



REPUBLIC OF KENYA

MINISTRY OF EDUCATION

UPPER PRIMARY LEVEL DESIGNS

GRADE 4

SCIENCE AND TECHNOLOGY

FOR

LEARNERS WITH HEARING IMPAIRMENT



KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A Skilled and Ethical Society

FOREWORD

The Government of Kenya is committed to ensuring that policy objectives for Education, Training and Research meet the aspirations of the Constitution of Kenya 2010, the Kenya Vision 2030, National Curriculum Policy 2019, the United Nations Sustainable Development Goals (SDGs) and the Regional and Global conventions to which Kenya is a signatory. Towards achieving the mission of Basic Education, the Ministry of Education (MoE) has successfully and progressively rolled out the implementation of the Competency Based Curriculum (CBC) at Pre-Primary, Primary and Junior School levels.

The implementation of Competency Based Curriculum involves monitoring and evaluation to determine its success. After the five-year implementation cycle, a summative evaluation of the primary education cycle was undertaken to establish the achievement of learning outcomes as envisaged in the Basic Education Curriculum Framework. The Government of Kenya constituted a Presidential working Party on Education Reforms (PWPER) in 2022 to address salient issues affecting the education sector. PWPER made far reaching recommendations for basic education that necessitated curriculum review. The recommendations of the PWPER, monitoring reports, summative evaluation, feedback from curriculum implementers and other stakeholders led to rationalisation and review of the basic education curriculum.

The reviewed Grade Four curriculum designs for learners with Hearing Impairment build on competencies attained by learners at Grade three. Emphasis at this grade is the development of basic literacy, numeracy and skills for interaction with the environment.

The curriculum designs present National Goals of Education, essence statements, general and specific expected learning outcomes for the subjects as well as strands and sub strands. The designs also outline suggested learning experiences, key inquiry questions, core competencies, Pertinent and Contemporary Issues (PCIs), values, and assessment rubric.

It is my hope that all Government agencies and other stakeholders in Education will use the designs to plan for effective and efficient implementation of the CBC.

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PREFACE

The Ministry of Education (MoE) nationally implemented Competency Based Curriculum (CBC) in 2019. Grade one is the first grade of Primary education level while Grade 6 is the final grade of the level in the reformed education structure.

The reviewed Grade Four curriculum furthers implementation of the CBC from Grade Three in Primary level. The curriculum provides opportunities for learners to focus in a field of their choice to form a foundation for further education and training and/or gain employable skills. This is very critical in the realisation of the Vision and Mission of the on-going curriculum reforms as enshrined in the Sessional Paper No. I of 2019 whose title is: *Towards Realizing Quality, Relevant and Inclusive Education and Training for Sustainable Development* in Kenya. The Sessional Paper explains the shift from a content-focused curriculum to a focus on **nurturing every learner's potential**.

Therefore, the Grade Four curriculum designs for learners with Hearing Impairment are intended to enhance the learners' development in the CBC core competencies, namely: Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Imagination, Citizenship, Digital Literacy, learning to Learn and Self-efficacy.

The curriculum designs provide suggestions for interactive and differentiated learning experiences linked to the various sub strands and the other aspects of the CBC. They also offer several suggested learning resources and a variety of assessment techniques. It is expected that the designs will guide teachers to effectively facilitate learners to attain the expected learning outcomes for Grade Four and prepare them for smooth transition to Grade Five Furthermore; it is my hope that teachers will use the adapted designs to make learning interesting, exciting and enjoyable.

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ACKNOWLEDGEMENT

The Kenya Institute of Curriculum Development (KICD) Act Number 4 of 2013 (Revised 2019) mandates the Institute to develop and review (*SNE adapt*) curricula and curriculum support materials for basic and tertiary education and training. The curriculum development process for any level of education involves thorough research, international benchmarking and robust stakeholder engagement. Through a systematic and consultative process, the KICD conceptualised the Competency Based Curriculum (CBC) as captured in the Basic Education Curriculum Framework (BECF)2017, that responds to the demands of the 21st Century and the aspirations captured in the Constitution of Kenya 2010, the Kenya Vision 2030, East African Community Protocol, International Bureau of Education Guidelines and the United Nations Sustainable Development Goals (SDGs).

KICD receives its funding from the Government of Kenya to facilitate successful achievement of the stipulated mandate and implementation of the Government and Sector (Ministry of Education (MoE) plans. The Institute also receives support from development partners targeting specific programmes. The revised Grade Four curriculum designs for learners with Hearing Impairment were developed and adapted with the support of the World Bank through the Kenya Primary Education Equity in Learning Programme (KPEELP); a project coordinated by MoE. Therefore, the Institute is very grateful for the support of the Government of Kenya, through the MoE and the development partners for policy, resource and logistical support. Specifically, special thanks to the Cabinet Secretary-MoE and the Principal Secretary – State Department of Basic Education.

I also wish to acknowledge the KICD curriculum developers and other staff, all teachers, educators who took part as panelists; the Semi-Autonomous Government Agencies (SAGAs) and representatives of various stakeholders for their roles in the development and adaptation of the Grade Four curriculum designs for learners with Hearing Impairment. In relation to this, I acknowledge the support of the Chief Executive Officers of the Teachers Service Commission (TSC) and the Kenya National Examinations Council (KNEC) for their support in the process of developing and adapting these designs. Finally, I am very grateful to the KICD Council Chairperson and other members of the Council for very consistent guidance in the process.

I assure all teachers, parents and other stakeholders that this curriculum design will effectively guide the implementation of the CBC at Grade Four and preparation of learners with Hearing Impairment for transition to Grade Five.

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NATIONAL GOALS OF EDUCATION

Education in Kenya should:

i) Foster nationalism and patriotism and promote national unity.

Kenya's people belong to different communities, races and religions, but these differences need not divide them. They must be able to live and interact as Kenyans. It is a paramount duty of education to help young people acquire this sense of nationhood by removing conflicts and promoting positive attitudes of mutual respect which enable them to live together in harmony and foster patriotism in order to make a positive contribution to the life of the nation.

ii) Promote the social, economic, technological and industrial needs for national development.

Education should prepare the youth of the country to play an effective and productive role in the life of the nation.

a) Social Needs

Education in Kenya must prepare children for changes in attitudes and relationships which are necessary for the smooth progress of a rapidly developing modern economy. There is bound to be a silent social revolution following in the wake of rapid modernization. Education should assist our youth to adapt to this change.

b) Economic Needs

Education in Kenya should produce citizens with the skills, knowledge, expertise and personal qualities that are required to support a growing economy. Kenya is building up a modern and independent economy which is in need of an adequate and relevant domestic workforce.

c) Technological and Industrial Needs

Education in Kenya should provide learners with the necessary skills and attitudes for industrial development. Kenya recognizes the rapid industrial and technological changes taking place, especially in the developed world. We can only be part of this development if our education system is deliberately focused on the knowledge, skills and attitudes that will prepare our young people for these changing global trends.

iii) Promote individual development and self-fulfilment

Education should provide opportunities for the fullest development of individual talents and personality. It should help children to develop their potential interests and abilities. A vital aspect of individual development is the building of character.

- iv) Promote sound moral and religious values.**
Education should provide for the development of knowledge, skills and attitudes that will enhance the acquisition of sound moral values and help children to grow up into self-disciplined, self-reliant and integrated citizens.
- v) Promote social equality and responsibility.**
Education should promote social equality and foster a sense of social responsibility within an education system which provides equal educational opportunities for all. It should give all children varied and challenging opportunities for collective activities and corporate social service irrespective of gender, ability or geographical environment.
- vi) Promote respect for and development of Kenya's rich and varied cultures.**
Education should instil in the youth of Kenya an understanding of past and present cultures and their valid place in contemporary society. Children should be able to blend the best of traditional values with the changing requirements that must follow rapid development in order to build a stable and modern society.
- vii) Promote international consciousness and foster positive attitudes towards other nations.**
Kenya is part of the international community. It is part of the complicated and interdependent network of peoples and nations. Education should therefore lead the youth of the country to accept membership of this international community with all the obligations and responsibilities, rights and benefits that this membership entails.
- viii) Promote positive attitudes towards good health and environmental protection.**
Education should inculcate in young people the value of good health in order for them to avoid indulging in activities that will lead to physical or mental ill health. It should foster positive attitudes towards environmental development and conservation. It should lead the youth of Kenya to appreciate the need for a healthy environment.

LESSON ALLOCATION FOR UPPER PRIMARY (GRADES 4, 5 & 6)

S/ No.	Learning Area	No. of Lessons
1	English for Learners with Hearing Impairment	5
2	Kiswahili for Learners with Hearing Impairment	4
3	Mathematics for Learners with Hearing Impairment	5
4	Religious Education	3
5	Science & Technology for Learners with Hearing Impairment	4
6.	Agriculture & Nutrition for Learners with Hearing Impairment	4
7.	Social Studies for Learners with Hearing Impairment	3
8	Creative Arts for Learners with Hearing Impairment	6
9.	Pastoral/ Religious Instruction Programme	1
	Total	35

Note: Sign Language skills or Kenyan Sign Language for learners with Hearing Impairment to be implemented as Non formal (Co-Curricular) Programmes.

LEVEL LEARNING OUTCOMES

By the end of the Primary Education, the learner should be able to:

- a) Communicate appropriately using sign language, verbal and or non-verbal modes in a variety of contexts,
- b) Demonstrate mastery of number concepts to solve problems in day to day life,
- c) Demonstrate social skills, moral and religious values for positive contribution to society,
- d) Develop one's interests and talents for personal fulfilment,
- e) Make informed decisions as local and global citizens of a diverse, democratic society in an interdependent world,
- f) Explore, manipulate, manage and conserve the environment effectively for learning and sustainable development,
- g) Acquire digital literacy skills for learning and enjoyment,
- h) Appreciate the country's rich, diverse cultural heritage for harmonious living.

ESSENCE STATEMENT

Science and Technology is a learning area which engages in the human pursuit to understand the relationships between the living and non-living universe. Science is a discipline that deals with explanations and predictions about nature and the universe while Technology is the application of science to create devices that can solve problems and do tasks.

The achievement of Vision 2030 greatly depends on Science, Technology and Innovation. Sessional Paper No.1 of 2005 highlights the fact that for a breakthrough towards industrialisation, achievement of the desired economic growth targets and social development, a high priority needs to be placed on the development of human capital through education and training by promoting the teaching of sciences and information technology. This is also highlighted in the Sessional Paper 14, 2012 which stresses the need for sustainable basic and higher education, with an emphasis on Science, Technology and Innovation (ST&I). This makes it necessary for Science and Technology to be taught in Upper Primary Education level.

This learning area builds on the competencies introduced at the lower primary under the learning area of Environmental Activities and equips the learner with pre-requisite skills which are required in Integrated Science and Pre-technical and Pre-career studies at the lower secondary level. These enable learners to prepare for Science, Technology, Engineering and Mathematics (STEM) in subsequent levels of the education cycle. Inquiry based learning (IBL), Project based learning (PBL), Problem based learning (PBL) and Social Scientific Issue learning (SSI) approaches will be employed throughout the learning experiences in this area as advocated for by John Dewey's social constructivist theory which emphasises the learner should be given an opportunity to learn through hands-on activities. Engineering design shall be used as a pedagogical strategy to bridge science concepts with other learning areas to solve simple open-ended problems, develop creative thinking and analytical skills among learners, make decisions, and consider alternative solutions to address a variety of situations.

The design incorporates visual cues, such as pictures, animations, models, captioned video clips, simulations, charts, and illustrations, to simplify abstract concepts. Additional assessment methods suitable for a learner with hearing impairment, such as signed questions and observation, are included. A science and engineering fair is also part of the non-formal activities. Teachers are encouraged to devise signs for various concepts and terminologies that might be absent from the science-specific dictionary and to provide concisely signed instructions or procedures during experiments, demonstrations, and projects. To effectively support both categories of learners—those who are hard of hearing and those who are deaf—the teacher should use proper articulation of signs with correct mouth movement during instruction.

SUBJECT GENERAL LEARNING OUTCOME

1. Interact with the environment for learning and sustainable development.
2. Apply digital literacy skills appropriately for communication, learning and enjoyment.
3. Appreciate the contribution of science and technology in the provision of innovative solutions.
4. Use scientific knowledge to observe and explain the natural world.
5. Make functional discoveries that impact individuals and the wider society.
6. Use innovative approaches as well as critical thinking and problem solving skills to stimulate scientific inquiry, at the local, national and global levels for lifelong learning.

SUMMARY OF STRANDS AND SUB STRANDS

Strands	Sub Strands	Suggested number of lessons
1.0 Living things and their Environment	1.1. Plants	12
	1.2. Animals	12
	1.3. The Human Digestive System	16
2.0. Matter	2.1. Properties of matter	14
	2.2. Management of solid waste	16
	2.3. Water conservation	12
3.0. Force and energy	3.1. Force and its effect	12
	3.2. Light	14
	3.3. Heat	12
	Total number of lessons	120

NOTE:

The suggested number of lessons per Sub Strand may be less or more depending on the context.

Strand 1.0 Living things and their Environment

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry questions
<p>1.0 Living things and their Environment</p>	<p>1.1 Plants (12 lessons)</p> <ul style="list-style-type: none"> ● <i>Characteristics of plants as living things</i> ● <i>Functions of external parts of plants</i> 	<p>By the end of the sub strand the learner should be able to:</p> <ol style="list-style-type: none"> a) sign words related to plants, b) identify characteristics of plants as living things, c) describe functions of external parts of a plant, d) demonstrate responsibility while handling plants. 	<ul style="list-style-type: none"> ● In groups, learners are guided to search for the meaning and sign of the words related to plants such as (<i>roots, stems, branches, flowers and leaves</i>). Ensure learners observe proper cyber ethics while conducting online searches. ● in groups, learners are guided to observe a demonstration by the teacher on signs of words related to plants. ● in pairs, learners are guided to finger-spell and sign words related to plants. In case a sign is missing, learners are guided to create and harmonise meaningful signs for communication purposes. ● in groups, learners are guided to take an expedition in the school environment to collect 	<ol style="list-style-type: none"> 1. Why are plants important? 2. Why are plants considered as living things?

			<p>sample plants and note their characteristics.</p> <ul style="list-style-type: none"> • in groups, learners are guided to watch a captioned video on the characteristics of plants as living things. (<i>grow, reproduce, remove waste, respond to changes in their environment, and die</i>). To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. • in purposive groups, learners are guided to discuss and make summary notes on the characteristics of living plants as living things. Ensure learners are seated in an appropriate arrangement that supports the use of bilingual communication during the discussion, accommodating both the hard of hearing and the deaf learners. • in groups, learners are guided to prepare charts and deliver class presentations on the 	
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			<p>characteristics of living plants as living things. After the presentations, any mistakes made are corrected.</p> <ul style="list-style-type: none"> • in groups, learners are guided to observe a labelled diagram of the external parts and functions of a plant and identify the parts. • in groups, learners are guided to observe specimens of plant seedlings and make summary notes on the functions of the external parts of a plant (<i>roots, stems and leaves</i>). • in pairs, learners are guided to draw and label the external parts of a plant and their functions then display the drawing in class for peer review. <p>Project-</p> <p>Learners plant seeds, observe as they grow and record the changes taking place.</p>	
<p>Core competencies to be developed:</p>				

<ul style="list-style-type: none"> • Communication and Collaboration: Teamwork skill is enhanced as the learner collaboratively plants seeds and records evidence of growth, reproduction, removal of waste, response to changes in their environment and death of the plant. • Creativity and imagination: Flexibility skill is enhanced as the learner utilises different methods to record evidence that plants: grow, reproduce, remove waste, respond to changes in their environment and die.
<p>Values:</p> <ul style="list-style-type: none"> • Responsibility: The learner displays self-drive as they plant seeds, observe as they grow and record the changes taking place. • Respect: etiquette is developed as the learner listens to and appreciates others opinion during discussions on the characteristics and functions of plants.
<p>PCIs:</p> <p>Safety and Security: The learner observes safety while handling different types of plants (poisonous and non-poisonous) as they take a walk in the school compound and the neighbourhood to observe, discuss and record evidence that plants</p>
<p>Links to other Learning areas:</p> <p>The information on characteristics of plants as living things is linked to study different types of crops in Agriculture and Nutrition.</p>
<p>Suggested Learning Resources;</p> <ul style="list-style-type: none"> • Actual plants • Cameras • Non print and print media • Video clips • Beans and maize seedlings

Strand	Sub-Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry questions
<p>1.0 Living things and their Environment</p>	<p>1.2 Animals.</p> <ul style="list-style-type: none"> • <i>Characteristics of animals as living things.</i> • <i>Vertebrates and invertebrates.</i> <p>(12 lessons)</p>	<p>By the end of the sub strand, the learner should be able to;</p> <ol style="list-style-type: none"> a) sign words and concepts related to animals as living things, b) identify the characteristics of animals as living things, c) distinguish vertebrates from invertebrates in the environment, d) demonstrate responsibility while handling animals. 	<ul style="list-style-type: none"> • In groups, learners are guided to search for the meaning and sign of the words related to animals as living things. While conducting online searches, learners are cautioned to observe proper cyber ethics. • in groups, learners are guided to search for the meaning and sign of the words related to plants such as (<i>roots, stems, branches, flowers and leaves</i>). ensure learners observe proper cyber ethics while conducting online search • in pairs, learners practise to fingerspell and sign words related to animals as living things. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. • in purposive groups, learners are guided to take an expedition in the school compound to observe and record the characteristics of animals as living things. 	<ol style="list-style-type: none"> 1. How are animals different from each other? 2. Why are animals considered as living things?

			<ul style="list-style-type: none"> • in groups, learners are guided to discuss the characteristics of animals as living things such as; feed, grow, breathe, reproduce, remove waste, move, respond to changes in their environment and die. arrange seating to support bilingual discussions for both hard-of-hearing and deaf learners. • in groups, learners are guided to prepare charts and deliver class presentations on the characteristics of animals as living things. Correct any mistakes made after the presentations. • in groups, learners are guided to watch a captioned video on vertebrates and invertebrates and record their observations. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. • in purposive groups, learners are guided to sort pictures or cards of animals into categories of vertebrates and invertebrates. 	
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			<ul style="list-style-type: none"> • in groups, learners are guided to use magazine cut-outs to create a portfolio then display it in class for peer review. • in groups, learners are guided to take an expedition in the school compound and classify local animals observed as either vertebrates or invertebrates. • in groups, learners are guided to prepare charts and deliver a class presentation on the differences between vertebrates and invertebrates. 	
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Core competencies to be developed:

- Communication and collaboration: The learner develops signing skills by participating actively in discussions about the main differences between vertebrates and invertebrates.
- Creativity and Imagination: Observation skill is enhanced as the learner discovers new ways of doing things by observing how other learners are developing a portfolio of vertebrates and invertebrates using magazine cut outs.
- Learning to learn: The learner develops relationships as they collaboratively use print and captioned non-print media to search for information on characteristics of animals.

Values:

- Responsibility: The learner shows diligence as they engage in roles and duties assigned by the teacher when making a portfolio of vertebrates and invertebrates.
- Respect: The learner demonstrates humility by appreciating divergent ideas from peers as they discuss the main differences between vertebrates and invertebrates.

PCIs:

Safety and security: personal safety and security skills are developed as the learner observes safety when handling animals.

Links to other learning areas:

The information on characteristics of animals as living things is linked to the study of livestock in Agriculture and Nutrition.

Suggested Learning Resources

- Charts
- Cameras
- Print and non-print media
- Flowers,

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry question
1.0 Living things and their Environment	1.3 Human digestive system (16 lessons) <ul style="list-style-type: none"> • <i>Parts of the human digestive system (mouth, gullet, stomach, small intestines, large intestines, rectum, anus)</i> • <i>Healthy digestive system (dental hygiene, deworming, healthy eating)</i> • <i>Symptoms of unhealthy digestive system, (stomach ache/pain, bloating, worms, diarrhoea, vomiting, constipation)</i> 	<p>By the end of the sub strand, the learner should be able to;</p> <p>a) sign words related to the human digestive system for learning,</p> <p>b) identify parts of the human digestive system,</p> <p>c) develop a plan of maintaining a healthy human digestive system,</p> <p>d) appreciate the importance of a healthy human digestive system.</p>	<ul style="list-style-type: none"> • in groups, learners are guided to search for the meaning and sign of the words related to the human digestive system. Learners are cautioned to observe proper cyber ethics. • in groups, learners are guided to search for the meaning and sign of the words related to the human digestive system. Learners are cautioned to observe proper cyber ethics. • in pairs, learners practise to fingerspell and sign words related to the human digestive system. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. • in groups, learners are guided to observe a chart with a labelled diagram of the human digestive system and fingerspell and sign each part • in pairs, learners are guided to draw and label the human digestive system and display the 	<p>1. How does food move after being swallowed?</p> <p>2. How is a healthy digestive system maintained?</p>

			<p>drawings in class for peer review.</p> <ul style="list-style-type: none"> • in groups, learners are guided to watch a captioned video on ways of maintaining a healthy human digestive system. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. • in groups, learners are guided to discuss ways of maintaining a healthy digestive system, record findings and share with peers. Ensure a seating arrangement that will support bilingual discussions to favour both hard-of-hearing and deaf learners. • in groups, learners are guided to prepare charts and make a class presentation on maintaining a healthy digestive system. Correct any mistakes made after the presentations. • in groups, learners are guided to observe pictures showing symptoms of an unhealthy digestive system. • in groups, guide learners to discuss symptoms of an unhealthy digestive system, record and share with peers. 	
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Core competencies to be developed:

- Learning to learn: The learner develops relationships with peers as they share available resources when preparing charts for the class presentations.
- Digital literacy: The learner connects using technology as they use digital devices to watch captioned video on the human digestive system.

Values:

- Unity - cooperation: The learner collaborates with others while discussing ways of maintaining a healthy digestive.
- Respect - open mindedness as the learner appreciates others' opinions while discussing the symptoms of an unhealthy digestive system.

PCIs:

- Health issues: The learner observes dental hygiene, regular deworming and healthy eating.

Links to other learning areas:

The content on ways of maintaining a healthy digestive system is linked to the study of personal hygiene and hygienic handling of food in Agriculture and Nutrition.

Suggested learning resources:

- Simulation software (eg Cyber School)
- Online interactive platforms or digital images
- Charts
- Models
- Digital devices.

Assessment Rubric				
Level	Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Indicators				
Ability to sign words related to living things and their environment	Signs words related to living things and their environment with great level of accuracy and fluency in the production of signs.	Signs words related to living things and their environment with accuracy and clear production of signs.	Signs words related to living things and their environment with inconsistency and shows basic level of fluency in the production of signs	Signs words related to living things and their environment with significant errors in articulation and fluency in the production of signs.
Ability to identify characteristics of plants and animals	The learner accurately identifies a wide range of characteristics in plants and animals	The learner accurately identifies all characteristics of plants and animals	The learner accurately identifies most of the characteristics of either plants or animals	The learner identifies a few characteristics of either plants or animals
Ability to describe functions of external parts of a plant	The learner accurately provides highly detailed descriptions of functions of external parts of the plant,	The learner accurately describes the functions of all external parts of the plant	The learner provides basic descriptions of functions of two external parts of the plant	The learner describes the functions of one external part of the plant
Ability to identify parts of the human digestive system	The learner exhaustively identifies parts of the human digestive system	The learner correctly identifies all parts of the human digestive system	The learner identifies most of the parts of the human digestive system	The learner identifies a few parts of the human digestive system
Ability to develop a plan of maintaining a healthy human digestive system	Develops a plan of maintaining a healthy human digestive system by exceptionally planning, organising and pays exceptional attention to detail. Completes well in advance.	Develops a plan of maintaining a healthy human digestive system.	Develops a plan of maintaining a healthy human digestive system with noticeable gaps or inconsistencies in the process.	Develops a plan of maintaining a healthy human digestive system with inadequate planning, critical oversights and omissions of procedures.

Strand 2.0 Matter

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry question
<p>2.0 Matter</p>	<p>2.1 Properties of matter</p> <ul style="list-style-type: none"> • Meaning of matter • states of matter (<i>solid, liquid and gas</i>) • Properties of matter (<i>shape, volume and mass</i>) • Importance of the different states of matter 	<p>By the end of the sub strand the learner should be able to;</p> <ol style="list-style-type: none"> a) sign words related to properties of matter, b) categorise substances in the environment into the three states of matter, c) describe the properties of the three states of matter, d) appreciate the importance of the different states of matter in day-to-day life. 	<ul style="list-style-type: none"> • In groups, learners are guided to search for the meaning and sign of the words related to the properties of matter such as matter, solid, liquid and gas. Learners are cautioned to observe proper cyber ethics. • in pairs, learners practise to fingerspell and sign words related to properties of matter. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. • in groups, learners are guided to watch a captioned video on states of matter. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. • in groups, learners are guided to sort pictures or cards showing various substances into 	<p>How do particles exist in the environment?</p>

			<p>categories of solid, liquid and gas.</p> <ul style="list-style-type: none"> • in groups, learners are guided to carry out activities to demonstrate the properties of the three states of matter (<i>shape, volume and mass</i>) with peers. • in groups, learners are guided to collect and group different substances from the environment into the three states of matter. 	
<p>Core competencies to be developed:</p> <ul style="list-style-type: none"> • Communication and collaboration: Teamwork skill is developed as the learner works with peers to carry out activities that show properties of matter. • Digital literacy: The learner interacts with digital technology to observe the properties of the three states of matter. • Self-efficacy: The learner collects and groups different substances from the environment into the three states of matter. 				
<p>Values: Unity: The learner collaborates with others when collecting different substances from the environment.</p>				
<p>Pertinent and Contemporary Issues: Health issues (preventive health): The learner avoids blowing air into the same balloon with others when carrying out activities to demonstrate the properties of the three states of matter</p>				
<p>Link to other learning area: Mathematics: The learner weighs different substances using a beam balance which is also done in mathematics.</p>				

Suggested learning resources:

- Balls and balloons with different shapes and sizes
- Containers with different shapes and volumes.
- Liquids.
- Solids with different shapes and sizes.
- Digital devices.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry question
2.0 Matter	<p>2.2 Management of Solid Waste</p> <p>(16 lessons)</p> <ul style="list-style-type: none"> ● Types of solid wastes (<i>decomposing and non-decomposing (plastic, metals, food wrappers, kitchen waste)</i>) ● Dangers of solid waste to the environment ● Managing wastes in places (<i>classrooms, schools, home, public functions</i>) ● Methods of managing solid waste (<i>reuse, reduce and recycle</i>) ● Safety measures during solid waste management 	<p>By the end of the sub strand, the learner should be able to;</p> <ol style="list-style-type: none"> a) sign words related to management of solid waste in the environment, b) classify solid waste into decomposable and non-decomposable, c) describe the dangers of solid waste to the environment, d) apply appropriate methods to manage solid waste in the environment, e) appreciate the need for proper management of solid waste in the environment. 	<ul style="list-style-type: none"> ● In groups, learners are guided to search for the meaning and sign of the words related to management of solid waste in the environment. Learners are cautioned to observe proper cyber ethics. ● in pairs, learners practise to fingerspell and sign words related to management of solid waste in the environment. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. ● in purposive groups, learners are guided to walk around the school and collect various solids waste found in the locality. ● in groups, learners are guided to observe and identify types of solid waste collected from the locality. ● in groups, learners are guided to conduct an activity to determine which of the collected solid waste 	<p>How is solid waste dangerous to the environment?</p>

			<p>would decompose if buried in the soil.</p> <ul style="list-style-type: none"> • in groups, learners are guided to sort pictures or cards showing various solid wastes into categories of decomposable and non-decomposable • in purposive groups, learners are guided to watch a captioned video on the dangers of solid waste to the environment. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. • in groups, learners are guided to share experiences and discuss the dangers of solid waste to the environment. Learners to be seated in an appropriate arrangement that supports the use of bilingual communication during the discussion, accommodating both the hard of hearing and the deaf learners. • in groups, learners observe a demonstration on the methods of managing different types of waste 	
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			<p>in their environment (<i>to include re-using, recycling and Reducing</i>), Hint: <i>Include common waste in school and environment such as kitchen, animal waste, plastics, e-waste, metals and glasses,</i></p> <ul style="list-style-type: none"> • in groups, learners are guided to use proper safety measures in solid waste management (<i>wearing protective gears and use of appropriate tools</i>), • in groups, learners are guided to use digital devices or print media to access and observe ways of managing different types of solid waste. • in groups, learners are guided to manage different types of solid wastes in their environment as observed from the demonstrations and video/animated clips. <p>Projects:</p> <ol style="list-style-type: none"> 1. Learners to make dust bins for safe disposal of waste at home and in school using locally available materials, 2. Make toys or ornaments from solid waste. 	
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Core competencies to be developed:

- Critical thinking and problem solving: The learner develops the skill of interpretation and inference by applying different ways to manage different types of solid wastes in their environment.
- Creativity and imagination: The learner develops exploration skills by making dust bins for safe disposal of waste at home and in school using locally available materials.

Values:

Responsibility: The learner develops accountability when using proper safety measures in solid waste management. (wearing protective gears and use of appropriate tools)

Pertinent and Contemporary Issues:

- Health promotion issues: preventive health as the learner discusses the dangers of solid waste to the environment and presents in class
- Environmental Education and Climate Change: Recycled Art Projects; Making of toys, ornaments or various forms of art from solid waste.

Links to other Learning areas:

- The learner related skills from creative arts to make ornaments

Suggested learning resources:

- Digital devices
- Print and non-print media
- Solid wastes
- Tools and materials for collecting and managing solid wastes.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry Questions
2.0 Matter	<p>2.3 Water conservation</p> <p>(12 Lessons)</p> <ul style="list-style-type: none"> • Meaning of water conservation • Methods of conserving water <i>(cover: Simple examples of reducing water wastage, Reusing water and Recycling water)</i> • Importance of water conservation 	<p>By the end of the Sub Strand, the learner should be able to;</p> <ul style="list-style-type: none"> a) sign words related to water conservation in the environment, b) explain the meaning of water conservation in the environment, c) describe methods of conserving water at home and school, d) outline the importance of conserving water at home and school, e) develop interest in conserving water. 	<ul style="list-style-type: none"> • In groups, learners are guided to search for the meaning and sign of the words related to water conservation in the environment. Learners are cautioned to observe proper cyber ethics. • in pairs, learners practise to fingerspell and sign words related to water conservation in the environment. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. • in groups, learners are guided to brainstorm on the meaning of water conservation. • in groups, learners are guided to share experiences and discuss how water is wasted at home and school. Learners to be seated in an appropriate arrangement that supports the use of bilingual communication during the discussion, accommodating both the hard of hearing and the deaf learners. 	<ol style="list-style-type: none"> 1. Why is it important to conserve water? 2. How is water conserved?

			<ul style="list-style-type: none"> • in groups, learners are guided to watch captioned/signed video clips or animated presentations on how water is wasted • in groups, learners are guided to explore the school locality and identify how water is conserved by peers. • in pairs, learners search for and watch signed/captioned video clips, animations or observe pictures showing different methods of water conservation. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. • in groups, learners discuss and record ways of conserving water. • in groups, learners are guided to prepare charts and make class presentations on ways of conserving water. (<i>Correct any mistakes made after the presentations.</i>) • in groups, learners are guided to discuss the importance of 	
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			<p>conserving water and present in class.</p> <ul style="list-style-type: none"> • in groups, learners practise responsible use of water at home and school. • in groups learners prepare posters to sensitise the school and home community on the importance of water conservation. 	
<p>Core competencies to be developed:</p> <ul style="list-style-type: none"> • Citizenship: The learner displays responsibility to the community by practising responsible use of water at home and school. • Critical thinking and problem solving: The learner identifies water wastage as a problem affecting the society and sensitises the school and home communities on the importance of water conservation. 				

Values <ul style="list-style-type: none">● Responsibility: Accountability-The learners use water appropriately without wastage.
Pertinent and Contemporary Issues: <ul style="list-style-type: none">● Socio-economic issues: financial literacy; The learner reduces cost of water by reducing water wastage.
Linkage to other learning area: <p>The learner related the knowledge of water conservation to appropriate farm water conservation practices like drip irrigation and mulching in Agriculture and Nutrition.</p>
Suggested Learning Resources: <ul style="list-style-type: none">● Digital devices.● Science Specific Signs Dictionary● Print and non-print media.● Course books.

Assessment Rubric				
Level	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Indicators/				
Ability to sign words related to matter.	The learner signs words related to matter with great level of accuracy and fluency in the production of signs.	The learner signs words related to matter with accuracy and clear production of signs.	The learner signs words related to matter with inconsistency and shows basic level of fluency in the production of signs	The learner signs words related to matter with significant errors in articulation and fluency in the production of signs.
Ability to describe the properties of the states of matter	The learner describes the properties of the states of matter in an exceptionally detailed and specific manner.	The learner describes the properties of the states of matter	The learner describes the properties of the states of matter with some details but lacks specificity.	The learner describes the properties of the states of matter with limited details to convey a clear picture of the concepts.
Ability to manage solid waste in the environment	The learner manages solid waste in the environment consistently and applies the concept or skill well.	The learner manages solid waste in the environment	The learner manages solid waste in the environment showing inconsistency in applying the skills or concepts.	The learner manages solid waste in the environment showing little effort in applying the concept.
Ability to outline the importance of conserving water	The learner outlines the importance of conserving water in an exceptionally detailed and specific manner, providing a vivid account.	The learner outlines the importance of conserving water	The learner outlines the importance of conserving water with some details but lacks specificity.	The learner outlines the importance of conserving water with limited details to convey a clear picture of the concept.

Strand 3.0 Force and Energy

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry Questions
3.0 Force and Energy	3.1 Force and its effect (12 lessons) <ul style="list-style-type: none"> ● Types of forces (<i>force of gravity and force of friction</i>) ● Effects of force on objects (<i>change of shape, start motion, stop moving objects, increase speed, decrease speed, change direction and hold objects together</i>) ● Uses of force in day to day life 	By the end of the sub strand the learner should be able to: <ol style="list-style-type: none"> a) sign words related to forces in nature, b) describe types of forces in nature, c) demonstrate the effects of force on objects in nature, d) describe the uses of force in daily life, e) appreciate the importance of force in day-to-day life. 	<ul style="list-style-type: none"> ● In groups, learners are guided to search for the meaning and sign of the words related to forces in nature. Learners are cautioned to observe proper cyber ethics. ● in pairs, learners practise to fingerspell and sign words related to forces in nature. in case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. ● in groups, learners are guided to brainstorm on the meaning of “force” as used in science. ● in groups, learners observe a demonstration on the existence of the forces of gravity and friction in nature. ● in pairs, learners are guided to carry out activities that demonstrate the existence of the forces of gravity and friction in nature. (Throwing a ball up, raising and releasing stones to fall, tipping books to fall from the table, pulling objects on rough and smooth 	<ol style="list-style-type: none"> 1. Why is force important? 2. How does force affect objects?

			<p>surfaces, lighting a matchstick, and walking on rough and slippery surfaces.)</p> <ul style="list-style-type: none"> ● in groups, learners observe a demonstration on the effects of force on objects. ● in pairs, learners are guided to carry out activities in groups to demonstrate the effects of force on objects (<i>change of shape, start motion, stop moving objects, increase speed, decrease speed, change direction and hold objects together</i>). ● in groups, learners are guided to prepare charts and make class presentations on effects of force on an object in nature. Correct any mistakes made after the presentations. ● in groups, learners are guided to watch a captioned video on uses of force in day-to-day life (Wheelbarrow, tug of war, pulling and pushing a hand-cart, ox cart, pushing a bicycle, falling bodies). ● in groups, learners are guided to discuss ways of minimising friction between moving bodies (smoothing surfaces, greasing, oiling, use of rollers, ball bearings). 	
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			<ul style="list-style-type: none"> ● in groups, learners observe a demonstration to discuss ways of minimising friction between moving bodies. Ensure learners to be seated in an appropriate arrangement that supports the use of bilingual communication during the discussion, accommodating both the hard of hearing and the deaf learners. ● in pairs learners are guided to carry out activities on ways of minimising friction between moving bodies. ● in groups, learners are guided to watch a captioned video on the applications of force of friction and force of gravity in day-to-day life. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. 	
<p>Core competencies to be developed:</p> <ul style="list-style-type: none"> ● Learning to learn: learn independent skills as the learner gains new information while using digital devices to search for, observe and discuss uses of force in day-to-day life. ● Communication and collaboration: The Learner enhances their speaking/signing skills as they explain and demonstrate simple experiments the effect of a force on an object in groups. 				
<p>Values:</p> <ul style="list-style-type: none"> ● Love: The learner cares for one another as they work in groups discussing the application of force of friction and force of gravity in day-to-day life. ● Unity: The learner exercises inclusion as they brainstorm on the meaning of “force” as used in science. 				

- **Citizenship:** The learner exercises leadership as they work in groups discussing the application of force of friction and force of gravity in day-to-day life.

PCIs:

Environmental Education and Climate Change: Exploration carry out activities that demonstrate the existence of force of gravity and force of friction in nature.

Linkage to other learning area:

The learner related the knowledge of minimising friction to care and maintenance of farm equipment in agriculture and nutrition.

Suggested Learning Resources

- Balls
- Plastic bottles
- Print and captioned non print media
- Digital devices
- Kitchen appliances

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry Questions
3.0 Force and Energy	3.2 Light (14 lessons) <ul style="list-style-type: none"> ● Sources of light ● Ways of lighting the house (<i>windows, translucent roofs, artificial lighting</i>), ● Uses of light (<i>to see, safety, discourage pests</i>) 	By the end of the sub strand, the learner should be able to; <ol style="list-style-type: none"> a) sign words related to light in nature, b) identify the sources of light in nature, c) describe ways of lighting a house, d) explain the uses of light in day-to-day life, e) appreciate the applications of light in day-to-day life. 	<ul style="list-style-type: none"> ● In groups, learners are guided to search for the meaning and sign of the words related to light in nature. Learners are cautioned to observe proper cyber ethics. ● in pairs, learners practise to fingerspell and sign words related to light in nature. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. ● in groups, learners are guided to brainstorm the meaning of light ● in groups, learners are guided to search for and watch signed/captioned video clips, animations or pictures showing different sources of light. To enhance comprehension, the video is occasionally paused, allowing learners to take notes and internalise the presented information. 	<ol style="list-style-type: none"> 1. Why is light important in day-to-day life? 2. How is light used at home or school?

			<ul style="list-style-type: none"> • in groups, learners are guided to share experiences and discuss sources of light in day to day life. • in groups, learners are guided to discuss ways of lighting a house (windows, translucent roofs, artificial lighting). Learners to be seated in an appropriate arrangement that supports the use of bilingual communication during the discussion, accommodating both the hard of hearing and the deaf learners. • in groups, learners are guided to walk in the school compound and identify ways of lighting a house. • in groups, learners are guided to share experiences and discuss the importance of lighting in day-to-day life. • in groups, learners are guided to prepare charts and make class presentations on the importance of lighting in day-to-day life. Correct any mistakes made after the presentations. 	
<p>Core competencies to be developed:</p> <ul style="list-style-type: none"> • Creativity and imagination: exploration as the learner expresses their creativity and imagination when using digital devices to identify, draw, paint and type the names of sources of light. 				

- Digital literacy: The learner interacts with technology as they use digital devices to identify, draw, paint and type the names of sources of light.

Values:

- Respect: The learner exercises patience with one another as they discuss the uses of lighting in day-to-day life.
- Social justice: The learner fosters fairness when sharing resources like digital devices to identify, draw, paint and type the names of sources of light.

PCIs:

Environmental Education- Exploration: The learner appreciates the value of various sources of light in nature, importance of lighting in day to day and discovers different ways of lighting a house.

Links to other Learning areas:

- Pre-technical and Business studies as the learners seek alternative cost-effective ways of lighting a house.
- Creative Arts: as the learner draws and paints the sources of light.

Suggested Learning Resources:

- Digital devices.
- Interactive apps.
- Print and non-print media.
- Course book
- Science specific signs dictionary

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Suggested Key inquiry Questions
3.0 Force and energy	3.3 Heat (12 Lessons) <ul style="list-style-type: none"> • Sources of heat (<i>sun, fire, electricity</i>) <i>Uses of heat (Cooking, warming, ironing and drying)</i> • Safety measures when handling heat • Importance of heat in daily life 	By the end of the sub strand the learner should be able to: <ol style="list-style-type: none"> a) sign words related to heat in nature, b) identify sources of heat in nature, c) demonstrate uses of heat in day-to-day life, d) describe safety measures when using heat, e) appreciate the importance of heat in day-to-day life. 	<ul style="list-style-type: none"> • In groups, learners are guided to search for the meaning and sign of the words related to heat in nature. Learners are cautioned to observe proper cyber ethics. • in pairs, learners practise to fingerspell and sign words related to heat in nature. In case a sign is missing, learners are guided to harmonise meaningful signs for communication purposes. • in groups, learners are guided to use print and non-print media to search for the meaning of heat. • in groups, learners are guided to discuss in groups the sources of heat (sun, fire, electricity, gas). Learners to be seated in an appropriate arrangement that supports the use of bilingual communication during the discussion, accommodating both the hard of hearing and the deaf learners. 	<ol style="list-style-type: none"> 1. Why is heat important in day-to-day life? 2. How is heat used at home and school?

			<ul style="list-style-type: none"> • in groups, learners are guided to share experiences on the uses of heat in day-to-day life. • in groups, learners are guided to carry out activities to demonstrate the uses of heat in day-to-day life (keeping warm, drying, cooking, and food preservation). • in groups, learners are guided to watch a captioned video on the safety measures to observe when carrying out activities to demonstrate the uses of heat in day-to-day life. • in groups, learners are guided to observe a demonstration on safety measures and practices necessary when using heat. • in groups, learners are guided to deliver a signed public speech on the importance of heat. 	
<p>Core competencies to be developed:</p> <ul style="list-style-type: none"> • Learning to learn: Learn independently skills as the learner gains information when searching for the meaning of heat, source and uses. • Digital literacy: The learner interacts with online digital technology to search for safety measures and practices necessary when using heat. 				
<p>Values: Unity: The learner cooperates with peers when discussing the sources of heat.</p>				

PCIs:

Disaster risk reduction: safety at school and home the learner exercises safety and security as they carry out activities to demonstrate the uses of heat in day-to-day life.

Links to other Learning areas:

Agriculture and Nutrition: as learners apply the concept of heat in drying grains, hatching of chicks, pests' control.

Suggested Learning Resources

- Digital devices
- Print and non-print media
- Charcoal stove.
- Firewood.

Assessment Rubric				
Level Indicators	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to sign words related to force and energy.	The learner signs words related to force and energy with great level of accuracy and fluency in the production of signs.	The learner signs words related to force and energy with accuracy and clear production of signs.	The learner signs words related to force and energy with inconsistency and shows basic level of fluency in the production of signs	The learner signs words related to force and energy with significant errors in articulation and fluency in the production of signs.
Ability to demonstrate the effects of force on objects in nature	The learner demonstrates the effects of force on objects in nature, consistently applying the concept.	The learner demonstrates the effects of force on objects in nature.	The learner demonstrates the effects of force on objects in nature showing inconsistency in applying the concept.	The learner demonstrates the effects of force on objects in nature showing little effort in applying the concept.
Ability to identify the sources of light in nature	The learner identifies the sources of light in nature consistently indicating key elements.	The learner identifies the sources of light in nature.	The learner identifies the sources of light in nature missing out some key elements.	The learner identifies the sources of light in nature showing inaccuracies.
Ability to explain the uses of light in day-to-day life	The learner explains the uses of light in day-to-day life in an exceptionally clear, well-organised, and easy to follow manner.	The learner explains the uses of light in day-to-day life	The learner explains the uses of light in day-to-day life in a clear manner but may lack organisation.	The learner explains the uses of light in day-to-day life in an unclear and disorganised manner.
Ability to demonstrate uses	The learner demonstrates uses of heat in day-to-day	The learner demonstrates uses of heat in day-to-day life	The learner demonstrates uses of heat in day-to-day	The learner demonstrates uses of heat in day-to-day

of heat in day-to-day life	life consistently applying the concept.		life showing inconsistency in applying the concept.	life showing little effort in applying the concept.
Ability to describe safety measures when using heat	The learner describes safety measures when using heat in an exceptionally detailed and specific manner, providing a vivid account.	The learner describes safety measures when using heat	The learner describes safety measures when using heat with some details but lacks specificity.	The learner describes safety measures when using heat with limited details to convey a clear picture of the concept.

APPENDIX I: CSL AT UPPER PRIMARY (GRADE 4-6)

At this level, the goal of the CSL activity is to provide linkages between concepts learnt in the various Learning Activities and the real-life experiences. Learners begin to make connections between what they learn and the relevance to their daily life. CSL is hosted in the Social studies learning area. The implementation of the CSL activity is a collaborative effort where the class teacher coordinates and works with other subject teachers to design and implement the integrated CSL activity. Though they are teacher-guided, the learners should progressively be given more autonomy to identify problems and come up with solutions. The safety of the learners should also be taken into account when selecting the CSL activity. The following steps for the integrated CSL activity should be staggered across the school terms:

Steps in carrying out the integrated CSL activity

1) Preparation

- Map out the targeted core competencies, values and specific learning areas skills for the CSL activity
- Identify resources required for the activity (locally available materials)
- Stagger the activities across the term (Set dates and time for the activities)
- Communicate to learners, parents/caregivers/guardians, school administration, teachers and other relevant stakeholders in the school community
- Identify and develop assessment tools

2) Implementation CSL Activity

- Assigning roles to learners.
- Ensure every learner actively participates in the activity
- Observe learners as they carry out the CSL activity and record feedback.
- Use an appropriate assessment tool to assess both the process and the product (Assess learner's work from the beginning to the end product)
- Assess the targeted core competencies, values and subject skills.

3) Reflection on the CSL Activity

Conduct a self-evaluation session with learners on the integrated CSL activity undertaken by discussing the following:

- What went well and why
- What did not go well and why,
- What can be done differently next time
- What they have learnt.

There will be **one** integrated CSL activity that will be conducted **annually**. The thematic areas for the integrated CSL activity will be derived from the broader categories of the PCIs and concepts from the various Learning Areas. Teachers are expected to vary the themes yearly to allow learners to address different PCIs within their contexts. There should be a linkage between the skills from the learning areas and the themes.

The integrated CSL activity will take a Whole School Approach (WSA) where the entire school community is involved (learners, parents/caregivers/guardians, school administration, teachers). Parents/caregivers/guardians are key stakeholders in the planning and execution of the CSL activity. Although the teacher takes the lead role in the planning and integration of the CSL activity, learners will be expected to participate actively in the whole process.

The CSL activity provides an opportunity for the development of core competencies and the nurturing of various values. The teacher is expected to vary the core competencies and values emphasised in the activity yearly.

Assessment of the CSL Activity

Assessment of the integrated CSL activity will focus on 3 components namely: skills from various learning areas applied in carrying out the activity, and core competencies and values demonstrated. Assessment should focus on both the process and end product of the CSL activity. The teacher will assess learners in groups using various tools such as an observation schedule, checklist or rating scale or any other appropriate tool.

APPENDIX: LIST OF ASSESSMENT METHODS AND NON-FORMAL ACTIVITIES

Assessment Methods in Science	Learning Resources	Non-Formal Activities
<ul style="list-style-type: none"> • Reflections • Game Playing • Pre-Post Testing • Model Making • Explorations • Experiments • Investigations • Conventions, Conferences, and Debates • Applications • Teacher Observations • Project • Journals • Portfolio • Oral or Aural Questions • Learner’s Profile • Written Tests • Anecdotal Records 	<ul style="list-style-type: none"> • Laboratory Apparatus and Equipment • Textbooks • Software • Relevant reading materials • Digital Devices • Recordings 	<ul style="list-style-type: none"> • Visit science historical sites • Use digital devices to conduct scientific research • Organising walks to have live learning experiences • Developing simple guidelines on how to identify and solve some community problems • Conducting science document analysis • Participating in talks by resource persons on science concepts • Participating in science clubs and societies • Attending and participating science and engineering fairs • Organizing and participating in exchange programmes. • Making oral presentations and demonstrations on science issues.