Pupils put different substances in water and find out those that will sink, and those that will float.	Water Ice block Heat source Pictures and charts showing the water cycle. Salt,Sugar Copper sulphate crystals Sodium hydroxide pellets Oil, water, ice Sand Sawdust Beaker A piece of wood Granite Orange. Vanguards Markers Pencils Erasers Sharpeners
Unit 2: Water Purification and Conservation	After completing this unit, pupils should be able to: • Explain how water can be purified for drinking in the home. • Show awareness of water distribution in Sierra Leone.	a) Brainstorming by pupils about various methods of water purification. b) Guide pupils do a demonstration of distillation. c) Let pupils discuss why we need to conserve water and the	a) Observation of pupils' responses about water purification and conservation. b) Oral presentations about water purification and conservation.	Chlorine filter paper or clean cloth Water filter Heat source Visit to Guma Dam.

	• Show awareness of the need to save water. • State ways by which we can conserve water in our homes.	consequences of not conserving water. d) Pupils describe about cutting of pipes, turning off taps when not in use and protecting water sources.	c) Pupils write a report on the visit to Guma. d) Pupils carry out a simple experiment of filtration of dirty waters state their observations. e) Pupils find out where we have other dams in Sierra Leone. Chemicals are added to the water to purify it. Pupils write down some consequences of not conserving water.	Salwaco, Congo Dam
THEME 2: Chemical Reactions **Unit 1: Acids and Alkalis**	After completing this theme, pupils should be able to: • Explain the terms acid and alkalis. • State the properties of acids. • State the properties of alkalis. • List some chemicals that dissolves in water to produce acids. • List some chemicals that dissolve to form alkalis • Test for acids and alkalis.	a) Start the lesson by asking pupils to explain the two terms acids and alkalis. b) Let pupils state everyday substances that have acids or bases e.g. lime juice, vinegar, wood ash, soap, beet or palm wine. c) Let pupils list these substances with red and blue litmus papers. d) Now introduce the properties of acids and alkalis. Pupils mention some common acids in the laboratory e.g. hydrochloric acid, nitric and sulphuric acids. e) Sulphur trioxide, carbon dioxide dissolve in water to form acids	a) Observation of pupils' responses about acids and alkalis. b) Oral presentations about acids and alkalis. c) Observation of pupils' demonstrations of chemicals that dissolves in water to produce acids and alkalis. d) Observation of pupils test the following with red and blue litmus, lime juice, vinegar, wood ash, soap, bicarbonate of soda.	Litmus paper Water Lime juice Vinegar Grape juice Wood ash Soap Bicarbonate of soda.
THEME 3: Energy **Unit 1: Heat and Temperature**	After completing this unit, pupils should be able to; • Differentiate between heat and temperature. • List some sources of heat. • Name some good and bad conductors of heat. • Discuss the effect of heat and its	a) Let pupils brainstorm and define the term energy. b) Pupils explain the differences between heat and temperature. c) Pupils demonstrate about heat and temperature: heat ice block in a beaker and record the temperature after every 2 minutes. d) Ask pupils to name some sources	a) Observation of pupils' responses about heat and temperature. b) Oral presentations about heat and temperature. c) Group discussions on the effect of heat and its applications.	Thermometer Electric iron Coal pot Matches Rubbers Clothes, Metals Tables

	applications. • List the applications of expansion and contraction of solids, liquids, and gases. • State receptors of heat in the skin.	of heat. e) Let pupils heat substances like sugar, water, ice, candle wax. f) Guide pupils to do the ball and ring experiment and list some ways expansion and contraction are used e.g. in can drinks, metal bridges, electric cables oil pipe. g) Let pupils draw a labelled diagram of the human skin showing the receptors.	d) Pupils comment on changes in the ice block and temperature in the beaker. e) From a list of streets, pupils select good and bad conductors of heat from a given list f) Pupils research on other expansion and contraction applications and report. g) Pupils observe the sensory receptors on the diagram of the skin	Diagram of the skin to show the nerves Vanguards Markers Pencils Erasers Sharpeners
Unit 2: Methods of Heat Transfer	After completing this unit, pupils should be able to; • Explain the terms – conduction, convection and radiation. • Demonstrate simple experiments on conduction, convection and radiation.	c) Introduce the lesson by asking pupils to brainstorm and explain the meaning of the terms conduction, convection and radiation. d) Guide pupils to discuss heat transfer in everyday life e.g. land and sea breezes, air conditioners, etc. e) Let pupils demonstrate experiments to show conduction, convention and radiation. f) Guide pupils using a diagram of the thermos flask to explain how it works.	a) Observation of pupils' responses about methods of heat transfer. b) Oral presentations about methods of heat transfer. c) Observation of pupils' demonstrations of methods of heat transfer: conduction, convection and radiation. d) Observation of pupils labelled drawing of a thermos flask.	Metal spoon Water Heat source Candle Drawing pins Ruler Clamp with stand Diagram of a thermos flask Vanguards Markers Pencils Erasers Sharpeners
THEME 4: Forces **Unit 1: Types of Forces**	After completing this unit, pupil should be able to; • Explain the term force • State the different types of forces • Demonstrate the effect of force on objects • Measure force using a spring balance	Introduce the lesson by asking pupils to carry out the following activities: - Throw pieces of paper up in the air and observe them fall. - Put a small stone on a catapult, stretch the catapult and release the stone. - Get a pupil to walk with and without shoes in the classroom. - Hold a magnet over iron filings. - Use a plastic comb to comb the	a) Observation of pupils' responses about types of forces. b) Oral presentations about types of forces. c) Observation of pupils' demonstrations of types of forces and record their findings. d) Pupils try to measure force	Pieces of chalk or folded paper Catapult Our feet Classroom floor Two bar magnets String Plastic comb Iron filings Pot scrub, Aluminium pot

		hair. - Use a pot scrub and rub an aluminum pot.	using a spring balance with the help of the teacher.	Spring balance Small box of sand
Unit 2: Friction	After completing this unit, pupils should be able to: • Define the term friction. • State the effects of friction. • List the advantages and disadvantages of friction. • Describe the role of lubricants in friction. • Carry out experiment to show the effects of force.	a) Introduces the lesson by asking pupils to brainstorm and define the term friction. b) Guides pupils to carry out the following practical activities: - Rubbing the hands together. - Observe someone who sharpens knife, on a stone. - Observe a new and old shoes. - Rubbing pot scrubs on an aluminum pot. Teacher guide pupils to mention advantages and disadvantages of friction - Blow a balloon and sweeze it. Ask pupils to observe the shape. - Use the foot to stop a moving football or to change its direction. - Observe what happens to the size of a ball of foofoo as it is squeezed.	a) Observation of pupils' responses about friction. b) Oral presentations about friction. c) Group discussions on effects of friction and the role of lubricants in friction. d) Observation of pupils' demonstrations on effects of friction. e) State the advantages and disadvantages of friction.	Hands Granite stone Knife Old and new shoes A blackened pot Pot scrub Balloon Toy car Football Foo-foo ball
THEME 5: Life Processes and Interactions **Unit 1: Animal nutrition, Food and Dentition**	After completing this unit, pupils should be able to: • State the importance of food. • List and explain the different classes of food and their importance • Carry out simple tests for starch, sugar, protein and fat. • State the structure and functions of the teeth and the importance of dental care. • Describe a balanced diet and its importance.	a) Start the lesson with questions e.g. - What did you have for lunch today? - What happens when you do not eat? - Why do you think you need to digest your food? b) Let pupils carry out simple tests for starch, sugar, protein and fat. c) Let pupils describe the role of the teeth play in digestion. d) Let pupils describe a balanced diet and its importance. e) Let pupils draw a labelled diagram of a mammalian tooth.	a) Observation of pupils' responses about animal nutrition, food and dentition. b) Oral presentations about animal nutrition, food and dentition. c) Group discussions on classes of food and their importance; structure and functions of the teeth and the importance of dental care and a balanced diet and its importance. d) Observation of pupils' simple tests for starch, sugar, protein and fat. e) Observation of pupils labelled diagram of a mammalian tooth.	Different types of food: rice, bread, milk, eggs, fish, fruits, Charts and pictures of starch, bread, milk, fish, butter, Fehling's, solutions Biuret reagent model of the tooth.

Unit 2: Digestion and Assimilation	After completing this unit, pupils should be able to: • State why food should be digested. • Define the term digestion. • Describe how the digestive system helps in the digestion of food. • Draw and label the digestive system. • Explain the role of enzymes in digestion. • Discuss what happens to the end products of digestion. • Explain the term assimilation	a) Start the lesson by asking pupils to state why they think food should be digested. b) Put up a chart of the digestive system and ask pupils to name the parts. c) Let pupils draw a labelled diagram of the digestive system. d) Let pupils explain the role of enzymes in digestion. e) Let pupils discuss digestion in the different parts of the digestive system. f) Pupils explain the meaning of the term assimilation.	a) Observation of pupils' responses about digestion and assimilation. b) Oral presentations about digestion and assimilation. c) Group discussions on how the digestive system helps in the digestion of food, the role of enzymes in digestion and what happens to the end products of digestion. d) Observation of pupils labelled diagram of the digestive system.	Pictures, models and charts showing the digestive system. Starch Iodine solution Milk Butter Fehling's solution Copper sulphate solution Filter paper
Unit 3: Plant Nutrition: Photosynthesis	After completing this unit, pupils should be able to: • Explain the term photosynthesis. • State the factors and raw materials affecting photosynthesis. • Be able to test for starch • Outline the process of photosynthesis. • State the importance of photosynthesis to plants and animals. • List the conditions necessary for photosynthesis. • Investigate the conditions necessary for photosynthesis.	a) Teacher introduces the lesson by asking pupils to brainstorm and then define the term of photosynthesis. b) Let pupils state factors and raw materials affecting photosynthesis. c) Pupils demonstrate the test for starch and record their results. d) Pupils explain how plants carry out the process of photosynthesis. e) Let pupils discuss the dependence of animals on plants. f) Pupils list the conditions necessary for photosynthesis g) Let pupils investigate the conditions necessary for photosynthesis	a) Observation of pupils' responses about photosynthesis. b) Oral presentations about photosynthesis. c) Group discussions on the process of photosynthesis, factors and conditions affecting photosynthesis and importance of photosynthesis to plants and animals. d) Observation of pupils experiments on test for starch and conditions necessary for photosynthesis.	Green leaf drawings Starch Iodine Heat source Alcohol Petri dish
Unit 4: Respiration	After completing this unit, pupils should be able to: • Define the term respiration.	a) Let pupils brainstorm and define the term respiration. b) Let pupils state the differences	a) Observation of pupils' responses about respiration. b) Oral presentations about	Charts, pictures and diagrams and models of respiration

	• State the differences between inhaled and exhaled air and give reasons for the differences. • Briefly explain the differences between external and cellular respiration. • Draw and label the respiratory organs of man. • Briefly explain how cellular respiratory takes place in the lungs.	between external and internal respiration c) Get pupils to breathe in and out and explain the movement in the chest cavity and abdominal cavity d) Pupils carry out simple experiment with time water to show that we breathe out carbon-dioxide. e) Pupils draw a labelled diagram of the respiratory organs of man. f) Let pupils explain the difference between cellular and external respiration.	respiration. c)Group discussions on inhaled and exhaled air, external and cellular respiration and how cellular respiratory takes place in the lungs. d) Observation of pupils labelled diagrams of the respiratory organs of man. e)Group discussions on how the nose and lungs are efficient in carrying out respiration.	Clock Water Glass tubes Small pieces of lung (fukfuk) Vanguards Markers Eraser Pencils Sharpeners
Unit 5: Transport in Plants: Diffusion and Osmosis	After completing this unit, pupils should be able to: • Explain the terms diffusion and osmosis. • Demonstrate the process of diffusion and osmosis.	a)Demonstrate everyday activities like spraying of shelltox or perfume to introduce diffusion b) Carry out simple experiment on osmosis.	a)Observation of pupils' responses about diffusion and osmosis. b) Oral presentations about diffusion and osmosis. c)Observation of pupils' demonstrations of diffusion and osmosis.	Shelltox, Mosquito coil, Young pawpaw, Potassium, permanganate or Copper sulphate crystals
Unit 6:Transport in Plants	• State the need for a transport system. • Explain how water and mineral salts move from the soil to the leaves. • Explain how nutrients move from the leaves to other parts of the plant. • Investigate the path taken by water using coloured dye or ink.	a) Briefly review the structure of the leaf, stem and root. b) Use diffusion and osmosis to explain movement of minerals, nutrients and water in plants. c) Let pupils investigate the path taken by water using coloured dye or ink.	a) Observation of pupils' responses about diffusion and osmosis. b) Oral presentations about diffusion and osmosis. c) Group discussions on the role of diffusion and osmosis in transport in plants. d) Observation of pupils' experiment on the path taken by water using coloured dye or ink.	Diagrams of plant roots Water Ink or dye Young herbaceous seedling
Unit 7: Transport in	After completing this unit, pupils	a) Observation of charts on the	a) Observation of pupils'	Charts and diagrams

Animals	should be able to: • Briefly describe the circulatory system in man. • List the substances that are transported in the blood. • Name the main blood vessels in the transport system in animals. • Draw and label the heart. • Describe the composition and functions of the blood. • Explain how blood is circulated in man.	heart and circulation diagrams. b) Pupils list the substances that are transported in the blood. c) Let pupils name the main blood vessels in the transport system in animals. d) Let pupils describe the structure and functions of the heart and circulatory system e) Pupils explain why we need a circulatory system. f) Let pupils draw a labelled diagram of the heart. g) Pupils describe the composition and functions of the blood.	responses about transport in animals. b) Oral presentations about transport in animals. c) Group discussions on the composition and functions of the blood and how blood is circulated in man. d) Observation of pupils' labelled diagrams of the heart.	of transport in animals Small piece of the heart to show the muscular nature of the heart and the valves Model of the heart Vanguards Markers Eraser Pencils Sharpeners
THEME 6: Reproduction **Unit 1:Reproduction in Plants**	After completing this unit, the pupils should be able to; • Define the term reproduction. • Explain the differences between sexual and asexual reproduction. • Draw and label a flower. • State the functions of the different parts of a flower. • Define the terms pollination and fertilization. • State methods of asexual reproduction in plants.	a) Introduce the lesson by asking pupils to brainstorm and define the term reproduction. b) Discuss with pupils asexual and sexual reproduction. c) Ask each pupil to come with a regular flower and together you identify the parts. d) Pupils briefly discuss pollination and fertilization e) Ask the pupils to name some plants that are not grown by seeds show pupils ginger, onion, cocoyam and cassava cutting as plants not grown from seeds.	a) Observation of pupils' responses about reproduction in plants. b) Oral presentations about reproduction in plants. c) Group discussions on asexual and sexual reproduction in plants and methods of asexual reproduction in plants. d) Observation of pupils' labelled diagrams of a named flower showing some sexual reproductive organs.	Flowers Cassava cutting Onion Ginger Cocoyam Vanguards Markers Eraser Pencils Sharpeners
Unit 5: **Ebola and Covid-19**	After completing this unit, pupils should be able to: • State the causes, mode of transmission, symptoms prevention and control of Ebola and Covid- 19. • Understand the importance of hand	a) Brain storming to get pupils prior knowledge on Ebola and Covid-19 b) Talk by a health worker on Covid -19. c) Ask the pupils to state the symptoms of (a) Ebola (b)	a) Observation of pupils' responses about Ebola and Covid- 19. b) Oral presentations about Ebola and Covid- 19. c) Group discussions on the causes, mode of transmission,	Statistics from the Health Ministry Pictures and charts of health workers and isolation centres Covid response centres

	washing. • Promote the use of face masks. • Explain the importance of social distancing. • Explain what an isolation centre is.	Covid -19 d) Discuss precautionary measures for Ebola and Covid -19 e) Let pupils find out and bring to class: -No of health workers killed during Ebola - Total number of people who died during Ebola - Where Covid 19 isolation centres are located. - What Ebola and Covid 19 have in common?	symptoms prevention and control of Ebola and Covid-19. d) Group discussions on the importance of hand washing, use of face masks and the importance of social distancing. f) What is an isolation centre?	
Theme: **Human body and development** **Unit 1:** **Drugs**	Define the term 'drug' Identify examples of therapeutic use of drugs Explain how some therapeutic drugs can be misused and the consequences of misusing these drugs (tramadol) Identify substances that are commonly consumed in the community (tobacco, alcohol, marijuana, tramadol, pampers water etc.) Define 'addiction' Identify the effects of different drugs (including legal drugs such as alcohol and tobacco) upon the various systems of the body Articulate personal, social and economic consequences of drug abuse	Ask pupils what comes to mind when they hear the term 'drug' Ask them to offer examples of therapeutic use of drugs Discuss how some therapeutic drugs can be misused and the consequences of misusing these drugs (tramadol) List substances that are commonly consumed in the community (tobacco, alcohol, marijuana, tramadol, pampers water etc.) Explain the concept of 'addiction' Identify the effects of different drugs (including legal drugs such as alcohol and tobacco) upon the various systems of the body	Our Future (grade 4-5) Activities:p,120 1. Written activity 2. Debate Home activity Activities (p.123) Identifying different drugs Discussing the picture Our Future (Grade 6-7) Activities (p.114)-5 Discussing the picture Lute's story	Our Future (Grade 4-5) Reference material p. 118-9 Understanding drugs p.121-2 using drugs safely Our Future (Grade 6)-7) p.112-3 Thinking ahead Our Future (Grade8-9) p.131 Overcoming a drug problem p.133 Overcoming an alcohol problem

Theme: Reproduction, Health and Sexuality Sexually transmitted infections	Understand the concept of STIs Name common STIs, their symptoms, potential consequences and treatment Identify how to prevent STIs	Explain that some diseases can be spread through sexual activity Use the resource material Discuss symptoms, possible long-term effects of untreated infections and prevention	Activities (Grade 4-5) p.102 Sing a rap song True or false statements P, 104-7 Places where sex might happen Role play saying no Group discussion on pictures Story of Dalitso & Sabina River of Life p.109-110 Safe places for medicine Paths to find help Role play for youth friendly clinic Role play of treating STIs	Our Future (Grade 4-5) Resource material: p. 100-1 + 103- + l08 Our Future (Grade 7-8) Resource material: p. 89-91 + 94 Our Future (Grade 8-9) Resource material: STIs p.106-8 Treatment of STIs p. 111-2 Preventing STIs p.115
HIV and AIDS	Define HIV and AIDS Distinguish between HIV and AIDS Identify the main modes of HIV transmission Explain how infection occurs Identify how HIV transmission can be prevented Define ART Specify possible consequences of untreated HIV infection Identify social and economic consequences of HIV Recognise HIV-related stigma and prejudice	Ask pupils what the terms HIV and AIDS mean Correct any errors Explain the difference between HIV and AIDS Identify the main modes of HIV transmission Describe how infection occurs Identify how HIV transmission can be prevented Explain ART Ask pupils to brainstormpossible consequences of untreated HIV infection Discuss social and economic	Invite a speaker from an HIV self-help group Our Future (Grade 4-5) Activities: p. 114 The story of Milika Role play Activities p.117 HIV safety ladder Quiz to test knowledge Our Future (Grade 6-7) Activities p.103-4 Role play Thinking ahead Drawing a cartoon Activities p.107 Discrimination game Our Future (Grade 8-9) Activities p. 122-3	Our Future (grade 4-5) Reference material: p.111-3 Understanding HIV and AIDS p.116- Risk Our Future Grade 6-7 Reference material: p.101-2 Understanding HIV and AIDS p.105-6 HIV, AIDS Stigma and discrimination Our Future Grade 8-9 p.118-121 Voluntary testing and counselling

	Challenge HIV-related discrimination	consequences of HIV, including stigma and discrimination	Role play Writing a dialogue	p. 124-127 Living positively with HIV

INTEGRATED SCIENCE
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Suggested Topics/Themes/Units	**Specific Learning Outcomes**	**Recommended Teaching Styles or Pedagogical Approaches**	**Assessment Methods**	**Suggested Teaching and Learning Resources**
Theme 1: **Science and the Environment** **Unit 1: Symbols and Formulae for Common Compounds**	After completing this unit, pupils should be able to: • Define the terms symbol of an element and chemical formulae. • State the symbols for the first twenty and other elements in the periodic table. • List and define the types of chemical formulae. • Explain the terms radical and valency of an element. • Give examples of elements, ions or radicals with their corresponding valencies. • Use the concept of symbol of an element and valencies to write the chemical formulae of compounds.	a) Introduce the lesson by displaying charts about symbol of elements, valencies and chemical formulae of common compounds. b) Allow pupils to symbols for the first twenty and other elements in the periodic table. c) Let pupils List and define the types of chemical formulae. d) Explain the terms radical and valency of an element. e) Let pupils brainstorm and give examples of elements, ions or radicals with their corresponding valencies f) Let pupils use the concept of symbol of an element and valencies to write the chemical formulae of compounds.	a) Observation of pupils' responses about symbol of elements, valencies and chemical formulae of common compounds. b) Oral presentations about symbol of elements, valencies and chemical formulae of common compounds. c) Group discussions on radicals, valencies	a) Textbook b) Charts of some common elements, compounds and their symbols and formulae. c)Vanguards d)Markers e) Sharpeners f) Erasers g)Pencils
Unit 2: Physical and Chemical Changes	After completing this unit, pupils should be able to: • Define the terms physical and chemical changes.	a) Introduce the lesson by displaying charts about physical and chemical changes. b) Allow pupils to brainstorm and define	a) Observation of pupils' responses about physical and chemical changes. b) Oral presentations about	a) Textbook b) Charts and pictures of some processes that

	• State examples of physical and chemical changes. • Describe processes that can termed as physical and chemical changes. • Differentiate between physical and chemical changes.	the terms physical and chemical changes. c) Let pupils discuss processes that termed as physical and chemical changes. d) Let pupils state the differences between physical and chemical changes.	physical and chemical changes. c) Group discussions on processes that can termed as physical and chemical changes. d) Tabulate the differences between physical and chemical changes.	involve physical and chemical changes c)Vanguards d)Markers e) Sharpeners f) Erasers g)Pencils
Theme 2: Reproduction in Plants and Animals **Unit 1: Sexual Reproduction in a named Flowering Plant**	• After completing this unit, pupils should be able to: • Define the term sexual reproduction. • Identify and state the functions of the main floral parts of a flowering plant. • Draw and label a named flowering plant. • Describe a named flowering plant. • Define the term pollination. • State the types of pollination. • Differentiate between self-pollination and cross-pollination. • Describe the floral parts associated with pollination and the role of insects in pollination. • List other agents of pollination. • Discuss the process of fertilization and formation of seeds and fruits.	a) Introduce the lesson by displaying charts about sexual reproduction and ask pupils to brainstorm and explain what they mean by the term sexual reproduction. b) Allow pupils to identify and state the functions of the main floral parts of a flowering plant. c) Let pupils draw a labelled diagram of a named flowering plant. d) Let pupils describe a named flowering plant. e) Let pupils brainstorm, then define and state the types of pollination. f) Let pupils discuss the differences between self-pollination and cross-pollination. g) Pupils describe the floral parts associated with pollination and the role of insects in pollination. h) Let pupils provide a list of other agents of pollination. i) Allow pupils discuss the process of fertilization and formation of seeds and fruits.	a) Observation of pupils' responses about sexual reproduction in a named flowering plant. b) Oral presentations about sexual reproduction in a named flowering plant. c) State the main floral parts of a flowering plant. d) Observe pupils' labelled diagram of a flowering plant. e) Define the term pollination. f) State the types of pollination you have studied. g) Group discussions on differences between self-pollination and cross-pollination and floral parts associated with pollination and the role of insects in pollination. h) List other agents of pollination. i) Group discussions on the process of fertilization and formation of seeds and fruits.	a) Textbook b) Charts and pictures of sexual reproduction in flowering plants c)Vanguards d)Markers e) Sharpeners f) Erasers g) Pencils h) Fresh flowers
Unit 2: Dispersal of Fruits and Seeds	• After completing this unit, pupils should be able to: • Identify some selected fruits	a) Introduce the lesson by displaying charts about methods of dispersal of fruits and seeds.	a) Observation of pupils' responses about dispersal of fruits and seeds.	a) Textbook b) Charts and pictures of

	and seeds. • Describe methods of dispersal of fruits and seeds. • State the importance of dispersal with reference to a named local seed or fruit. • Show awareness that plants have different methods of dispersal.	b) Let pupils identify some selected fruits and seeds from the charts. c) Let pupils describe different methods of dispersal of fruits and seeds. d) Let pupils state the importance of dispersal with reference to a named local seed or fruit.	b) Oral presentations about dispersal of fruits and seeds. c)Group discussions on methods of dispersal of fruits and seeds. d) State the importance of dispersal with reference to a named local seed or fruit	dispersal of fruits and seeds c)Vanguards d)Markers e) Sharpeners f) Erasers g) Pencils
Unit 3: **Germination of Seeds**	After completing this unit, pupils should be able to: • Define the term germination. • List the types of germination. • Describe the types of germination. • Investigate conditions necessary for germination of a bean seed, maize or corn. • Observe different stages of germination in bean seed, maize or corn. • Draw labelled diagrams to show germination in bean seedling, maize or corn seedling.	a) Introduce the lesson by displaying charts about germination of seeds. b) Allow pupils to brainstorm in small groups to define and list down the types of germination. c) Let pupils in small groups describe the types of germination. d) Let pupils Investigate conditions necessary for germination of a bean seed, maize or corn. e) Allow pupils to observe different stages of germination in bean seed, maize or corn. f) Let pupils Draw labelled diagrams to show germination in bean seedling, maize or corn seedling.	a) Observation of pupils' responses about germination of seeds. b) Oral presentations about germination of seeds. c)Group discussions on types of germination. d) Observation of pupils' investigation conditions necessary for germination of a bean seed, maize or corn and different stages of germination in bean seed, maize or corn. e) Observation of pupils labelled diagrams to show germination in bean seedling, maize or corn seedling.	a) Textbook b) Charts and pictures of germination of seeds c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Seeds i) Water j) Soil k) Containers l) Microscope
Theme 3: Chemical Reactions **Unit 1: Hydrogen**	After completing this unit, pupils should be able to: • State the properties of hydrogen. • Describe the preparation and collection of hydrogen by the reaction of reactive metals e.g. iron and zinc on dilute acids. • Write word and balanced chemical equation for the preparation of hydrogen gas. • State the uses of hydrogen.	a) Introduce the lesson by displaying charts about the preparation of hydrogen. b) Let pupils state the properties of hydrogen. c) Let pupils discuss in small groups the preparation and collection of hydrogen by the reaction of reactive metals e.g. iron and zinc on dilute acids. d) Observe pupils write word and balanced chemical equation for the laboratory preparation of hydrogen.	a) Observation of pupils' responses about hydrogen. b) Oral presentations about properties and uses of hydrogen. c)Group discussions on preparation and collection of hydrogen by the reaction of reactive metals. d) Write word and balanced chemical equation for the	a) Textbook b) Charts showing preparation of hydrogen c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils

		e) Let pupils state the uses of hydrogen.	preparation of hydrogen gas.	
Unit 2: Simple Reactivity Series of Metals	After completing this unit, pupils should be able to: • Define the term reactivity series or electrochemical series of metals. • Discuss the reactivity of metals. • Explain how elements in the reactivity series combine to form stable compounds. • Discuss the role of the activity series.	a) Introduce the lesson by displaying charts about reactivity series or electrochemical series of metals. b) Let pupils define the term reactivity series or electrochemical series of metals. c) Let pupils discuss in small groups the reactivity of metals. d) Let pupils explain how elements in the reactivity series combine to form stable compounds e) Let pupils discuss in small groups discuss the role of the activity series.	a) Observation of pupils' responses about reactivity series of metals. b) Oral presentations about reactivity series of metals. c)Group discussions on reactivity of metals, how elements in the series combine to form stable compounds and the role of the reactivity series.	a) Textbook b) Charts showing reactivity of metals c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils
Unit 3: Simple Balanced Chemical Equations	After completing this unit, pupils should be able to: • Write simple word equations. • Balance simple equations by using appropriate number of moles and state symbols.	a) Introduce the lesson by giving pupils several word problems to get balanced chemical equations. b) Allow pupils to write and balance simple chemical equations.	a) Observation of pupils' responses about balanced chemical equations. b) Write and balance the following chemical equations. $H_2 + O_2 \rightarrow H_2O$ $H_2 + N_2 = NH_3$ $KClO_3 \xrightarrow{\Delta} KCl + O_2$	a) Textbook b) Charts of some chemical equations c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Plastercene i) Transparent tape
Theme 4: Energy **Unit 1: Light Energy and our Sight**	After completing this unit, pupils should be able to: • Investigate that light travels in a straight line. • Define the term eclipse. • Relate eclipses and pin hole camera. • Explain the terms reflection and refraction of light. • State the Laws of Reflection. • Identify angle of incidence and angle of reflection. • Perform experiments to demonstrate the Laws of Reflection and refraction of	a) Introduce the lesson by displaying charts about light energy and our sight. b) Let pupils define the term eclipse. b) Pupils discuss the relationship between eclipses and the pin hole camera. c) Let pupils state terms reflection and refraction of light. d) Let pupils state the Laws of Reflection. e) Let pupils identify angle of incidence and angle of reflection. f) Allow pupils to perform experiments to demonstrate the Laws of Reflection and refraction of light.	a) Observation of pupils' responses about how light travels in a straight line. b) Oral presentations about eclipses and its relationship to pin hole camera. c) State the Laws of Reflection. d)Group discussions on eclipses and pin hole camera. e) Observation of experiment to demonstrate the laws of reflection.	a) Textbook b) Charts and pictures c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Dry cells batteries i) Wire j) Electric bulb k) Cardboard l) Drawing pins m) Torch light n) Opaque object o) Pin hole camera p) Lamp q) Ray box r) Prism s) Screen t) Round object u) Round tin

	light.			v) Sewing needle w) Light source x) Aluminium foil y) Optical pin z) Plane mirrors Diverging lenses Converging lenses
Unit 2: Images and Refraction of Light	After completing this unit, pupils should be able to: • Explain the term image. • Note the characteristics of images in a plane mirror. • Observe the refraction of light from one transparent medium into another transparent medium. • Observe the action of a thin converging lens on a parallel beam of light. • Determine the "principal focus" and "focal length "by distant object method. • Describe the use of a single lens: (i) A magnifying glass (ii) A human eye	a) Introduce the lesson by displaying chart depicting images and refraction of light. b) Let pupils brainstorm and come up with a definition of images. c) Pupils list the characteristics of images in a plane mirror. d) Pupils observe the action of a thin converging lens on a parallel beam of light. e) Let pupils determine the "principal focus" and "focal length "by distant object method f) Let pupils discuss in small groups briefly the use of a single lens: i. A magnifying glass ii. A human eye	a) Observation of pupils' responses about images and refraction of light. b) Oral presentations about images and refraction of light. c) Observe the refraction of light from one transparent medium into another transparent medium and action of a thin converging lens on a parallel beam of light. d)Group discussions on the determination of "principal focus" and "focal length "by distant object method and the use of a single lens: a magnifying glass and the human eye.	a) Textbook b) Charts and pictures about images and refraction of light c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Converging lenses i) Diverging lenses j) Prisms k) Plane mirror l) Ray box m) Screen n) Electric bulb o) Lens holder p) Mirror holder q) Object pin r) Magnifying glass s) Compound microscope t) Lenses u) Single lens v) Camera
Unit 3: Structure of the Eye Related to Seeing and Image Formation	After completing this unit, pupils should be able to: • State the characteristics of images formed by a converging lens, single lens camera, magnifying glass and human eye. • Compare a camera and the human eye. • Recognise the main structures of the eye related to sighting only. • State some eye defects and their corrections with reference to	a) Introduce the lesson by displaying charts showing the structure of the eye and how it is related to seeing and image formation. b) Let pupils brainstorm and state the characteristics of images formed by a converging lens, single lens camera, magnifying glass and human eye. c) Allow pupils to draw labelled diagram of the human eye. d) Let pupils compare a camera and the human eye. d) Give a project to pupils to state some	a) Observation of pupils' responses about the structure of the eye and how it is related to seeing and image formation. b) Oral presentations about the structure of the eye and how it is related to seeing and image formation. c) Tabulate the differences between a camera and the human eye. d) State some eye defects and	a) Textbook b) Charts and pictures of structure of the human eye and a camera c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Converging lens i) Single lens camera

	short – sightedness and long - sightedness. • Discuss some diseases associated with the eye such as colour –blindness, cataract, astigmatism and glaucoma. • Demonstrate the dispersion of light through an equilateral prism. • Show that white light is composed of seven colours.	eye defects and their corrections and some diseases associated with the eye. They should submit it after one week for the award of marks. e) Let pupils demonstrate the dispersion of light through an equilateral prism and show that white light is made up of seven colours.	their corrections e) Group discussions on some diseases associated with the eye such as colour – blindness, cataract, astigmatism and glaucoma. f) Observation of pupils' demonstrations about the dispersion of light through an equilateral prism and white light is composed of seven colours.	j) Magnifying glass k) Slide projector
Unit 4: Sound and Hearing	After completing this unit, pupils should be able to: • Differentiate between the terms sound and hearing. • Describe experiments to show that sound is produced by vibration and a medium is needed for transmission of sound. • Discuss how the human ear hears sound (brief description of the structure of the ear). • Explain how factors such as loud sound, ear diseases or disorders affect our hearing. • Show sound travels through solids, liquids and gases. • Recognise that sound travels fastest in solids and slowest in gases. • Realise that light travels much faster than sound and relate it to lightning and thunder. • Differentiate among heat, sound and light as different forms of energy.	a) Introduce the lesson by displaying charts about sound and hearing. b) Let pupils brainstorm and differentiate between the terms sound and hearing. c) Let pupils carry out experiment to show that sound is produced by vibration and a medium is needed for transmission of sound. d) Let pupils discuss how the human ear hears sound (brief description of the structure of the ear is required) and explain factors that affect our hearing. e) Let pupils demonstrate how sound travels through solids, liquids and gases and the rate at which sound and light travels in matter. f) Let pupils explain the differences among heat, sound and light as different forms of energy.	a) Observation of pupils' responses about sound and hearing. b) Oral presentations about sound and hearing. c) Observation of pupils' demonstrations of how sound is produced. d) Group discussions on how the human ear hears sound and factors that affect our hearing. e) Observe pupils demonstrate how sound travels through solids, liquids and gases and the rate at which sound and light travels in matter. f) State the differences among heat, sound and light as different forms of energy.	a) Textbook b) Charts and pictures about sound and hearing c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Battery or dry cells i) Cork j) Bell jar k) Electric bell l) Pump m) Stop watch n) Drum o) Balloon p) Carbon dioxide gas q) Helium gas r) Resonance tube

Unit 5: Force, Work, Energy and Power	After completing this unit, pupils should be able to: • Explain the differences among the terms force, work, energy and power. • State the S.I unit of force, work, energy and power. • Differentiate between force in N and energy in J. • Measure force using the spring balance. • Observe and infer the effects of forces through experiments and their daily experiences that a force can produce: ▪ change in speed ▪ change in direction ▪ change in size ▪ change in shape • Derive mathematical formulae and solve problems on force, work, energy and power.	a) Introduce the lesson by displaying charts about force, work, energy and power. b) Let explain the differences among the terms force, work, energy and power. c) Allow pupils to differentiate between force in N and energy in J. d) Pupils demonstrate measurement of force using a spring balance and experiments on effects of forces. d) Let pupils derive mathematical formulae and solve problems on force, work, energy and power.	a) Observation of pupils' responses about force, work, energy and power. b) Oral presentations about force, work, energy and power. c) Observation of pupils' demonstrations of measurement of force using a spring balance and experiments on effects of forces. e) State the appropriate formula and solve the following problems:	a) Textbook b) Charts and pictures about force, work, energy and power c) Vanguards d) Markers e) Sharpeners f) Erasers g) Pencils h) Spring balance i) Empty box j) Trolley k) Assorted masses l) String m) Metre rule n) Stop watch or clock o) Pendulum bob p) Thread q) Clamp r) Tripod stand s) Single fixed pulley
THEME 6: Living Things and their Ecosystems **Unit 1: Food Chains and Food Webs**	After completing this unit, pupils should be able to: • Explain the term ecosystem, habitat, food chain and food web. • Describe how energy derived from the sun is used by living organisms in the ecosystem. • Describe how energy flows through the food chain and food web. • Explain the terms producers and consumers. • Show understanding of producers as the start of every food chain.	a) Introduce the lesson by displaying charts or pictures about living things and their ecosystems. b) Let pupils brainstorm and explain the term ecosystem, habitat, food chain and food web. c) Pupils in small groups describe how energy derived from the sun is used by living organisms in the ecosystem. d) Let pupils describe how energy flows through the food chain and food web. e) Let pupils explain the terms producers and consumers. f) Create awareness in pupils to	a) Observation of pupils' responses about living things and their ecosystems. b) Oral presentations about living things and their ecosystems. c) Group discussions on how energy derived from the sun is used by living organisms in the ecosystem and how energy flows through the food chain and food web. d) Briefly explain the meaning of the terms	a) Textbook b) Charts and pictures about food chains and food webs c) Hand lens e) Vanguards f) Markers g) Sharpeners h) Erasers i) Forceps j) Empty tins k) Collecting jars

	• List activities that may disrupt the ecosystem.	understand that producers are at the start of every food chain. g) Let pupils list activities that may disrupt the ecosystem.	producers and consumers. e) List down some activities that may disrupt the ecosystem.	
Unit 2: Carbon Cycle	After completing this unit, pupils should be able to: • Identify the carbon cycle. • Discuss the importance of the carbon cycle in photosynthesis, combustion, respiration and decomposition. • Describe how carbon is cycled in nature.	a) Introduce the lesson by displaying charts or pictures about the carbon cycle. b) Let pupils Identify the carbon cycle. c) Pupils in small groups Discuss the importance of the carbon cycle in photosynthesis, combustion, respiration and decomposition. d) Let pupils describe how carbon is cycled in nature. at the start of every food chain.	a) Observation of pupils' responses about the carbon cycle. b) Oral presentations about the carbon cycle. • c) Group discussions on the importance of the carbon cycle in photosynthesis, combustion, respiration and decomposition and how carbon is cycled in nature.	a) Textbook b) Charts and pictures about the carbon cycle c) Hand lens e) Vanguards f) Markers g) Sharpeners h) Erasers
Unit 3: Interdependence in the School Garden	After completing this unit, pupils should be able to: • Identify some organisms in their school garden. • Explain how the organisms are interdependent on each other. • List the organisms that are producers and consumers. • State how the organisms are adapted to their surroundings. • Construct a food web for the habitat.	a) Introduce the lesson by displaying charts or pictures about interdependence of organisms in the school garden. b) Let pupils identify some organisms in their school garden. c) Pupils in small groups discuss how the organisms are interdependent on each other. d) Let pupils list the organisms that are producers and consumers. e) Let pupils state how the organisms are adapted to their surroundings. f) Guide pupils to construct a food web for the habitat.	a) Observation of pupils' responses about interdependence of organisms in the school garden. b) Oral presentations about interdependence of organisms in the school garden. c) Group discussions on how the organisms are interdependent on each other and how the organisms are adapted to their surroundings. d) List organisms that are producers and consumers in your school garden. e) Observation of pupils' construction of a food web for the habitat.	a) Textbook Charts and pictures about interdependence of organisms in the school garden c) Hand lens e) Vanguards f) Markers g) Sharpeners h) Erasers
Unit 4: Human Activities on the Environment	After completing this unit, pupils should be able to: • Identify some activities of humans that affect the environment. • Explain the consequences of such	a) Introduce the lesson by displaying charts or pictures about some activities of humans that affect the environment. b) Let pupils identify some activities of humans that affect the environment. c) Pupils in small groups explain the consequences of such activities on	a) Observation of pupils' responses about some activities of humans that affect the environment. b) Oral presentations about some activities of humans that affect the environment.	a) Textbook Charts and pictures of dump sites, Mortomeh deforestation, road construction, dug mining pits, etc.

	activities on humans and the environment. • State some ways of refuse disposal. • State some causes of air pollution. • State some causes of water pollution. • Get awareness of Greenhouse Effect, climate change and Global warming.	humans and the environment. d) Let pupils state some ways of refuse disposal. e) Let pupils state some causes of air pollution. f) State some causes of water pollution. g) Allow pupils to get awareness of Greenhouse Effect, climate change and Global warming.	c) Group discussions on the consequences of such activities on humans and the environment and the Greenhouse Effect, climate change and Global warming. d) List the causes of air and water pollution.	c) Hand lens e) Vanguards f) Markers g) Sharpeners h) Erasers i) Internet
Unit 5: Biotic and Abiotic Factors in the Ecosystem	After completing this unit, pupils should be able to: • Identify some biotic and abiotic factors in the ecosystem. • Explain the terms biotic and abiotic factors. • List some of the abiotic factors. • Identify instruments used to measure some of the abiotic factors. • State the instruments used to measure abiotic factors. • List some biotic factors. affecting the environment.	a) Introduce the lesson by displaying charts or pictures about some biotic and abiotic factors in the ecosystem. b) Let pupils identify some biotic and abiotic factors in the ecosystem. c) Pupils in small groups brainstorm and explain the terms biotic and abiotic factors. d) Let pupils list some of the abiotic factors: rainfall, temperature, pressure, wind, relative humidity, etc. e) Let pupils identify and name instruments used to measure some of the abiotic factors: rain gauge, thermometer, barometer, wind vane, cup anemometer, hygrometer. f) List some biotic factors affecting the environment: butterflies, grazers, etc.	a) Observation of pupils' responses about some biotic and abiotic factors in the ecosystem. b) Oral presentations about biotic and abiotic factors in the ecosystem. c) Group discussions on the terms biotic and abiotic factors. d) State other biotic factors that affect the environment. e) State instruments used to measure some abiotic factors. f) Observation of pupils' drawings of some of the instruments used to measure abiotic factors.	a) Textbook b) Charts and pictures of plants and animals in the environment and some instruments used to measure abiotic factors. c) Hand lens e) Vanguards f) Markers g) Sharpeners h) Erasers i) Internet
THEME 7: Electricity and its Application at Home **Unit 1: Electrical Circuits**	After completing this unit, pupils should be able to: • Identify the components of an electrical circuit. • Explain the components of an electrical circuit. • Draw diagram of an electrical circuit.	a) Introduce the lesson by displaying charts or pictures about components of an electrical circuit. b) Let pupils identify components of an electrical circuit. c) Pupils in small groups brainstorm and explain the components of an electrical circuit.	a) Observation of pupils' responses about components of an electrical circuit. b) Oral presentations about components of an electrical circuit. c) Group discussions on the components of an electrical	a) Textbook b) Charts and pictures of electrical circuits. c) Batteries e) Vanguards f) Markers g) Sharpeners

	• Discuss the effect of increasing the number of cells in series and parallel. • Measure voltage and current flow.	d) Let pupils draw diagram of an electrical circuit e) Let pupils discuss the effect of increasing the number of cells in series and parallel. f) Guide pupils measure voltage and current flow	circuit and the effect of increasing the number of cells in series and parallel. d) Observation of pupils' drawings of an electrical circuit. e) Observation of pupils' measurement of voltage and current flow.	h) Erasers i) Internet j) Bulbs k) Copper wire
Unit 2: Resistors in Series and Parallel	After completing this unit, pupils should be able to: • Identify resistors in series and parallel. • Set up resistors in series and parallel. • State the unit of resistance. • Calculate the effective resistance when resistors are connected in series and parallel.	a) Introduce the lesson by displaying charts or pictures about resistors in series and parallel. b) Let pupils identify resistors in series and parallel. c) Guide pupils to set up resistors in series and parallel. d) Let pupils state the unit of resistance. e) Let pupils calculate the effective resistance when resistors are connected in series and parallel.	a) Observation of pupils' responses about resistors in series and parallel. b) Oral presentations about resistors in series and parallel. c) Observation of pupils' setting up of resistors in series and parallel. e) Observation of pupils' calculation of the effective resistance of resistors that are connected in series and parallel.	a) Textbook b) Charts and pictures of resistors connected in series and parallel. c) Batteries e) Vanguards f) Markers g) Sharpeners h) Erasers i) Resistors j) Knife k) Copper wire
Unit 3: Household Wiring and Safety Devices	After completing this unit, pupils should be able to: • Identify some household wiring and safety devices. • Explain the functions of: (i) Switch (ii) Fuse (iii)Earth. • Wire a three pin fused plug correctly. • State the rules and precautions to be taken with respect to electricity. • Construct a circuit with two or more lamps and switches to operate them separately.	a) Introduce the lesson by displaying charts or pictures about some household wiring and safety devices. b) Let pupils identify some household wiring and safety devices. c) Let pupils explain the functions of: (i) Switch (ii) Fuse (iii)Earth. d) Guide pupils to wire a three pin fused plug correctly. e) Let pupils state the rules and precautions to be taken with respect to electricity. f) Guide pupils to construct a circuit with two or more lamps and switches to operate them separately.	a) Observation of pupils' responses about some household wiring and safety devices. b) Oral presentations about some household wiring and safety devices. c) Observation of pupils' correct wiring of a three pin fused plug. d) State the rules and precautions to be taken with respect to electricity. e) Observation of pupils' construction of a circuit with two or more lamps and switches to operate them separately. Group discussion on dangers of electricity.	a) Textbook b) Charts and pictures of resistors connected in series and parallel. c) Switch e) Fuse f) Three pin plug g) Sharpeners h) Erasers i) Screw driver j) Length of flex wire k) Knife l) Earth wire

THEME 8: Forces at Work **Unit 1: Lever and Turning Forces**	After completing this unit, pupils should be able to: • Identify some examples of lever and turning forces. • Define the term lever. • Identify the load, fulcrum and effort in a lever system. • Identify lever system in devices of every use. • Construct a circuit with two or more lamps and switches to operate them separately.	a) Introduce the lesson by displaying charts or pictures about some examples of lever and turning forces b) Let pupils identify some household wiring and safety devices. c) Let pupils use a see-saw to explain the terms effort, pivot and load. d) Let pupils use a pair of scissors, wheel barrow and shovel to explain the terms 1st class, 2nd class and 3rd class levers. Give other examples of levers. e) Let pupils in small groups brainstorm and define the term lever. f) Let pupils identify the load, fulcrum and effort in a lever system. g) Let pupils identify lever system in devices of every use. h) Let pupils draw diagrams of 1st class, 2nd class and 3rd class levers to show the position of the fulcrum, effort and load. i) Guide pupils to construct a circuit with two or more lamps and switches and operate them separately.	a) Observation of pupils' responses about some examples of lever and turning forces. b) Oral presentations about some examples of lever and turning forces. c) Observation of pupils' operation of a see –saw to show the position of the load, fulcrum and effort in a lever system and the lever system. d) Observation of pupils' classification of 1st class, 2nd class and 3rd class levers and construction of a circuit with two or more lamps and switches that can be operated separately. e) Define each of the following terms: lever, load, effort, fulcrum, 1st class levers, 2nd class levers and 3rd class levers.	a) Textbook b) Charts and pictures of types of levers and turning forces. b) Pair of scissors c) Pliers d) Vanguards e) Sharpeners f) Erasers g) Pencil h) Markers i) See -saw j) Wheel barrow k) Nut crackers l) Bottle opener m) Pickaxe n) shovel

Unit 2: Pressure	After completing this unit, pupils should be able to: • Identify some objects or bodies that exert pressure. • Relate pressure with force. • State the S.I unit of pressure. • Calculate pressure from force and area. • Do simple calculations to determine the pressure exerted by a body such as a brick. • State the normal atmospheric pressure. • List instruments used to measure pressure.	a) Introduce the lesson by displaying charts or pictures about some bodies or objects that exert pressure. b) Let pupils identify some objects or bodies that exert pressure. c) Let pupils relate pressure with force. d) Let pupils push a drawing pin with the thumb. e) Let pupils observe pressure exerted by high heel shoes. f) Let pupils demonstrate pressure using clay and cocoyam. g) Let pupils State the S.I unit of pressure. h) Let pupils do simple calculations to determine the pressure exerted by a body such as a brick. i) Let pupils state the normal atmospheric pressure. j) Let pupils list instruments used to measure pressure.	a) Observation of pupils' responses about some bodies or objects that exert pressure. b) Oral presentations about some bodies or objects that exert pressure. c) Observation of pupils' calculations of pressure from force and area. d) Observation of pupils' simple calculations to determine the pressure exerted by a body such as a brick. e) State the normal atmospheric pressure. f) List instruments used to measure pressure	a) Textbook b) Charts and pictures of instruments and bodies associated with clay. b) Brick c) High heel shoes d) Vanguards e) Sharpeners f) Erasers g) Pencil h) Markers i) Drawing pins j) Soft clay k) Cocoyam l) Assorted weights m) Knife n) Barometer
Unit 3: Energy, Work and Power	• Identify some materials or pictures associated with energy, work and power. • Relate work as a product of force and distance. • State the S.I unit of work (Joule – J). • Relate power to the rate of work done. • State the S.I unit of power (Watt – W). • Carry out some calculations involving energy, force, distance, time and power	a) Introduce the lesson by displaying charts or pictures showing some materials associated with energy, work and power. b) Let pupils identify some materials or pictures associated with energy, work and power. c) Let pupils relate work as a product of force and distance. d) Let pupils state the S.I unit of work (Joule – J). e) Let pupils relate power to the rate of work done. f) Let pupils state the S.I unit of power (Watt - W). g) Let pupils carry out calculations involving energy, force, distance, time and power using the following formulae: P.E = m x g x h K.E = ½ m x v^2 Work = Force x distance Force = $\frac{\text{work}}{\text{distance}}$	a) Observation of pupils' responses about some materials associated with energy, work and power. b) Oral presentations about some materials associated with energy, work and power. c) Observation of pupils' operation of a see –saw to show the position of the load, fulcrum and effort in a lever system and the lever system. d) Observation of pupils' calculations involving energy, force, distance, time and power. e) State the S.I unit for energy, work and power.	a) Textbook b) Charts and pictures of types of levers and turning forces. c) Bathroom scale d) Pliers e) Vanguards f) Sharpeners g) Erasers h) Pencil i) Markers j) Stop clock k) Tape measure

		Distance = work / Force Power = work done / time taken		
THEME 9: Magnetism **Unit 1: Magnets and Magnetic Fields**	After completing this unit, pupils should be able to: • Identify magnets and magnetic field. • Explain the terms magnet and magnetic field. • Explain that a feely suspended magnet comes to rest in a North – South direction. • State that a magnet has two poles. • Infer that unlike poles attract and that there is a magnetic field around a magnet.	a) Introduce the lesson by displaying charts or pictures about magnets and magnetic fields. b) Let pupils identify magnets and magnetic fields. c) Let pupils brainstorm and explain the terms magnets and magnetic fields. d) Guide pupils to place a bar magnet between two books and cover the books with a sheet of paper. Let them sprinkle iron filings on the sheet of paper and explain their observation. e) Guide pupils to put two bar magnets next to each other on a paper and sprinkle iron filings between them. Let them draw the set up and explain their observation. e) Guide pupils to turn one of the magnets in the opposite direction and then repeat the process. Let them draw the set up and explain their observation. f) Let pupils explain that unlike poles attract while like poles repel each other and there is a magnetic field around a magnet.	a) Observation of pupils' responses about magnets and magnetic fields. b) Oral presentations about magnets and magnetic fields. c) Observation of pupils' demonstrations about the behaviour of magnets and effects of magnetic fields. d) Explain the terms magnets and magnetic fields. e) Observation of pupils' drawings of magnets and magnetic fields.	a) Textbook b) Charts and pictures of magnets and magnetic fields. c) Bar magnets d) Horse shoe magnet e) Vanguards f) Sharpeners g) Erasers h) Pencil i) Markers j) Iron filings k) Sheets of plain papers l) Two books of the same size
Unit 2: Properties of Magnets and Making of Magnets	After completing this unit, pupils should be able to: • Identify some magnetic materials in the charts and pictures and also experimentally. • State the properties of magnets. • Describe methods of making magnets. • Differentiate between temporary magnets and permanent magnets. • List some uses of magnets.	a) Introduce the lesson by displaying charts or pictures about properties of magnets and making of magnets. b) Let pupils identify some magnetic materials in the charts and pictures and also experimentally. c) Let pupils take different objects at a time and see if it is attracted by a bar magnet. Let them label record their observation in a two column table labeled attracted and not attracted by a bar magnet. d) Guide pupils to strike a nail with one end of the magnet in one direction only. Let them repeat the process several	a) Observation of pupils' responses about properties of magnets and making of magnets. b) Oral presentations about properties of magnets and making of magnets. c) Observation of pupils' demonstrations of making magnets. d) Group discussions on other ways of making magnets. e) Group discussions on differences between temporary and permanent	a) Textbook b) Charts and pictures of properties of magnets and making of magnets. c) Bar magnets d) Two small boxes e) Vanguards f) Sharpeners g) Erasers h) Pencil i) Markers j) Key k) Wood

		times. Let them try picking up the steel pins with the nails. Let them record their observations and explain what happened. e) Let pupils state the properties of magnets. e) Let pupils in small groups brainstorm and come up with differences between temporary and permanent magnets. f) Let pupils state the uses of magnets e.g. for picking up and holding pins, nails, etc.	magnets. f) State some uses of magnets.	l) Paper m) Plastic n) stones o) Glass p) Nail q) Steel pins r) Bottle tops s) Paper clip
THEME 10: Calculations on Simple Machines	After completing this theme, pupils should be able to: • Identify some simple machines. • Explain the terms effort, load, mechanical advantage, velocity ratio and efficiency of a machine. • Do some calculations on effort, load, mechanical advantage, velocity ratio and efficiency of a machine.	a) Introduce the lesson by displaying charts or pictures about some simple machines. b) Let pupils identify some simple machines. c) Let pupils brainstorm in small groups and explain the terms effort, load, mechanical advantage, velocity ratio and efficiency of a machine. d) Guide pupils to do some calculations based on effort, load, mechanical advantage, velocity ratio and efficiency of a machine.	a) Observation of pupils' responses about some simple machines. b) Oral presentations about some simple machines. c) Group discussions on the meaning of the terms effort, load, mechanical advantage, velocity ratio and efficiency of a machine. d) Observation of pupils' calculations of effort, load, mechanical advantage, velocity ratio and efficiency of a machine.	a) Textbook b) Charts and pictures of some simple machines. c) Plier tongs d) Shovel e) Vanguards f) Sharpeners g) Erasers h) Pencil i) Markers j) Tin opener k) Nut cracker l) Pliers
Theme: Sexual and reproductive health **Unit 1: Accessing prenatal and antenatal services**	Identify available services for expectant mothers and newborns Identify the respective roles and responsibilities of mothers and fathers Identify what new born babies need (love, food, warmth, contact, kept clean etc.) Describe immunization against common childhood diseases Appreciate the importance of immunisations	Discuss the importance of pre and post natal care Ask pupils to identify the respective roles and responsibilities of mothers and fathers Identify what new born babies need (love, food, warmth, contact, kept clean etc.) Describe immunization against common childhood diseases Appreciate the importance of immunizations	**Observation of discussion** **Observations of discussion** **Discussion and ability to challenge myths and untruths about vaccinations**	**Visit from a relevant health worker and or parents of a baby or infant to share their experiences of parenthood** **Available pamphlets/videos on immunization**

	Identify ways of staying healthy during pregnancy	Identify ways of staying healthy during pregnancy			
Unit 5: Gender – based Violence (GBV)	After completing this unit, pupils should be able to: Define describe Gender – based Violence (GBV). Provide examples of Gender - based Violence (GBV) Identify causes of Gender - based Violence (GBV) State the signs of Gender - based Violence (GBV).	Refer to previous work on human and children's rights, gender inequality, bullying and harassment Define gender based violence and give examples from across the spectrum of such behaviour Ask pupils to identify what they think causes Gender - based Violence (GBV) How might you recognize someone affected by GBV?	a) Observation of pupils' responses about Gender – based Violence (GBV). b) Oral presentations about Gender – based Violence (GBV). c) Group discussions about the causes of Gender - based Violence (GBV). d) State some examples of Gender - based Violence (GBV). e) List the signs of Gender - based Violence (GBV).	) Textbook b) Charts and pictures about Gender - based Violence (GBV). c) Gender - based Violence (GBV) specialist. d) Vanguards e) Markers f) Sharpeners g) Erasers External speaker e.g. staff or volunteers from women's and children's shelter	
Theme 5: Sexual Reproductive Health (SRH) **Unit 1: Sexual Harassment**	After completing this unit, pupils should be able to: • Explain what is meant by the term sexual harassment and assault. • State ways in which sexual harassment and assault occurs. • Discuss the effects or impacts of sexual harassment and assault. • Describe ways in which sexual harassment and assault may be prevented.	a) Introduce the lesson by displaying charts or pictures about sexual harassment and assault. Invite health personnel and staff from the Family Support Unit of the Sierra Leone Police to talk on the topic. b) Let pupils brainstorm and come up with the definition of the terms sexual harassment and assault. c) Let pupils state ways in which sexual harassment and assault occurs. d) Pupils in small groups discuss the effects or impacts of sexual harassment and assault and ways in which sexual harassment and assault may be prevented.	a) Observation of pupils' responses about sexual harassment and assault. b) Oral presentations about sexual harassment and assault. c) State ways in which sexual harassment and assault occurs. d) Group discussions on the effects or impacts of sexual harassment and assault and ways in which sexual harassment and assault may be prevented. Activities p. 31-34 Discussing stories Standing up for our rights Drawing a map Finding out more	a) Textbook b) Charts and pictures about sexual harassment and assault c) FSU Personnel d) Vanguards e) Markers f) Sharpeners g) Erasers Our Future (Grade:8-9 Resource Material p.29-30 Sexual abuse and rape	