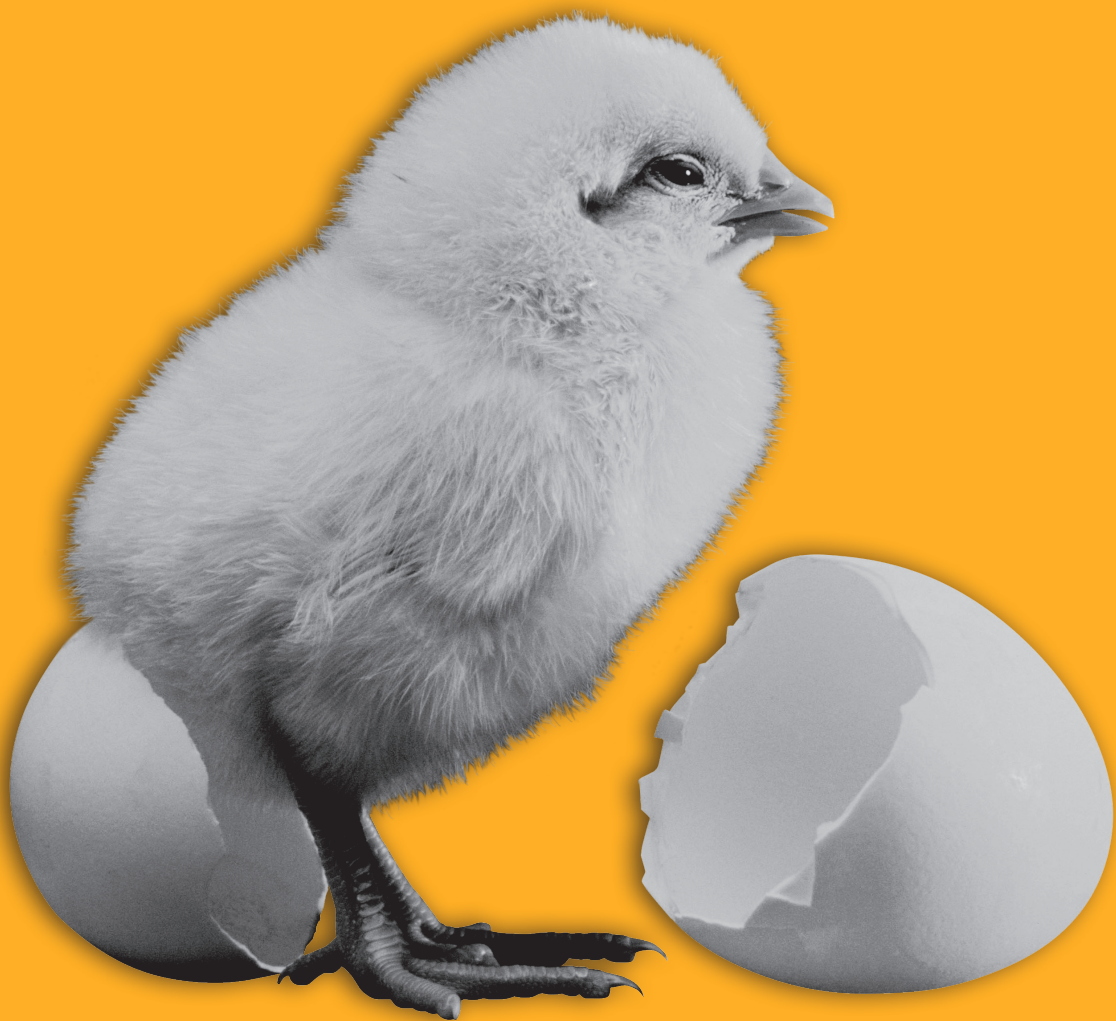


# ESSENTIAL Science

## Primary 1

Teacher's Guide



CAMBRIDGE



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Teacher's Guide

John Wilberforce Essiah



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NNF Esquire Limited  
P.O. Box AN 8644, Accra - North, Ghana.  
024 4608 305  
020 2113 117

**CAMBRIDGE**  
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University Printing House, Cambridge CB2 8BS, United Kingdom  
One Liberty Plaza, 20th Floor, New York, NY 10006, USA  
477 Williamstown Road, Port Melbourne, VIC 3207, Australia  
314-321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India  
79 Anson Road, #06-04/06, Singapore 079906  
The Water Club, Beach Road, Granger Bay, Cape Town, 8005, South Africa

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First published 2022

22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Printed in Ghana

ISBN 978-9988-8974-9-9 Paperback

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# CONTENTS

<b>Structure of the Teacher's Guide</b>	<b>4</b>
<b>Organisation and Structure of the Learner's Book</b>	<b>7</b>
<b>Introduction</b>	<b>10</b>
Role of the teacher in the effective use of the Learners Book	10
Philosophy	11
Instructional guidelines	11
Classroom management	11
Pedagogical and assessment	12
Use of ICT	13
Assessment	14
<b>Sample Rubric for Assessing Learners performance</b>	<b>15</b>
Core competencies	16
Learning domain (Expected learning behaviours)	16
Time allocation	18
Inclusion	18
Differentiation and scaffolding	18
Organisation of the curriculum	19
<b>Illustration of curriculum</b>	<b>20</b>
<b>Structure of curriculum</b>	<b>20</b>
<b>Difference between the traditional and learning centered classrooms</b>	<b>21</b>
<b>Scope and Sequence</b>	<b>22</b>
<b>Sample Yearly Scheme of Learning</b>	<b>23</b>
<b>Sample Lesson</b>	<b>24</b>
<b>Strand 1: Diversity of living things</b>	<b>27</b>
<b>Sub-strand 1:</b> Living and non-living things	28
<b>Sub-strand 2:</b> Materials	39
<b>Strand 2: Cycles</b>	<b>49</b>
<b>Sub-strand 1:</b> Earth science	50
<b>Sub-strand 2:</b> Life cycles of organisms	62
<b>Strand 3: Systems</b>	<b>67</b>
<b>Sub-strand 1:</b> The human body systems	68
<b>Sub-strand 2:</b> Ecosystem	71
<b>Strand 4: Forces and energy</b>	<b>75</b>
<b>Sub-strand 1:</b> Sources and forms of energy	76
<b>Sub-strand 2:</b> Electricity and electronics	80
<b>Sub-strand 3:</b> Forces and movement	84
<b>Strand 5: Humans and the environment</b>	<b>89</b>
<b>Sub-strand 1:</b> Personal hygiene and sanitation	90
<b>Sub-strand 2:</b> Diseases	99
<b>Sub-strand 3:</b> Science and industry	101
<b>Sub-strand 4:</b> Climate change	106

## Structure of the Teacher's Guide

The concise Teacher's Guide is organized under the following headings and features.

### Sub-Strand

NaCCA, Ministry of Education 2019 curriculum Sub-strand covered.

### Strand

The relevant NaCCA, Ministry of Education 2019 curriculum Strand covered is in the top bar.

#### Strand 1: DIVERSITY OF MATTER

#### Sub-strand 1: LIVING AND NON-LIVING THINGS

#### LESSON 1: Different kinds of things

LB: pages 2 - 16; WB: pages 6 - 8

##### CONTENT STANDARD

**B1.1.1.1** Show understanding of the physical features and life processes of living things and use this understanding to classify them.

##### INDICATOR

**B1.1.1.1.1** Observe and describe different kinds of things in the environment.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ♦ Mention names of common things in the home and school.
- ♦ Describe different kinds of things in the environment.
- ♦ Sort things in the environment into living and non-living.

##### NEW WORDS

living things, non-living things, grow, move, breathe, leaves, object.

##### RESOURCES

Video/pictures on plants and animals, different non-living things such as stones, leaves and soil.

##### CORE COMPETENCIES

Personal Development and Leadership, Digital Literacy, Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Innovation.

##### SUBJECT SPECIFIC PRACTICES

Observing, Classifying.

##### HELPFUL LINKS

- <https://byjus.com/biology/living-and-non-living-things/>
- [http://www.softschools.com/language\\_arts/reading\\_comprehension/science/21/living\\_and\\_non\\_living\\_things/](http://www.softschools.com/language_arts/reading_comprehension/science/21/living_and_non_living_things/)
- <https://www.youtube.com/watch?v=vqxomJIBGcY>

##### Background information

There are many things in the home, school or community. They can be classified as **living things**, or **non-living things**.

##### Starter

Ask learners, what is the name of your parents? Let them know that everybody has a mother and a father. They are the people who gave birth to us. Baby Lions also have a mother and father.

##### Use of ICT

1. Find videos or pictures before the class on living and non-living things.
2. Show learners videos of how these things help them and some uses of living and non living things.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Ask learners to mention the names of common things they see at home and school.
- Refer them to pages 2 to 4 of their book. Lead them to identify the items in the pictures.
- Let them know that the things that can grow big, move and eat are called **living things**.
- Take learners through the pictures and notes on page 6 of their learner's book. Guide them to talk about the three pictures on the top page. Let them know that those things cannot breathe or grow, so they are called **non-living things**.

##### Activity 2

- Sorting things into living and non-living**
- Learners go round the school community to identify living and non-living things.
  - Guide learners to work in groups to sort items into living and non-living.

### Page reference

You will find the the Learner's Book and Workbook page references on the top right/left for each lesson.

### Background information

Refers to the details that identify and describe the significance and historical value of the lesson topic. it is a vital element, as it provides relevant, factual details that are related to a specific topic.

### New words

Every lesson in the series identifies key words that learners are expected to know and use appropriately. These are relevant to the lesson.

### Resources

Helps to aid preparation. The series identifies all the relevant resources necessary to deliver a successful lesson. Resources identified are mostly "NO COST" or "LOW COST" materials that teachers can easily acquire to make their lessons more meaningful and enjoyable.

### Helpful links

Comprehensive site of helpful links for educational or teaching tips and ideas are provided under some lessons. This are internet links to text, pictures and videos that you will use during the lessons. Download them ahead of the lesson.

### Teaching instructions

You will find all activities you are expected to perform under each lesson here. References are made to the Learner's Book were necessary.

**Indicator**

This feature indicates the specific things that learners need to know and be able to demonstrate in order to achieve the content standards. Lessons are generated from these indicators.

**Content Standard**

This feature indicates the broad expectations under the strands that learners are expected to achieve in the course of completing that grade level.

**Learning Expectations**

are provided to help both teachers and learners identify what learners are required to know, understand and do in order to achieve the learning indicator(s).

**Core competencies**

The universal core competencies as stated under each sub-strand in the curriculum is outlined here.

**Subject specific practices**

This is the specific methods or practices which are used to teach a particular lesson under the sub-strand.

Strand 1: DIVERSITY OF MATTER

Sub-strand 1: LIVING AND NON-LIVING THINGS

LESSON 1: Different kinds of things

LB: pages 2 - 16; WB: pages 6 - 8

**CONTENT STANDARD**  
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Video/pictures on plants and animals, different non-living things such as stones, leaves and soil.

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Personal Development and Leadership, Digital Literacy, Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Innovation.

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- <https://www.youtube.com/watch?v=vqxomJIBGcY>

**Background information**  
There are many things in the home, school or community. They can be classified as **living things**, or **non-living things**.

**Starter**  
Ask learners, what is the name of your parents? Let them know that everybody has a mother and a father. They are the people who gave birth to us. Baby Lions also have a mother and father.

**Use of ICT**

1. Find videos or pictures before the class on living and non-living things.
2. Show learners videos of how these things help them and some uses of living and non living things.

**Teaching Instructions**  
Before the lesson drill the new words and ask learners to form sentences with it.

**Activity 1**

- Ask learners to mention the names of common things they see at home and school.
- Refer them to pages 2 to 4 of their book. Lead them to identify the items in the pictures.
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- Take learners through the pictures and notes on page 6 of their learner's book. Guide them to talk about the three pictures on the top page. Let them know that those things cannot breathe or grow, so they are called **non-living things**.

**Activity 2**  
**Sorting things into living and non-living**

- Learners go round the school community to identify living and non-living things.
- Guide learners to work in groups to sort items into living and non-living.

**Starter**

Starters help in preparing learners for new skills, methods or concepts, reinforcing previous steps necessary for this new learning/ lesson.



## Talk About

Engage learners to discuss the Talk About question on page 34 of the Learner's Book.

## Project for home or school

Guide learners to understand what is expected of them. They are to:

1. Observe common things around the home.
2. Write 5 examples of living things around their homes.
3. Write 5 examples of non-living things around the home.

## What I have learnt:

Go through this section with them to summarise the lesson.

1. The things around us are grouped as living or non-living things.
2. Living things can grow, move, eat food and make babies.
3. Non-living things cannot grow, they cannot eat food nor make babies.
4. Examples of common living things are dogs, cats, trees and humans.
5. Water, books, cars and stones are examples of non-living things.

## Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 33 of the Learner's Book and pages 15 - 16 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Why am I a living thing?. Give four reasons.
- What is the difference between a dog and a car? Give three reasons.
- Write or discuss with a friend.

## Answers to Review Exercise

1. Suggested Answers: teachers, boys, girls, friends, insects, plants, animals, birds
2.
  - a. non-living thing
  - b. non-living thing
  - c. living thing
  - d. living thing
  - e. living thing

3. Suggested Answers: walk, talk, move, grow, eat, see, sing, dance

## Answers to Workbook questions

### Trial 1

Suggested answers: Pictures: ball, egg, ant, frog, tomato plant, toy car, lizard, bed, giraffe, shirt.

### Trial 2

1. living thing
2. cannot grow bigger
3. make babies
4. a non-living thing
5. blackboard

### Trial 3

Learners to draw.

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to "TRAP" the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what plans (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## Project for home or school

In every lesson, an exploration of the concepts learned in the classroom is further extended to the home. The series suggests relevant home activities that help learners to augment and consolidate what has been learnt in the classroom and its real life application where necessary..

## Diagnostic Assessment

The teacher is expected to assess him/herself to ascertain whether the lesson was successful or not. Directives are provided at the end of every lesson to help the teacher do this.

## Assesment for learning

The feature directs teachers in checking learners' understanding of the lesson indicator(s) by way of assessing them. References are made to "Exercises" in the Learner's Book and Trials.

## Answers

Expected answers are provided for all exercises under every lesson in the Learner's Book and Trials in the Workbook. Where answers are to vary from one learner to the other, it is mentioned.

## Extension Assessment

Additional assessment task is provided after every lesson for the teachers use. This is expected to be done by gifted learners in the class.

## Organisation and structure of the Learner's Book

The user-friendly Learner's Book tackles the new standard-based Science curriculum features and criteria with a clear and logical structure that incorporates the following features.

### Strand Opener

There are five “strands” in the Learner's Book – one for each of the Science curriculum. This precedes the beginning of contents under each strand.

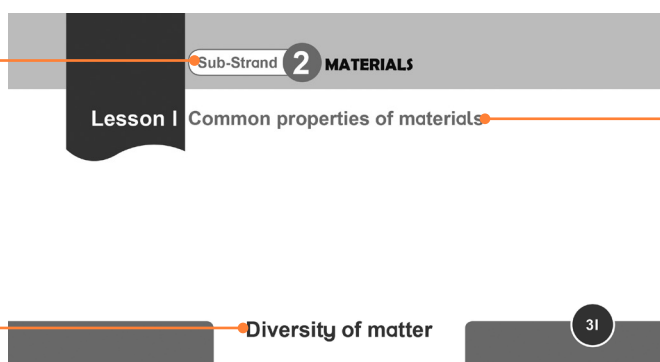


### Header and footer labels

**Strand:** This feature indicates the particular strand from which the lessons are developed.

**Sub-strand:** These are larger groups of related science topics to be studied under each strand.

**Lesson:** This feature specifies the lesson number under a sub-strand. The lessons are derived from the indicators.



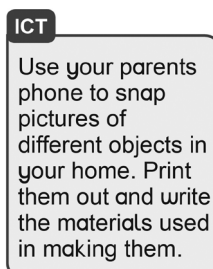
### New words

- build subject-specific vocabulary gradually, giving learners the confidence to understand it clearly and apply it in context and through different exercises.



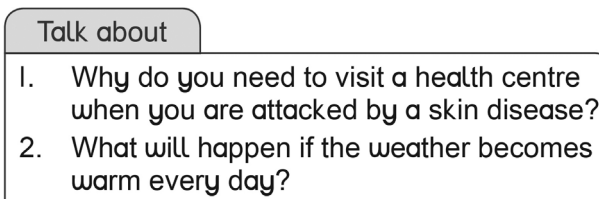
### ICT boxes

- include research activities
- emphasise the core competencies



### Talk about

- Learners are expected to discuss questions either in groups or in pairs. It is a critical thinking section that also helps their communication and collaborative skills





## Think and do

- Learners perform activities and exercise which require deep thinking here.

## Think and do

Use your drawing/exercise book.

- Draw and colour what you see at daytime in school.
- Draw and colour what you see at home at night time.

## Project for home and school

- It helps consolidate what learners have already learnt in class. You are expected to direct learners on what they are to do either at home or in school

## Project for home or School

Draw and colour the mist you saw during Christmas last year.

## What I have learnt

- helps summarise what have been learnt under each lesson
- through questioning, the teacher assesses what the learners have learnt.

## WHAT I HAVE LEARNT

- Mist is formed when water-vapour in the atmosphere is trapped in the sky.
- Mist makes it difficult to see clearly.

## Review Exercise

- learners practice and consolidate what they have been taught. This provides an opportunity for all learners to strengthen their newly acquired knowledge.

## Review Exercise

### Exercise I

Match the numbers with the words to show the order in which mist is formed.

Pools	1
Mist	2
run-off water	3
Land	4
Evaporation	5

### Activities

- incorporate accurate and current individual, pair and group work activities that help learners to explore and practise what they have learnt
- incorporate exercises that allow learners to answer questions about what they have learnt and consolidate learning
- address the syllabus content standards and core competencies
- are representative of the indicators and exemplars
- have instructions and text that are consistent and clearly presented to learners
- promote problem-solving and subject understanding

### Activity

- Draw a person suffering from ringworm in the hair and skin.
- Draw and colour a boy suffering from chicken pox.

### Text and content


- use language that is appropriate to the level, age, knowledge and background of the learners
- are representative of Ghana's diversity
- have a good gender balance and portray no gender stereotypes

### Illustrations and photos

- are high-quality and representative of Ghana's diversity
- balance the text on every page and add to learners' understanding of the content
- have captions and labels that are simple, relevant, appropriate, and clear
- reflect a variety of learners (including learners with special needs)
- show no gender stereotypes

**Lesson 1** Uses of energy


Look and say something about the picture below.




**New words**  
chemical, solar, energy, candle, light, work, flashlight

What is energy?  
Energy is used every day. We use energy when **eating food**.  
All living things use energy.

**Sub-Strand 1 SOURCES AND FORMS OF ENERGY**



lighted candle



switching on light



All the pictures above are using energy.  
Energy is the ability to do work.

98 Forces and energy

Forces and energy 99

## INTRODUCTION

Science is such a broad subject that it is broken down into disciplines or branches based on the particular area of study. Learn about the different branches of science from these introductions. Then, get more detailed information about each science.

The objective of this Teacher's Guide is to make teaching and learning more interactive, practical, useful and to bring out the ingenuity of teacher professionalism in the teacher to produce well equipped learners for national development.

This Teacher's Guide has been carefully designed to help teachers teach effectively using the Learner's Book and its accompanying Workbook.

The Teacher's Guide helps teachers to prepare adequately for each lesson by suggesting the following:

- Expected outcomes of the lesson
- The subject specific practices and core competencies to be developed in the lesson
- The pedagogical approaches to be used for the lesson
- The resources to be used in teaching the lesson
- The main points of the lesson
- Ideas or tasks that stimulate critical thinking among learners.

It is expected that after carefully studying the Teachers' Guide, teachers will be able to:

1. Know the provisions in the Learner's Book in terms of Aims, Values, Core Competences and School Time Allocations.
2. Know the recommended teaching and Assessment approaches for each lesson.
3. Understand the structure and scope of sequence of the science curriculum.
4. Prepare schemes of learning for a given academic year, term or week.
5. Select and design appropriate assessment tasks for a given lesson.

Ultimately, the Teacher's Guide will contribute tremendously in ensuring the smooth implementation of the new standards-based science curriculum for primary Schools.

### Role of the Teacher in the effective use of the Learner's Book

The Curriculum encourages the creation of a learning-centred classroom with the opportunity for learners to engage in meaningful "hands-on" activities that bring home to the learner what they are learning in school and what they know from outside of school.

The teacher as a facilitator needs to create a learning environment that supports:

- The creation of learning-centred classrooms through the use of creative approaches to teaching and learning as strategies to ensuring learner empowerment and independent learning.
- The positioning of inclusion and equity at the centre of quality teaching and learning.
- The use of differentiation and scaffolding as teaching and learning strategies for ensuring that no learner is left behind.
- The use of Information and Communications Technology (ICT) as a pedagogical tool.
- The identification of subject specific instructional expectations needed for making learning in the subject relevant to learners.
- The integration of assessment for learning, as learning and of learning into the teaching and learning process and as an accountability strategy.
- Using questioning techniques that promote deeper learning.

### Rationale for Primary Science

Science forms an integral part of our everyday activities and it is a universal truth that development is hinged on Science. Science and Technology is the backbone of social, economic, political, and physical development of a country. It is a never-ending creative process, which serves to promote discovery and understanding. It consists of a body of knowledge which attempts to explain and interpret phenomena and experiences. Science has changed our lives and it is vital to Ghana's future development. To provide quality Science education,

teachers must facilitate learning in the Science classroom. This will provide the foundations for discovering and understanding the world around us and lay the grounds for Science and Science related studies at higher levels of education. Learners should be encouraged to understand how Science can be used to explain what is occurring, predict how things will behave and analyse causes and origins of things in our environment. The Science curriculum has considered the desired outcomes of education for learners at the basic level. Science is also concerned with the development of attitudes and therefore it is important for all citizens to be scientifically and technologically literate for sustainable development. Science therefore ought to be taught using hands-on and minds-on approaches which learners will find as fun and adopt Science as a culture.

## Philosophy

### Teaching Philosophy

Ghana believes that an effective Science education which is needed for sustainable development should be inquiry-based. Thus Science education must provide learners with opportunities to expand, change, enhance and modify the ways in which they view the world. It should be pivoted on learner-centred teaching and learning approaches that engage learners physically and cognitively in the knowledge-acquiring process, in a rich and rigorous inquiry-driven environment.

### Learning Philosophy

Science Learning is an active contextualized process of constructing knowledge based on learners' experiences rather than acquiring it. Learners are information constructors who operate as researchers. Teachers serve as facilitators by providing the enabling environment that promotes the construction of learners' own knowledge based on their previous experiences. This makes learning more relevant to the learner and leads to the development of critical thinkers and problem solvers.

## Instructional Guidelines

1. Guide and facilitate learning by generating discourse among learners and challenging them to accept and share responsibility for

their own learning based on their unique individual differences.

2. Select Science content, adapt and plan lessons to meet the interests, knowledge, understanding, abilities, and experiences of learners.
3. Work together as colleagues within and across disciplines and grade levels to develop communities of Science learners who exhibit the skills of scientific inquiry and the attitudes and social values conducive to Science learning.
4. Use multiple methods and systematically gather data about learners' understanding and ability, to guide Science teaching and learning with arrangements to provide feedback to both learners and parents.
5. Design and manage learning environments that provide students with the time, space, and resources needed for learning Science.

## Class management

Most teachers in Ghana teach large classes. Such classes are in the range of 40 to 100 learners or more. The teachers based on their professional experience over the years have developed skills in classroom methodology. Here are a few reminders about whole class, group, pair and individual work that could be helpful with large classes.

### Whole class teaching

Much of your teaching, especially when your class is large, will involve you standing at the front of the class explaining and listening to your learners. You can set out facts and concepts which everyone can understand. However, your class will vary in ability. More able learners should be given additional tasks to stretch their capabilities while those who find understanding more difficult should be given the time and attention they need.

When you introduce a topic make sure you use learners' existing knowledge and build upon it. The basic information for your lesson is in the text. If you are going to ask learners to read for themselves (at home or in class or to read out loud), work out during your lesson planning which words will be difficult for them to understand and explain these first. Make sure that all your learners have understood your explanation and give time to those having difficulty as well as talking and listening you will

find other activities can be very valuable during whole-class teaching, for example:

### Group work

Class teaching is large group work but sometimes there are advantages in working in pairs or groups of four to six learners: some children make more progress when working in a group of the same ability. On other occasions more able learners can help those who are not quite so quick at understanding. Groups of friends and groups working on different topics are other possible divisions that you could make.

For group work to be successful some thought must be given to the organization of class furniture. In most of our classrooms we still see rows of desks with several children to each desk. The classrooms are also often crowded so that it not easy to move the desks around. Whatever the situation some kind of group can be organised. At its most basic the group will have to be learners at one desk. It might be possible for those at one desk to turn around to face those at the desk behind.

There are many advantages in allowing a number of children to consider a topic, work jointly and bring their findings back to the whole class: each group will think in a slightly different way and have different experiences to share. Individual groups can study a picture together, or write a poem or discuss a topic like pollution in their village. You need to ensure that there is follow-up to group work so that work is not done in isolation but is instead considered by the class as a whole.

### Pair work

Learners are often instructed to work in pairs – either with their desk mate, or with a partner. This is an ideal opportunity for learners to assist each other, and for them to assess each other. Working with a desk mate offers the least classroom disturbance. The learners are already seated side-by-side. They ask and answer questions during Picture talk, and they discuss the readings before they write comprehension answers individually.

Working with a class mate that you have allocated to the learner means that you can pair a slower learner with a faster learner, so that they can help one another. You may also choose to pair learners of similar abilities together, so that they can proceed more quickly with the work, while you assist the slower pairs.

### Learner self-study

There will be times when you want the class to work as individuals to allow them to become familiar with material you have given them and to allow you to work with Learners of different abilities. It is worth bearing in mind that while there is a need for Learners to learn how to read and study on their own; there are also dangers in this approach. It is essential that the material they read is understandable to them, and that your attention is still focused on the class to ensure that all learners are using the time to read and not misbehave. Use additional material at different levels to ensure that some learners do not finish more quickly than others.

### Teaching tip

One of the most important skills in classroom management is the ability to ensure your learners are occupied for the whole lesson. If a group has finished its task and has nothing else to do it is likely to become disruptive. Break up your lesson and make sure it has several different parts:

- full class work
- individual work
- practical activities

## Pedagogy and Assessment

### Creative and Learning - Centred Pedagogies for Science

#### 1. *Activity-based learning, hands-on, creative, participatory method of learning.*

- Science teachers should device activities to suit the age group and skills of the learners.
- There should be variety in activities. Sorting of items into groups, creation of posters, hands-on activities. E.g separation samples of given mixtures.
- Activities should not only help gather knowledge, but apply and evaluate knowledge. E.g. designing and building objects from common materials.



## 2. **Demonstrations**

- The teacher retains the formal authority role by showing learners what they need to know. e.g. demonstrating how to construct an electronic circuit.

## 3. **Inquiry-based learning**

- Teachers design an investigation toward answering questions. E.g. How is soap produced within the local community?
- Learners carry out investigation – gather data (by asking their parents, people in the community).
- Develops information processing and problem-solving skills. (they learn about the steps/processes involved in soap making).
- Makes use of resources beyond classroom/school (visits to local production sites).

## 4. **Group work (think-pair-share, collaborative learning, problem-based learning, team based learning/ discussions)**

- Collaborative learning highlights the contributions of individual group members, and leads to dialogue and consensus building on topics without a clear right and wrong answer. E.g. placing learners into groups to discuss the physical features that enables various organisms to live in the sea, land or air.

## 5. **Project-based learning**

- Project-based learning is a teaching method in which learners gain knowledge and skills by working for an extended period of time. E.g. Reading and Recording the School/home's electricity consumption over a month.
- This focuses on investigating and responding to an authentic, engaging and complex question, problem, or challenge. E.g. How to solve the problem of poor sanitary conditions in the school.

## **Other Approaches for Teaching Science Learning**

- ICT Based Learning
- Engaging Learners in Meaningful Learning
- Organisation of Field Trips and Nature Walks
- Use of Concept Maps, Mind Maps and Future's Wheel

- Invitation of Professionals to make Class presentations
- Changing the learning setting
- Implementation of a Reward System
- Use of Educational games, songs and ice-breakers

## **Use of ICT**

The use of ICT is firmly incorporated in the Learners Book. During science lessons, learners need to be exposed to the various ICT tools around them.

Some schools in urban areas have access to computers in school or in libraries. Rural areas will become linked in the future. You should learn how to use a computer as soon as you are able. They open up the world as your resource. The internet can provide as much additional material as you will ever need. Once your learners have the chance to use a computer they too will have access to a world of information. This can be done through effective use of the following ICT tools:

- Laptop or desktop computers
- Smartphones
- Tablets
- CD players
- Projectors
- Calculators
- Radios
- Cameras
- Television sets
- Computer and related software, such as Microsoft Office packages (Word, PowerPoint and Excel).

ICTs are a useful communication technology that can by and large be used to enhance the quality of teaching and learning in schools. Internet systems have made the world a globalized one. It is for this that Professor Ali Mazrui describes globalisation as “the villagisation of the world” hence, the world being a “global village” (Marshall McLuhan and Quentin Fiore, 1968). This means all parts of the world are being brought together by the internet and other electronic communication interconnections. That is more information has become accessible anywhere in the world by way of interconnectedness and interdependency. You can communicate to anybody anywhere in the world from the comfort of your room, car and many more places. In



working towards the rationale of the Science curriculum, there is the urgent need for the teacher to display professionalism through effective use of ICTs in teaching and learning.

The teacher should try as much as possible to use whatever technological resources available such as any of those stated above to assist in teaching and learning. The use of ICTs in teaching and learning activities promotes a paradigm shift to learner-centered environment. Here are some useful ideas on how to go about this:

Integrate ICT's in the learning process, as a key competence and contributing to the acquisition of skills and knowledge;

- Use ICT's in the classroom to work on information processing, authentic communication, and on the learner autonomy, as the builder of his or her own learning process;
- Give ICT's a role to help young people be able to arrange, evaluate, synthesize, analyze and decide on the information that comes to them;
- Challenge students with different types of supports and formats and, therefore, a great variety of activities in which they pass from receivers to makers;
- Attend to the diversity or learning needs of students, using the copious offer of interactive exercises available on the web.

## Assessment

Assessment is a process of collecting and evaluating information about learners and using the information to make decisions to improve their learning.

In this Teacher's Guide, it is suggested that assessment is used to promote learning. Its purpose is to identify the strengths and weaknesses of learners to enable teachers ascertain their learner's response to instruction. Assessment is both formative and summative. Formative assessment is viewed in terms of **Assessment as learning** and **Assessment for learning**.

**Assessment as learning:** Assessment as learning relates to engaging learners to reflect on the expectations of their learning. Information that learners provide the teacher forms the basis for refining teaching-learning strategies. Learners are assisted to play their roles and to take responsibility of their own learning to improve performance. Learners are assisted to set their own goals and monitor their progress.

**Assessment for learning:** It is an approach used to monitor learner's progress and achievement. This occurs throughout the learning process. The teacher employs assessment for learning to seek and interpret evidence which serves as timely feedback to refine their teaching strategies and improve learners' performance. Learners become actively involved in the learning process and gain confidence in what they are expected to learn.

**Assessment of learning:** This is summative assessment. It describes the level learners have attained in the learning and what they know and can do over a period of time. The emphasis is to evaluate the learner's cumulative progress and achievement.

It must be emphasised that all forms of assessment should be based on the domains of learning. In developing assessment procedures, try to select indicators in such a way that you will be able to assess a representative sample from a given strand. Each indicator in the curriculum is considered a criterion to be achieved by the learners. When you develop assessment items or questions that are based on a representative sample of the indicators taught, the assessment is referred to as a "Criterion-Referenced Assessment". In many cases, a teacher cannot assess all the indicators taught in a term or year. The assessment procedure you use i.e. class assessments, homework, projects etc. must be developed in such a way that the various procedures complement one another to provide a representative sample of indicators taught over a period.

### Designing Assessment Tasks in the New Curriculum

- Puzzles, Fill-ins, Riddles, maze, scrambled words, true or false, Drawing, Spot the difference, Matching, Pick the odd one out, Objectives with options, rearrange, Gallery Walks,

Below is a sample rubric which you can use to assess your learners performance in science. This can be adapted and used for any assessment tool (exam, activity, PowerPoint)

### SAMPLE RUBRIC FOR ASSESSING LEARNERS SCIENCE PROCESS SKILLS

Rubric -Primary School Science	LEVEL 1 With strong prompting from the teacher	LEVEL 2 With some prompting from the teacher	LEVEL 3 With minimal prompting from the teacher	LEVEL 4 Without prompting from the teacher
OBSERVATION	Learners use one of her senses to observe basic information	Learners use at least one of her senses to observe basic information	Learner notices detailed characteristics and phenomena	learners <b>extend/ apply their observations</b> to related objects and/or events
INVESTIGATION	learners participate minimally in carrying out the experiment	learners participate in carrying out the experiment	learners participate in carrying out the experiment and asks “how”, “what”, and/or “why”	Learners express <b>strong sense of wondering</b> and carries out additional experiments
REASONING	Learners draw basic conclusions	Learners draw detailed conclusions	Learners draw connections between ideas and evaluates the choices	Learner ask “what if” and <b>makes hypotheses</b> about related objects and/or events
COMMUNICATION /REPORTING	Learners struggle to express what they did	Learners present conclusions partially supported by data	Learners effectively use data to express their conclusions, and uses materials/ role play/other methods of communication to present them	Learners use data to <b>clearly articulate</b> their observations, approach and findings with detail, and they use <b>creative methods</b> to present them
UNDERSTANDING	Learners present minimal understanding of the relevant concepts	Learners present weak connection between observation and concept	Learners present evidence of understanding of relevant concepts, theories or principles	Learners present <b>evidence of in-depth understanding</b> of relevant concepts, theories or principles

Source: NaCCA, Ministry of Education 2019

### Core Competencies

The core competencies describe a body of skills that teachers at all levels should seek to develop in their learners. They are ways in which teachers and learners engage with the subject matter as they learn the subject. The competencies presented here describe a connected body of core skills that are acquired throughout the processes of teaching and learning.

#### **Critical Thinking and Problem Solving (CP)**

This skill develops learners' cognitive and reasoning abilities to enable them analyse and solve problems. Critical thinking and problem solving skill enables learners to draw on their own experiences to analyse situations and choose the most appropriate out of a number of possible solutions. It requires that learners embrace the problem at hand, persevere and take responsibility for their own learning.

#### **Creativity and Innovation (CI)**

Creativity and Innovation promotes the development of entrepreneurial skills in learners through their ability to think of new ways of solving problems and developing technologies for addressing the problem at hand. It requires ingenuity of ideas, arts, technology and enterprise. Learners having these skills are also able to think independently and creatively.

#### **Communication and Collaboration (CC)**

These competence promotes in learners the skills to make use of languages, symbols and texts to exchange information about themselves and their life experiences. Learners actively participate in sharing their ideas. They engage in dialogue with others by listening to and learning from them. They also respect and value the views of others.

#### **Cultural Identity and Global Citizenship (CG)**

These competence involves developing learners to put country and service foremost through an understanding of what it means to be active citizens. This is done by inculcating in learners a strong sense of social and economic awareness. Learners make use of the knowledge, skills, competences and attitudes acquired to contribute effectively towards the socioeconomic development of the country and on the global stage. Learners build skills to critically identify and analyse cultural and global

trends that enable them to contribute to the global community.

#### **Personal Development and Leadership (PL)**

This competence involves improving self-awareness and building self-esteem. It also entails identifying and developing talents, fulfilling dreams and aspirations. Learners are able to learn from mistakes and failures of the past. They acquire skills to develop other people to meet their needs. It involves recognising the importance of values such as honesty and empathy and seeking the well-being of others. Personal development and leadership enables learners to distinguish between right and wrong. The skill helps them to foster perseverance, resilience and self-confidence. PL helps them acquire the skill of leadership, self-regulation and responsibility necessary for lifelong learning.

#### **Digital Literacy (DL)**

Digital Literacy develops learners to discover, acquire knowledge, and communicate through ICT to support their learning. It also makes them use digital media responsibly.

### Learning domains (expected learning behaviours)

A central aspect of this Teacher's Guide is the concept of three integral learning domains that should be the basis for instruction and assessment. These are:

- Knowledge, Understanding and Application
- Process Skills
- Attitudes and Values

Teachers must ensure that daily learning covers all these three important domains through the use of relevant resources, and utilization of appropriate teaching pedagogies and assessment tasks.

#### **KNOWLEDGE, UNDERSTANDING AND APPLICATION**

Under this domain, learners acquire knowledge through some learning experiences. They may also show understanding of concepts by comparing, summarising, re-writing etc. in their own words and constructing meaning from instruction. The learner may also apply the knowledge acquired in some new contexts. At a higher level of learning behaviour, the learner

may be required to analyse an issue or a problem.

### **SKILLS AND PROCESSES**

These are specific activities or tasks that indicate performance or proficiency in the learning of Science. They are useful benchmarks for planning lessons, developing exemplars and are the core of inquiry-based learning.

#### **Equipment and apparatus handling**

This is the skill of knowing the functions and limitations of various apparatus, and developing the ability to select and handle them appropriately for various tasks.

#### **Observing**

This is the skill of using the senses to gather information about objects or events. This also includes the use of instruments to extend the range of our senses.

#### **Classifying**

This is the skill of grouping objects or events based on common characteristics.

#### **Comparing**

This is the skill of identifying the similarities and differences between two or more objects, concepts or processes.

#### **Communicating/Reporting**

This is the skill of transmitting, receiving and presenting information in concise, clear and accurate forms - verbal, written, pictorial, tabular or graphical.

#### **Predicting**

This is the skill of assessing the likelihood of an outcome based on prior knowledge of how things usually turn out.

#### **Analysing**

This is the skill of identifying the parts of objects, information or processes, and the patterns and relationships between these parts.

#### **Generating possibilities**

This is the skill of exploring all the options, possibilities and alternatives beyond the obvious or preferred one.

#### **Evaluating**

This is the skill of assessing the reasonableness, accuracy and quality of information, processes or ideas. This is also the skill of assessing the quality and feasibility of objects.

#### **Designing**

This is the skill of Visualising and drawing new objects or targets from imagination.

#### **Measuring**

This is the skill of using measuring instruments and equipment for measuring, reading and making observations.

#### **Interpreting**

This is the skill of evaluating data in terms of its worth: good, bad, reliable, unreliable; making inferences and predictions from written or graphical data; extrapolating and deriving conclusions. Interpretation is also referred to as "Information Handling".

#### **Recording**

This is the skill of drawing or making graphical representation boldly and clearly, well labelled and pertinent to the issue at hand.

#### **Generalising**

This is the skill of being able to use the conclusions arrived at in an experiment to what could happen in similar situations.

#### **Designing of Experiments**

This is the skill of developing hypotheses; planning and designing of experiments; persistence in the execution of experimental activities; modification of experimental activities where necessary in order to reach conclusions.

#### **Values**

At the heart of this Teacher's Guide is the belief in nurturing honest, creative and responsible citizens. As such, every part of this Teacher's Guide, including the related pedagogy, should be consistent with the following set of values.

**Respect:** This includes respect for the nation of Ghana, its institutions and laws and the culture and respect among its citizens and friends of Ghana.

**Diversity:** Ghana is a multicultural society in which every citizen enjoys fundamental rights

and responsibilities. Learners must be taught to respect the views of all persons and to see national diversity as a powerful force for national development. The curriculum promotes social cohesion.

**Equity:** Socio-economic development across the country is uneven. Consequently, it is necessary to ensure an equitable distribution of resources based on the unique needs of learners and schools. Ghana's learners are from diverse backgrounds, and thus which require the provision of equal opportunities to all, and that, all strive to care for each other.

**Commitment to achieving excellence:** Learners must be taught to appreciate the opportunities provided through the curriculum and persist in doing their best in their fields of endeavour as global citizens. The curriculum encourages innovativeness through creative and critical thinking and the use of contemporary technology.

**Teamwork/Collaboration:** Learners are encouraged to become committed to team-oriented working and learning environments. This also means that learners should have an attitude of tolerance to be able to live peacefully with all persons.

**Truth and Integrity:** The curriculum aims to develop learners into individuals who will consistently tell the truth irrespective of the consequences, and be morally upright with an attitude of doing the right thing even when no one is watching. Learners are taught. Also, be true to themselves and be willing to live the values of honesty and compassion. Equally important, is the practice of positive values as part of the ethos or culture of the work place, which includes integrity and perseverance. These underpin the competencies learning processes to allow learners to apply skills and competencies in the world of work.

### Time allocation

A total of four periods a week, each period consisting of thirty minutes, is allocated to the teaching of Science at the lower basic level (**B1- B3**). It is recommended that the teaching periods be divided as follows:

**Theory:** 2 periods per week (30 minutes per period)

**Practical:** 2 periods per week (one double-period)

### Inclusion

Inclusion entails access and learning for all learners, especially, those disadvantaged. All learners are entitled to a broad and balanced curriculum in every school in Ghana. The daily learning activities to which learners are exposed should ensure that the learners' right to equal access to quality education is being met. The curriculum suggests a variety of approaches that address learners' diversity and their special needs in the learning process. These approaches when used in lessons, will contribute to the full development of the learning potential of every learner. Learners have individual needs and different learning styles, learning experiences and different levels of motivation for learning. Planning, delivery and reflection on daily learning episodes should take these differences into consideration. The curriculum therefore promotes:

- learning that is linked to the learner's background and to their prior experiences, interests, potential and capacities;
- learning that is meaningful because it aligns with learners' ability (e.g. learning that is oriented towards developing general capabilities and solving the practical problems of everyday life); and
- the active involvement of the learners in the selection and organisation of learning experiences, making them aware of their importance in the process and also enabling them to assess their own learning outcomes.

### Differentiations and scaffolding

This curriculum is to be delivered through the use of creative approaches. Differentiation and Scaffolding are pedagogical approaches to be used within the context of the creative approaches.

**Differentiation** is a process by which differences among learners (learning styles, interest and readiness to learn etc.) are accommodated so that all learners in a group have their best chance of learning. Differentiation could be by task, support and/or outcome. Differentiation, as a way of ensuring



each learner benefits adequately from the delivery of the curriculum, can be achieved in the classroom through:

- Task
- One-on-one support
- Outcome

**Differentiation by task** involves teachers setting different tasks for learners of different ability e.g. in sketching the plan and shape of their classroom some learners could be made to sketch with free hand while others would be made to trace the outline of the plan of the classroom.

**Differentiation by support** involves the teacher providing a targeted support to learners who are seen as performing below expected standards or at risk of not reaching the expected level of learning outcome. This support may include a referral to a Guidance and Counselling Officer for academic support.

**Differentiation by outcome** involves the teacher allowing learners to respond at different levels. In this case, identified learners are allowed more time to complete a given task.

**Scaffolding** in education refers to the use of a variety of instructional techniques aimed at moving learners progressively towards stronger understanding and ultimately greater independence in the learning process.

It involves breaking up the learning episodes, experiences or concepts into smaller parts and then providing learners with the support they need to learn each part. The process may require a teacher assigning an excerpt of a longer text to learners to read, engage them to discuss the excerpt to improve comprehension of its rationale, then guiding them through the key words/vocabulary to ensure learners have developed a thorough understanding of the text before engaging them to read the full text. Common scaffolding strategies available to the teacher include:

- giving learners a simplified version of a lesson, assignment, or reading, and then gradually increasing the complexity, difficulty, or sophistication over time;
- describing or illustrating a concept, problem, or process in multiple ways to ensure understanding;

- giving learners an exemplar or model of an assignment, they will be asked to complete;
- giving learners a vocabulary lesson before they read a difficult text;
- clearly describing the purpose of a learning activity, the directions learners need to follow, and the learning goals they are expected to achieve;
- explicitly describing how the new lesson builds on the knowledge and skills learners were taught in a previous lesson.

## Organisation of the Curriculum

The science curriculum has been structured into four columns which are Strands, Sub-strands, Content standards, Indicators and exemplars. A unique annotation is used for numbering the learning indicators in the curriculum for the purpose of easy referencing. The annotation is indicated in table 2.

### Example: B3 .2.4.1.2

ANNOTATION	MEANING/ REPRESENTATION
<b>B3</b>	<b>Year or Class</b>
2	Strand Number
4	Sub-Strand Number
1	Content Standard Number
2	Indicator Number

**Strands** are the broad areas/sections of the Science content to be studied.

**Sub-strands** are the topics within each strand under which the content is organised.

**Content standard** refers to the pre-determined level of knowledge, skill and/or attitude that a learner attains by a set stage of education.

**Indicator** is a clear outcome or milestone that learners have to exhibit in each year to meet the content standard expectation. The indicators represent the minimum expected standard in a year.

**Exemplar:** support and guidance which clearly explains the expected outcomes of an indicator and suggests what teaching and learning activities could take, to support the teachers in the delivery of the curriculum.



## ILLUSTRATION OF CURRICULUM STRUCTURE

Class		Content Standards		Learning Indicators	
Strand 1: DIVERSITY OF MATTER					
Sub-strand 1: Living and Non-Living Things					
B1		B2		B3	
B1.1.1.1: Show understanding of the physical features and life processes of living things and use this understanding to classify them		B2.1.1.1: Show understanding of the physical features and life processes of living things and use this understanding to classify them		B3.1.1.1: Show understanding of the physical features and life processes of living things and use this understanding to classify them.	
B4					
B4.1.1.1: Show understanding of the physical features and life processes of living things and use this understanding to classify them					
B1.1.1.1.1: Observe and describe different kinds of things in the environment.		B2.1.1.1.1: Describe the physical features of plants (roots, stem, leaves		B3.1.1.1.1: Group living things into plants and animals based on their physical features	
				B4.1.1.1.1: Group living things into plants and animals based on their uses	

Source: NaCCA, Ministry of Education 2019

## STRUCTURE OF CURRICULUM

The Science curriculum is structured to cover B1 to B3 under five strands with a number of sub-strands as shown in the table below:

STRAND	B1	B2	B3
	SUB-STRANDS	SUB-STRANDS	SUB-STRANDS
<b>DIVERSITY OF MATTER</b>	1. Living and Non-Living Things 2. Materials	1. Living and Non-Living Things 2. Materials	1. Living and Non-Living Things 2. Materials
<b>CYCLES</b>	1. Earth Science 2. Life Cycles of organisms	1. Earth Science	1. Earth Science 2. Life Cycles of organisms
<b>SYSTEMS</b>	1. The Human Body Systems 2. Ecosystems	1. The Human Body Systems 2. The Solar system	1. The Human Body Systems 2. The Solar system 3. Ecosystems
<b>FORCES AND ENERGY</b>	1. Sources and Forms of Energy 2. Electricity and electronics 3. Forces and Movement	1. Sources and Forms of Energy 2. Electricity and Electronics 3. Forces and Movement	1. Sources and Forms of Energy 2. Electricity and Electronics 3. Forces and Movement
<b>HUMANS AND THE ENVIRONMENT</b>	1. Personal Hygiene and Sanitation 2. Diseases 3. Science and Industry 4. Climate Change	1. Personal Hygiene and Sanitation 2. Diseases 3. Science and Industry 4. Climate Change	1. Personal Hygiene and Sanitation 2. Diseases 3. Science and Industry 4. Climate Change

## DIFFERENCE BETWEEN THE TRADITIONAL AND LEARNING-CENTRED CLASSROOM

	TRADITIONAL	LEARNING-CENTRED CLASSROOM
1.	Emphasis is on knowledge acquisition.	Emphasises the acquisition of skills and competencies.
2.	Learning is limited to the four walls of the classroom.	Learning takes place both in and outside the classroom (school compound, community, home, internet, etc.).
3.	Students constantly face the teacher and board.	The classroom is inviting. Desks can be rearranged to promote collaborative as well as independent work.
4.	Teacher restricted to provisions in the curriculum.	Gives room for teacher innovation.
5.	The teaching and learning tools are limited to pens, pencils, crayons and paper.	The teaching and learning process is enhanced by the use of modern technological gadgets such as smart phones, sound systems, computers, TV sets, smart boards, etc.
6.	The classroom environment is devoid of teacher-sponsored TLMs.	The classroom environment is laden with materials for sub-conscious learning.
7.	The teacher takes the centre stage and talks more than the learner.	The learner takes active part in the learning process and talks more.
8.	Here, mistakes are sanctioned.	Mistakes are tools for discovery and learning.
9.	Criterion-referenced assessment is emphasised. Learner's progression is based on score in exams.	Relies on different modes of assessment, progression is based on mastery of competency.
10.	Mainly focused on theoretical mode of teaching.	Plethora of learning modes.

Source: NaCCA, Ministry of Education 2019

## SCOPE AND SEQUENCE

STRAND	SUB-STRANDS	B1
DIVERSITY OF MATTER	Living and Non-Living Things	✓
	Materials	✓
CYCLES	Earth Science	✓
	Life Cycles of Organisms	✓
SYSTEMS	The Human Body Systems	✓
	The Solar system	
	Ecosystems	✓
FORCES AND ENERGY	Sources and Forms of Energy	✓
	Electricity and Electronics	✓
	Forces and Movement	✓
HUMANS AND THE ENVIRONMENT	Personal Hygiene and Sanitation	✓
	Diseases	✓
	Science and Industry	✓
	Climate Change	✓

Source: NaCCA, Ministry of Education 2019

## SAMPLE YEARLY SCHEME OF LEARNING – BASIC 1

Weeks	Term 1 (List term 1 Sub Strands)	Term 2 (List term 2 Sub Strands)	Term 3 (List term 3 Sub Strands)
1	Living and non- living things	Earth science	Forces and movement
2	Living and non-living things	Earth science	Forces and movement
3	Living and non-living things	Earth science	Personal hygiene and sanitation
4	Living and non-living things	Life cycles of organism	Personal hygiene and sanitation
5	Materials	Life cycles of organism	Personal hygiene and sanitation
6	Materials	The human body systems	Personal hygiene and sanitation
7	Materials	Ecosystem	Diseases
8	Materials	Sources and forms of energy	Science and industry
9	Earth science	Sources and forms of energy	Science and industry
10	Earth science	Electricity and electronics	Science and industry
11		Electricity and electronics	Climatechange

Source: NaCCA, Ministry of Education 2019

## SAMPLE LESSON – BASIC 1

<b>Date:</b> 14/03/2019	<b>Period:</b> Double period	<b>Subject:</b> Science
<b>Duration:</b> One hour	<b>Strand:</b> Systems	
<b>Class:</b> B1	<b>Class size:</b> 50	<b>Sub-strand:</b> The Human Body Systems
<b>Content Standard:</b> <b>B1.3.1.1</b> Recognise that different parts of the human body work interdependently to perform a specific function.		<b>Indicator:</b> <b>B1.3.1.1.1</b> Identify the external human body parts by their appropriate names (e.g. eyes, ears, mouth, nose, legs, hands, shoulders, knees, fingers, toes and chest)
<b>Performance Indicator:</b> Learners can identify the human body parts with their appropriate names and understand the interdependency of the parts.		<b>Lesson:</b> 1 (Based on the demands of the indicator)
<b>Core Competencies/Values:</b> Personal Development and Leadership; Digital Literacy; Critical Thinking and Problem Solving; Creativity and Innovation.		
<b>Keywords:</b> External, eyes, ears, mouth, nose, legs, hands, shoulders, knees, fingers, toes and chest.		
<b>Phase/Duration</b>	<b>Learners activities</b>	<b>Resources</b>
<b>Phase1:</b> Starter (preparing the brain for learning) 5 minutes	Have the learners stand and form a circle. Sing the following words, have them use body actions to do the movements in the song. Teacher models, and leads the movements throughout the song. E.g., “my head, my shoulders, my knees and toes” or “show me your head, show me your eyes”.	
<b>Phase 2:</b> Main (new learning including assessment) 20 minutes	Have learners get into pairs and identify external parts of the human body on each other.  Teacher uses videos; charts/pictures to guide learners identify the external parts of the human body.  Put learners into groups and give each group flash cards of parts of the human body.  Asks learners in their groups to arrange the flash cards of body parts to form the human body on a cardboard.  Ask each group to display their work for discussion.  Ask each learner to draw an outline of the human body, put in the eyes, ears, mouth, nose, and chest, and use a colour of their choice to colour their drawing.  Learners display their work for discussion.	Pictures/ flashcards of parts of the human body, an outline drawing of the human body, pencils, crayons, erasers, cello tape, broadsheets of paper.

	<p>Learners build a human body using clay or blue tack.</p> <p><b>Assessment</b> Why is it good to have all the parts of the human body working well?</p>	
<p><b>Phase 3:</b> Plenary/ Reflections (Learner and teacher) 5 minutes</p>	<p>Teacher moves round the groups to find out the progress learners are making with respect to the task given them and where necessary ask questions to guide them.</p> <p>Teacher facilitates the presentations and sums up the learning outcomes.</p>	

Source: NaCCA, Ministry of Education 2019





**1**

**Strand:**

**Diversity of matter**

# Strand 1: DIVERSITY OF MATTER

## Sub-strand 1: LIVING AND NON-LIVING THINGS

### LESSON 1: Different kinds of things

LB: pages 2 - 16; WB: pages 6 - 8

#### CONTENT STANDARD

**B1.1.1.1** Show understanding of the physical features and life processes of living things and use this understanding to classify them.

#### INDICATOR

**B1.1.1.1.1** Observe and describe different kinds of things in the environment.

#### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Mention names of common things in the home and school.
- ◆ Describe different kinds of things in the environment.
- ◆ Sort things in the environment into living and non-living.

#### NEW WORDS

living things, non-living things, grow, move, breathe, leaves, object.

#### RESOURCES

Video/pictures on plants and animals, different non-living things such as stones, leaves and soil.

#### CORE COMPETENCIES

Personal Development and Leadership, Digital Literacy, Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Innovation.

#### SUBJECT SPECIFIC PRACTICES

Observing, Classifying.

#### HELPFUL LINKS

- <https://byjus.com/biology/living-and-non-living-things/>
- [http://www.softschools.com/language\\_arts/reading\\_comprehension/science/21/living\\_and\\_non\\_living\\_things/](http://www.softschools.com/language_arts/reading_comprehension/science/21/living_and_non_living_things/)
- <https://www.youtube.com/watch?v=vqxomJIBGcY>

#### Background information

There are many things in the home, school or community. They can be classified as **living things**, or **non-living things**.

#### Starter

Ask learners, what is the name of your parents? Let them know that everybody has a mother and a father. They are the people who gave birth to us. Baby Lions also have a mother and father.

#### Use of ICT

1. Find videos or pictures before the class on living and non-living things.
2. Show learners videos of how these things help them and some uses of living and non living things.

#### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

- Ask learners to mention the names of common things they see at home and school.
- Refer them to pages 2 to 4 of their book. Lead them to identify the items in the pictures.
- Let them know that the things that can grow big, move and eat are called **living things**.
- Take learners through the pictures and notes on page 6 of their learner's book. Guide them to talk about the three pictures on the top page. Let them know that those things cannot breathe or grow, so they are called **non-living things**.

#### Activity 2

##### Sorting things into living and non-living

- Learners go round the school community to identify living and non-living things.
- Guide learners to work in groups to sort items into living and non-living.

- Assist them to give reasons why they categorised specific things as living or non living.

### Activity 3

#### Grouping different things

<https://www.generationgenius.com/videolessons/classification-of-materials-video-for-kids/>

1. Guide learners to sort-out different things from the school into groups based on colours, shapes and size.

Use pictures of same Items with different colours, Shapes and sizes.

### Activity 4

#### Picture album of different things.

1. Let learners work in groups to create their own picture album using pictures or drawings of different living things.

Show learners pictures of dog, cats, humans, mango plant, pawpaw tree.

### Think and do

Refer learners to page 9 of the Learner's Book.

With what they have learnt from grouping different things, guide them to place the items under the given criteria.

### Talk about

Ask learners this question: A car can move, is it a living thing?

Let learners share their ideas with their group members.

Each group should select a leader to tell the whole class their findings.

### What I have learnt

After the lesson, engage learners and deduce from them what they have learnt.

Go round and let each person (selecting them at random) tell you what they have learnt.

Ask them to read what is outlined on page 16 of the Learner's Book. They can do this individually or in pairs.

1. All things in the world are said to be living or non-living.
2. Living things grow, take in food to create energy, make waste, and reproduce.
3. Plants, animals, and humans, are living things.
4. Different kinds of living things have some characteristics in common.
5. All living things are important and should be treated with care and respect.

### Project for home or school

Guide the learners to understand what is expected of them. They should bring their work to class for assessment.

### Assessment for learning

Supervise learners to do the assessment tasks. Refer them to page 10 - 15 of the Learner's Book and page 6 - 8 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Write four things living things need to stay alive.
- Why is a chair a non-living thing. Give three reasons.

### Answers to Review Exercise

#### Exercise 1

- 1 chairs
- 2 bed
- 3 house
- 4 elephant
- 5 all except the elephant

#### Exercise 2

- 1 small
- 2 square
- 3 big
- 4 green
- 5 round
- 6 yellow

### Exercise 3

- 1 growing
- 2 moving/jumping
- 3 eating
- 4 reproducing or making babies

### Exercise 4

Living things	Non-Living things
A	B
C	D
F	E

### Exercise 5

Accept learners' correct answers

### Exercise 6

1. false
2. true
3. false
4. true
5. true

### Answers to Workbook questions

#### Trial 1

Accept correct answer from learners

#### Trial 2

1. D
2. A
3. B
4. E
5. C

#### Trial 3

1. move
2. non-living thing
3. water
4. living thing

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

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2. Was the introduction catchy?
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5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Plants and animals

LB: pages 17 - 21; WB: pages 9 - 11

### CONTENT STANDARD

**B1.1.1.2:** Understand the differences between living things, non-living things and things which have never been alive.

### INDICATOR

**B1.1.1.2.1** Identify and name animals and plants in their locality.

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify and name animals and plants within our school and home.
- ◆ Say some differences between plants and animals.
- ◆ Create album on plants.
- ◆ Create album on animals.

### NEW WORDS:

Plants, animals, wild, forest and common.

### RESOURCES

Pictures showing different animals. Uprooted plants.

### CORE COMPETENCIES

Digital Literacy, Communication and Collaboration, Creativity and Innovation.

### SUBJECT SPECIFIC PRACTICES

Observing, Classifying, analysing, evaluating.

### Background Information

We learnt that living things have life in them. Because they can move, have babies, eat and also grow big. All plants and animals that we see around are living things. There are many plants around us. We get food from plants. In our homes we see different trees, and grasses. Some have very beautiful flowers, others have torns.

### Starter

Start by asking learners to sing a song or rhyme on animals.

### Use of ICT

1. Gather videos or pictures before the lesson on different plants and animals.
2. Engage learners on these pictures and videos during the lesson.

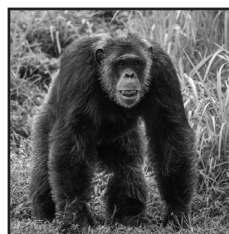
### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

##### Identifying animals

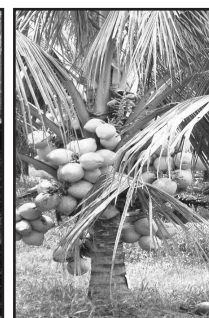
- Show learners pictures of different animals
- Let learners identify the parts that are common to all animals.
- In pairs, learners group animals into domestic and wild animals.



#### Activity 2

##### Identifying Plants

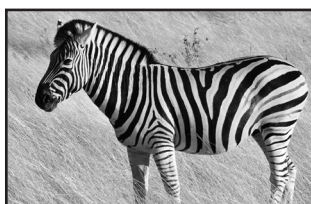
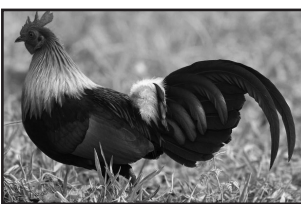
1. Take learners on a trip around the school community.
2. Guide learners to identify different grasses, small and big trees.





### Activity 3

1. Classify living things as plants or animals
2. Give learners a list of living things such as Dog, lion, mango tree, pawpaw tree, lizard, Giraffe, Coconut tree, tomato Plant.
3. In pairs learners must classify them as plants or animals.



### Talk about

Engage learners to discuss among themselves what will happen if there are no plants and animals on earth.

This can be done in pairs or in groups.

### What I have learnt

Deduce from learners what they learnt after the lesson. In this unit, we learnt that:

1. Plants and animals are examples of living things.
2. Animals can move their whole body, but plants move only part of their body.
3. Plants can make their own food, but animals cannot.
4. Animals and plants that live on their own or in the forest are called wild animals and plants.

### Project for home or school

Guide learners to understand what is expected of them. This project should be done in pairs.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 19 - 20 of the Learner's Book and pages 9 - 11 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Ask learners to mention and discuss about three animals they see at home and three animals that live in the wild.
- Let learners write some uses of plants.

### Answers to Review Exercise

#### Exercise 1

1. A
2. P
3. A
4. P
5. P
6. A
7. P
8. A

#### Exercise 2

M	A	N	G	O		
			U			
B	A	N	A	N	A	
			V			
	O	R	A	N	G	E

#### Exercise 3

Rewrite the scrambled names of animals.

- a. monkey
- b. lion
- c. parrot
- d. lizard
- e. goat

### Answers to Workbook questions

#### Trial 1

Plants	Animals
A	C
B	E
D	F
G	H

#### Trial 2

Home	Wild
A	D
B	E
C	F
	G
	H

### Trial 3

1. Bird
2. Goat
3. Fish
4. Maize
5. Lion

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

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**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

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4. Were the learners able to answer your

questions during and after the lesson?

5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 3: Basic needs of living things

LB: pages 22 - 27; WB: pages 12 - 14

### CONTENT STANDARD

**B1.1.1.2:** Understand the differences between living things, non-living things and things which have never been alive.

### INDICATOR

**B1.1.1.2.2** Know the basic needs of living things (food, water and air).

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Mention the basic things that we all need to live.
- ◆ Demonstrate the presence of air in the environment.
- ◆ Identify the uses of water, air and food.
- ◆ Design poster cards on air, water and food.

### NEW WORDS

Air, breathe, water.

### RESOURCES

Pictures showing a girl eating, lion eating meat, goat chewing grass, balloons, water, different food items

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Communication and Collaboration, Personal Development and Leadership, Digital Literacy.

### SUBJECT SPECIFIC PRACTICES

Observing, Classifying, Analysing.

### Background Information

All living things need three main important things in order to survive on earth. These basic needs are food, water and air.

Bring samples of different foods such as vegetables, fruits and grains to class.

### Starter

Start with a poem on page 22 of the learner's book.

Ask learners to mention their favourite foods.

## Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

#### *Identifying the things we all need*

- Learners mention their favourite foods.
- Learners work in groups to match some common animals with the food they eat.
- List of Animals: hen, bird, lion, dog, goat.
- List of Foods: grass, meat, maize,

### Activity 2

#### *The uses of Water*

- Show video on different sources of water in the world such as the sea, rivers, rain, lakes and lagoons.
- Learners draw pictures of themselves showing one way that they use water.
- Guide learners to mention the names of animals that live in water.

### Activity 3

#### *The uses of water to plants*

- Assist learners to plant two potted plants
- One of the plants must be watered for a week
- The other must not be watered.
- Learners compare the plants after one week and come out with the differences.

Use pictures showing different ways that we use water.

### Activity 4

#### *Uses of Air*

- Assist learners to demonstrate different uses of air. Examples: air helps us to breathe, whistle, inflate balloons, etc.

Show learners different pictures on uses of air: pumping a bicycle tyre, inflating a balloon, blowing a trumpet

## Talk About

Engage learners to discuss what will happen if you do not drink water or eat food for a long period of time.

## What I have learnt

Go through this section with them to summarise the lesson.

1. The three most important things are: air, water and food.
2. All animals, human beings and plants need Air, Water and Food
3. Air is everywhere and we breathe it in everyday.
4. We eat food to grow strong and healthy.
5. We need to drink water every day to stay healthy.

## Project for home or school

Guide learners to understand what is expected of them under projects A and B.

Additionally:

1. They can draw and colour themselves eating their favourite food.
2. Match the animals with the kinds of food they eat.



### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 25 - 26 of the Learner's Book and pages 12 - 14 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Either write or ask a friend verbally, and discuss why humans eat food.
- Ask learners to list five uses of water.

### Answers to Review Exercise

#### Exercise 1

- 1 a matches with c
- 2 b matches with a
- 3 c matches with b

#### Exercise 2

1. Learners are to fill in the spaces in this order:  
living things, air, food, water, food and breathe.
2. a. water  
b. food  
c. air  
d. water  
e. food

### Answers to Workbook questions

#### Trial 1

Accept learners correct answer

#### Trial 2

1. D
2. C
3. B
4. A

#### Trial 3

1. Food
2. Water
3. Air
4. Food
5. Water

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

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6. Were learners able to do the exercises at the end of the lesson?
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9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 4: Differences between living and non-living things

LB: pages 28 - 34; WB: pages 15 - 16

### CONTENT STANDARD:

**B1.1.1.2:** Understand the differences among living things, non-living things, and things which have never been alive

### INDICATOR:

**B1.1.1.2.3** Describe the differences between living and non-living things

### LEARNING EXPECTATIONS:

Learners are expected to;

- ◆ Describe different kinds of things in the environment.
- ◆ Sort things in the environment into living and non-living.
- ◆ Identify differences between living things and non-living things.
- ◆ Mention common examples of living and non-living things.

### NEW WORDS

Living things, Non-living things, Grow, move, breathe, make babies, eat

### RESOURCES:

Videos or pictures on Plants and animals, different non-living things such as stones, leaves, and soil, living things such as insects

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Communication and Collaboration, Personal Development and Leadership, Digital Literacy.

### SUBJECT SPECIFIC PRACTICES

Observing, Analysing, Classifying, Evaluating.

### Background information

All things in the world are grouped as living or non-living.

### Starter

Take learners on a nature walk around the school to identify common living and non-living things.

## Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

***Mention some of the things you saw when you went on the nature walk.***

- Recall the lesson on things around us,
- Learners work in groups to list the things they observed.

### Activity 2

***Sorting things into living and non-living***

- Present a video or pictures of different living and non-living things.
- In groups, learners sort the observed objects into living and non-living things.

### Activity 3

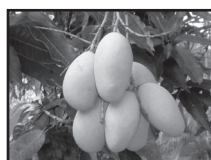
***Brainstorming on differences between living and non-living things***

- Through questioning ask learners to give reasons for classifying specific items as living or non-living.
- In identifying differences, guide learners to make reference to life processes such as movement, growth, nutrition and reproduction.

### Activity 4

***Making an album on-living things***

- Present learners with samples of non-living things or pictures of living and non living things.
- Guide learners to work in pairs to sort the things provided.
- Let learners work in groups to create their own picture album using pictures or drawings of different living things.





## Talk About

Engage learners to discuss the Talk About question on page 34 of the Learner's Book.

## Project for home or school

Guide learners to understand what is expected of them. They are to:

1. Observe common things around the home.
2. Write 5 examples of living things around their homes.
3. Write 5 examples of non-living things around the home.

## What I have learnt:

Go through this section with them to summarise the lesson.

1. The things around us are grouped as living or non-living things.
2. Living things can grow, move, eat food and make babies.
3. Non-living things cannot grow, they cannot eat food nor make babies.
4. Examples of common living things are dogs, cats, trees and humans.
5. Water, books, cars and stones are examples of non-living things.

## Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 33 of the Learner's Book and pages 15 - 16 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Why am I a living thing?. Give four reasons.
- What is the difference between a dog and a car? Give three reasons.
- Write or discuss with a friend.

## Answers to Review Exercise

1. Suggested Answers: teachers, boys, girls, friends, insects, plants, animals, birds
2.
  - a. non-living thing
  - b. non-living thing
  - c. living thing
  - d. living thing
  - e. living thing

3. Suggested Answers: walk, talk, move, grow, eat, see, sing, dance

## Answers to Workbook questions

### Trial 1

Suggested answers: Pictures: ball, egg, ant, frog, tomato plant, toy car, lizard, bed, giraffe, shirt.

### Trial 2

1. living thing
2. cannot grow bigger
3. make babies
4. a non-living thing
5. blackboard

### Trial 3

Learners to draw.

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

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**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

# Strand 1: DIVERSITY OF MATTER

## Sub-strand 2: MATERIALS

### LESSON 1: Identification of materials

LB: pages 35 - 40; WB: pages 17 - 19

#### CONTENT STANDARD

**B1.1.2.1** Recognise materials as important resources for providing human needs

#### INDICATOR

**B1.1.2.1.1** Identify and name a variety of everyday materials in their immediate environment.

#### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify and name materials in the home and school.
- ◆ Identify the materials used for making some common things.
- ◆ Design objects from some given materials
- ◆ Create their own collection of different materials .
- ◆ Describe and group materials by their appearance (shape, size, colour, texture, mass).

#### NEW WORDS

Plastic, Metal, Ceramic, Glass.

#### RESOURCES

material such as paper, clay, wood, metal, glass, leaves, fabric and straw.

#### CORE COMPETENCIES

Critical Thinking and Problem Solving, Cultural Identity and Global Citizenship, Personal Development and Leadership, Creativity and Innovation.

#### SUBJECT SPECIFIC PRACTICES

Observing, Classifying, Generalising, Communicating.

#### Background Information

Materials are all around us. We can see that materials are so useful to us. Materials are used to produce what we eat, wear and where we stay.

#### Starter

Learners identify the things used to make the furniture in the classroom, the school building and the uniforms they wear to school.

#### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

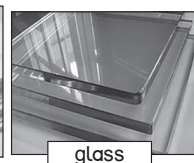
#### Activity 1

##### *Identifying the material sources of objects*

- Show learners samples of materials such as wood, clay, metal and fabric
- Guide learners to work in pairs to match objects such as chairs, cutlass, books, clothes with their material sources.



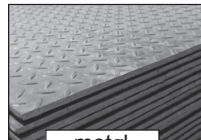
paper



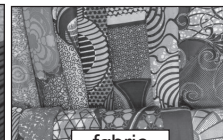
glass



plastic



metal



fabric

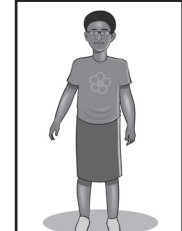


wood

#### Activity 2

##### *Designing objects from materials*

- Guide learners to produce different artifacts from paper.
- In groups, learners design spoons, human beings, pens and cups using clay.



## Use of ICT

1. Show learners pictures and videos of different materials and what they are used for.
2. Guide learners to do a search on uses of some materials.
3. Learners can do the search at home and present their findings during the next lesson.

## Talk about

This refers to the critical thinking questions. Learners are expected to think before they answer.

1. Fabric is used to make clothes but cannot be used to make drinking cups. Why?

## What I have learnt

Engage learners at the end of the lesson to tell you what they have learnt.

Ask learners to read what is in the Learner's Book on page 40.

1. There are different kinds of materials around us.
2. Common everyday materials are wood, metals, plastic, paper, straw and clay. Materials have different properties.

## Project for home or school

Refer to page 40 of the Learner's Book.

Direct learners of what is expected of them.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- What is the difference between materials and objects.
- Discuss with a partner and present your findings to the teacher.

## Assessment for learning

Supervise learners to do the assessment task.

Refer them to pages 37 - 39 of the Learner's Book and pages 17 - 19 of the Workbook.

## Answers to Reviews Exercise

### Exercise 1

1. Wood
2. Metal
3. Clay
4. glass

### Exercise 2

clay matches with earth ware

glass matches with bottles

paper matches with book

wood matches with chair and wooden pestle

### Exercise 3

1. the chair is made of wood, the other two are made of metal
2. utensil is made of clay, table and chair are wooden
3. saucepan is metallic other two are plastic

### Exercise 4

1. i
2. a
3. e
4. c

## Answers to Workbook questions

### Trial 1:

#### Materials

Glass  
Leather  
Fabric  
Wood

#### Objects

door  
mattress  
car  
television

### Trial 2:

Possible answers

Fabric, wood, metal

Accept other answers from learners

### Trial 3:

1. Wood
2. Metal
3. Clay
4. Glass

### Trial 4:

1. c
2. d
3. b
4. c
5. a

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

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**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Grouping of materials by their appearance

LB: pages 41 - 45; WB: pages 20 - 22

### CONTENT STANDARD

**B1.1.2.1** Recognise materials as important resources for providing human needs.

### INDICATOR

**B1.1.2.1.2** Describe and group materials by their appearance (shape, size, colour, texture, mass).

### LEARNING EXPECTATIONS

Learners are expected to

- ◆ Describe materials by their appearance (shape, size, colour, texture, mass).
- ◆ Group different materials based on their properties.

### NEW WORDS

rough, smooth, light, coloured.

### RESOURCES

common materials such as wood, fabric, metals and paper.

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Cultural Identity and Global Citizenship, Personal Development and Leadership, Creativity and Innovation.

### SUBJECT SPECIFIC PRACTICES

Observing, Classifying, Generalising, Communicating.

### Background Information

Materials are all around us. We can see that materials are so useful to us. Materials are used to produce what we eat, wear and where we sleep.

#### Assemble:

Pictures of rough objects

Pictures of soft objects

Pictures of coloured objects

Pictures of hard objects

### Starter

Learners identify all hard items in the class. Afterwards they identify all items in the class that are light in weight.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

##### **Assembling Different Materials**

Guide learners to:

- Gather different materials
- This should include plastics, fabric, leaves, paper, wood, metal and glass.
- Fix them on a sheet of paper and write their names under them.

#### Activity 2

##### **Grouping Materials based on their properties**

- In groups, learners look around the school, community and home. Select three materials each that are:
  - bendable
  - hard
  - rough
  - smooth

### Talk about

Engage learners to discuss:

1. Why is your chair harder than your exercise book?
2. Why is your exercise book heavier than your eraser?

Let learners do this activity in groups of four.

### What I have learnt

Find out from learners what they have learnt after this lesson. Refer them to page 45 of the Learner's Book to read.

3. Materials have different properties.
4. Materials can be grouped based on their properties such as hard, smooth, rough.
5. I can produce my own material album.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 44 - 45 of the Learner's Book and pages 20 - 22 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. Look around your community. Write the name of one item that is:

- a. Heavy
- b. Light
- c. Round
- d. Red
- e. Smooth

2. List six objects and describe each of them using any of these words: Hard, soft, light, round or rough.

### Answers to Review Exercise

#### Exercise 1

1. hard   2. smooth   3. sticky   4. bendable

#### Exercise 2

1. heavy   2. smooth   3. hard

### Answers to Workbook questions

#### Trial 1:

- 1. Learners' answers
- 2. Learners' answers
- 3. Learners' answers
- 4. Learners' answers
- 5. Learners' answers
- 6. Soft; round; light  
Round; rough; rough

#### Trial 2:

Learners' drawing

#### Trial 3:

- 1. Correct matching from learners
- 2. D
- 3. F
- 4. E
- 5. A, G, and H

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

- 1. How did the lesson go?
- 2. Was the introduction catchy?
- 3. Were you able to catch the learners' attention throughout the lesson?
- 4. Were the learners able to answer your questions during and after the lesson?
- 5. Did the learners ask you questions during and after the lesson?
- 6. Were learners able to do the exercises at the end of the lesson?
- 7. What three things did you do well during the lesson?
- 8. How are you going to build on this achievement in subsequent lessons?
- 9. What two challenges did you encounter during the lesson?
- 10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?



## LESSON 3: States of materials

LB: pages 46 - 50; WB: pages 23 - 25

### CONTENT STANDARD

**B1.1.2.2** Know that substances can exist in different physical states (Solid, Liquid, Gas).

### INDICATOR

**B1.1.2.2.1** Identify and classify materials as solid, liquid or gas

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify solids, liquids and gases
- ◆ Classify materials as solid, liquid or gas
- ◆ Give common examples of solid, liquid and gaseous substances

### NEW WORDS

Solids, liquids and gas

### RESOURCES

samples of solids such as stone, sand, chalk.  
Liquids such as water and fruit juice.

### CORE COMPETENCIES

Creativity and Innovation, Personal Development and Leadership, Communication and Collaboration

### SUBJECT SPECIFIC PRACTICES

Observing, Manipulating, Communicating  
Evaluating, Generalising

### HELPFUL LINKS

<https://courses.lumenlearning.com/introchem/chapter/three-states-of-matter/>

### Background Information

In our homes and communities, objects exist in different states. Many substances can be changed from one state to another by heating or cooling.

### Starter

Start by asking learners to mention some materials they know.

Give learners different samples of solids and liquids. Ask them to sort the items into two groups with reasons.

## Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

#### Identifying Solids

- Engage learners on a nature walk around the school.
- Assist learners to identify solid substances around the school.

Use pictures of solids such as book, table, mobile phone

### Activity 2

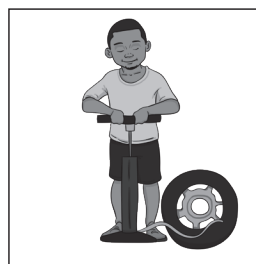
#### Identifying Liquids

- Show pictures of some common liquids.
- Let learners work in groups to mention common examples of liquids that they see around them and home.

### Activity 3

#### Demonstrating the presence of gas

- Assist learners to demonstrate the presence of gases through activities such as whistling, inflating of balloons, fanning themselves, flying of kites.



## Use of ICT

Take learners through a search to find the following:

1. Different states that water exists in.
2. Five examples of gases.

## Talk About

Engage learners to discuss:

1. How can water become solid or a gas?

## Project for home or school

Instruct learners and guide them to understand what they will do. They are:

1. to find out how liquid water turns to gas.
2. to demonstrate the presence of air.

## What I have learnt

Take learners through these:

1. Materials can exist in three states solid, liquid and gas
2. Examples of solids are chalk, leaves, tables and chairs
3. Water, petrol, fruit juice and palm oil are examples of liquids.
4. Examples of gases are the air we breathe in and the gas used to fill balloons.

## Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 23 - 25 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Use the options in the bracket to complete each of the statements below. (solid, liquid, gas)

1. Which state of matter does water in a bottle exist in?
2. Air is an example of a .....
3. 'Sobolo' can flow because it is .....
4. Your favourite fruit juice is an example of a .....
5. The wind exists as a .....

## Answers to Workbook questions

### Trial 1:

1. Liquid
2. Gas
3. Solid
4. Liquid
5. Gas

### Trial 2:

1. → c
2. → b
3. → a
4. → c
5. → b
6. → a

### Trial 3:

Learners' drawings.

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to "TRAP" the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 4: Mixtures of materials

LB: pages 51 - 53; WB: pages 26 - 27

### CONTENT STANDARD

**B1.1.2.3** Understand mixtures, the types, their formation, uses and ways of separating them into their components.

### INDICATOR

**B1.1.2.3.1** Demonstrate understanding that a mixture is two or more objects or materials put together.

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Mention that a mixture is two or more objects or materials put together.
- ◆ Prepare different kinds of mixtures.
- ◆ Separate some given mixtures.

### NEW WORDS

Mixtures, solid-solid mixtures, solid-liquid mixtures, gas-gas mixtures.

### RESOURCES

Beads of different colours and types, water, sand, sugar, gari, salt, gravels, bottle caps.

### CORE COMPETENCIES

Communication and Collaboration, Personal Development and Leadership.

### SUBJECT SPECIFIC PRACTICES

Manipulating, Observing, Evaluating, Generalising.

### HELPFUL LINKS

- [http://www.chem4kids.com/files/matter\\_mixture.html](http://www.chem4kids.com/files/matter_mixture.html)
- <https://www.science-sparks.com/making-mixtures/>

### Background Information

We see mixtures every day. The air we breathe, the sea water and the beverage we drink in the morning are examples of mixtures.

Mixtures are very important to us. We mix two or more substances to form a mixture. Food is an example of a mixture.



### Starter

Ask learners to tell you how beverage is prepared in their homes.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Put learners in groups.
- Provide each group with bottle caps, beads and an empty container.
- Ask each group to put the bottle caps and the beads in the container and mix them up.
- Let them know that they have made a mixture of bottle caps and beads.
- Now ask them to separate the mixture.
- Let each group tell you their observations.

### Activity 2

- Now provide learners with different materials such as gari, sand, salt, milo, water, etc.
- Guide learners to prepare mixtures by adding any two substances such as water and milk, sand and gravels or gari and water.
- Let learners describe or talk about what happens in each case (mixture).
- Find out from learners if the mixture they have formed are the same as the original items.

### Project for home or school

Learners are expected to do an activity by making their own mixture.

Guide learners and instruct them to do this activity in pairs.

## What I have learnt

Engage learners at the end of the lesson to tell you what they have learnt.

Ask learners to read what is in the Learner's Book on page 53.

1. When two items are mixed together, a mixture is formed.
2. Mixtures are used everyday.
3. Examples of mixtures are sand and stone, sea water and soup.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 52 of the Learner's Book and page 26 - 27 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

List five mixtures and what each is made up of.

### Answers to Review Exercise

#### Exercise 1

sugar solution  
gari and salt mixture  
oil and milk mixture  
other correct answers

### Answers to Workbook questions

#### Trial 1:

1. gari and sugar mixture
2. sad and water mixture
3. sand and iron nails

#### Trial 2:

Not a mixture	a mixture
Not a mixture	a mixture

#### Trial 3:

Learners drawing

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

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5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?



**2**

**Strand:**

**Cycles**



## Strand 2: CYCLES

### Sub-strand 1: EARTH SCIENCE

#### LESSON 1: Day and night

**LB:** pages 56 - 60; **WB:** pages 30 - 33

##### CONTENT STANDARD

**B1.2.1.1** Recognise that some events in our environment occur recurrently.

##### INDICATOR

**B1.2.1.1.1** Explain that some natural phenomena such as day and night occur repeatedly.

##### LEARNING EXPECTATION

Learners are expected to:

- ◆ Identify day and night occurrences.
- ◆ Identify activities that are normally done during the day and activities we do at night time.

##### NEW WORDS

day, warm, shine, light, bright, moon, night, clear, colours, warm.

##### RESOURCES

Circular cards, Round plastic containers, Ball.

##### CORE COMPETENCIES

Critical Thinking and problem solving, Creativity and Innovation, Personal development and Leadership.

##### SUBJECT SPECIFIC PRACTICES

Manipulating, Generalising, Observing, Analysing, Evaluating.

##### HELPFUL LINKS

- <https://www.theschoolrun.com/homework-help/day-and-night>
- <https://www.dkfindout.com/us/space/solar-system/day-and-night/>
- <http://www.childfun.com/themes/world/day-and-night/>

##### Background information

When the weather is very bright, it is daytime. Daytime weather is always clear so you can see. The sun shines bright during the day.

A lot of people go out to work during in school during the daytime. Children go to school during the day.

##### Starter

Put learners in groups such that gifted learners' will support the slow learners.

Pose the following questions for learners to discuss in their groups.

1. Do you find it difficult to walk and see things clearly in your room after 7.00 pm?.....
2. Why do you find it difficult to see things clearly in your room after 7:00pm?.....
3. Guess what will happen if there was no daytime. Give learners thinking time and collect their responses.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

Note that for every period of science learning, you must take learners through a lot of activities.

##### Activity 1

- Still in groups, task learners to trace a round rubber bottle and a paper card.
- Support learners to cut out the cards.
- Support learners to fold the paper into two and write or colour day time with what they see during day time.
- Task learners to colour what they see at night time.

### Activity 2

- Guide learners to place the paper cards on their tables, and then turn the paper cards round for five times, observing the colours critically.
- Ask learners to talk about their observations with their friends.

### Activity 3

- Have learners talk about what they see and do during day and night time.
- Have learners suggest other events that happen over and over again.
- Have learners mention what they normally do during day time and at night time.

### Think and do

Based on the activities you engaged learners on, task them to do the two drawings on day and night.

### Talk About

Refer learners to page 57 of the learners book. As a means to get their understanding of this lesson and also bring out their critical thinking ability, ask them what will happen if there was no daytime.

Encourage them to engage their friends in this discussion.

### What I have learnt

Engage learners to say or write in brief what they have learnt.

Reflect as teacher to see whether the learning went well.

1. When the weather is clear and sunny it is daytime.
2. When the weather is dark and the sun goes away it is night time.

### Project for home or school

Engage learners on the project on page 60. Encourage them to do these and submit on the next lesson.

3. Learners are to draw two things they see at daytime.
4. Learners are to draw one thing they see at night time.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 58 - 59 of the Learner's Book and pages 30 - 33 of the Workbook.

Ensure that learners can use the new words correctly. Ensure that learners work on their projects and home learning task.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Discuss the following with your partner.

1. Why do people go to work during the day?
2. Going to school at night is better than going to school during the day.

### Answers to Review Exercise

#### Exercise 1

1. u
2. h and n
3. r, g and t
4. c, e and r

#### Exercise 2

1. d and r
2. n, g and t
3. s and a
4. M and o

### Answers to Workbook questions

#### Trial 1

Learners answers

#### Trial 2

- A Day
- B Night
- C Day
- D Night

#### Trial 3

1. Sun, day
2. moon
3. day
4. sun, east
5. day
6. moon
7. sun
8. moon
9. day
10. sun

#### Trial 4

Learners' drawing

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

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5. Did the learners ask you questions during and after the lesson?

6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: The sun

LB: pages 61 - 65, WB: pages 34 - 35

### CONTENT STANDARD

**B1.2.1.2** Recognise the relationship between the Earth and the Sun

### INDICATOR

**B1.2.1.2.1** Know that the sun is the main source of light to the earth

### LEARNING EXPECTATION

Learners are expected to:

- ◆ Observe that the sun gives us light and provides us with warmth.

### NEW WORDS

Sun, Far, Shine, Set, Eat, Day, Warm, Bright, West.

### RESOURCES

Flashlight, Candle, Match stick, Lantern, Videos, Pictures.

### CORE COMPETENCIES

Critical Thinking and problem solving, Creativity and Innovation, Personal development and Leadership.

### SUBJECT SPECIFIC PRACTICES

Manipulating, Generalising, Observing, Analysing, Evaluating .

### HELPFUL LINKS

- <http://www.sciencekids.co.nz/sciencefacts/space/sun.html>
- <https://www.teacher.org/lesson-plan/learning-about-the-sun/>

### Background information

The sun is far and big. The heat from the sun warms the earth. The sun gives us bright light that shines on the surface of the earth. We see the sun during the day. It is the main source of light to the earth.

We can use it for many things. We can dry some food items like maize, pepper and cocoa in the sun.

### Starter

Put learners into groups. Have learners use think-pair-share strategy to answer the following question.

1. Why is the sun important?
2. Predict what will happen if the sun was very close to the earth?
3. Where do we get light from?
4. How does the sun look like?
5. Where is the sun located?

### Use of ICT

Gather pictures of sources of light before the lesson.

Encourage learners to do research on the internet with the help of their parents as stated on page 69 of their learner's book.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Display various sources of light such as flashlight, candle, match stick, and lantern.
- Engage learners to mention some sources of light in their environment. Example, sun stars, moon, bulbs, lamps, etc).
- Engage learners such that they will consider the largest source of light.

### Activity 2

- Task learners to design and create the sun as the source of light on the earth.
- Engage learners to write a poem on the sun.
- Engage learners in more activities such as role playing. "I am the sun".

### Think and do

Provide learners with the items mentioned under "think and do" on page 63 of learners book.

Supervise them as they do the activity stated there.

### Talk About

This refers to the critical thinking questions. Learners are expected to think before they answer.

1. Why is the sun important?
2. When do we use an umbrella?

3. Guess what will happen if the sun was very close to the earth.

### What I have learnt

Engage learners to say or write what they have learnt.

Reflect as a teacher to see whether the learning went well.

1. The sun is useful.
2. It is big and it keeps the earth warm.
3. The sun gives light to the earth.
4. We use the sun to dry our things.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 64 of the Learner's Book and pages 34 - 35 of the Workbook.

### Project for home or school

Direct learners to draw and colour one activity they can do when the sun is shining. Refer to page 65 of the Learner's Book.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Circle the correct word.

1. What keeps the earth warm?  
sun, rain, moon
2. Which star shines in the day and provides light?  
sun, moon, heat.
3. The sun rises in the  
north, south, east
4. We use \_\_\_\_\_ to dry our clothes.  
moonlight, sunlight, rainwater
5. We see the \_\_\_\_\_ at night time.  
moon, sun, rains

### Answers to Review Exercise

#### Exercise 1

1. Sun
2. Sets
3. Rises
4. Sun
5. Sun

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

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**A: Analyse:** Analyse by asking yourself the following questions:

1. How did the lesson go?
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4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 3: Mist and run-off water

LB: pages 66 - 70; WB: pages 36 - 38

### CONTENT STANDARD

**B1.2.1.3** Show understanding of the roles of condensation, evaporation, transpiration and precipitation in the hydrological cycle

### INDICATOR

**B1.2.1.3.1** Observe the disappearance of mist and pools of water after it rains.

### LEARNING EXPECTATION

Learners are expected to:

- ♦ Observe how mist is formed and where water run-offs go.

### NEW WORDS

Mist, Atmosphere, Pool, Underground, Water run-offs, Sky, Evaporate.

### RESOURCES:

Videos, Pictures, Natural observations in the environment.

### CORE COMPETENCIES

Critical Thinking and problem solving, Creativity and Innovation, Personal development and Leadership

### SUBJECT SPECIFIC PRACTICES

Manipulating, Generalising, Observing, Analysing, Evaluating

### HELPFUL LINKS

- *The Water Cycle | The Dr. Binocs Show | Learn Videos For Kids:* <https://www.youtube.com/watch?v=ncORPosDrjI&hl=en-GB>
- *The water cycle song (video):* <https://www.youtube.com/watch?v=TWb4KIM2vts&hl=en-GB>
- *The difference between mist and fog (video):* [https://www.youtube.com/watch?v=AZFmV7F3R\\_A](https://www.youtube.com/watch?v=AZFmV7F3R_A)
- *How does rain form and what is the water cycle? (video):* <https://www.youtube.com/watch?v=zBnKgwnn7i4>

### Background information

The sky is sometimes not clear in the morning so people who travel in the morning cannot see clearly. When it happens like that, we say that mist is formed. Rain water that falls runs into water bodies.

Water run-offs goes into the atmosphere, and gets trapped in the atmosphere by evaporation. This is called mist.

In some parts of Ghana, we see mist mostly early in the morning especially, when travelling on a high way early in the morning. In places like Aburi, we normally see mist.

### Starter

Ask learners to tell you where the rainwater that falls goes to.

### Use of ICT

Ahead of the class, get a video of cars driving through mist (<https://www.youtube.com/watch?v=i95XV5uYh44>).

Show the video to learners after the initial activities. See helpful links for more videos about the water cycle.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Put learners in groups depending on the number of learners in your class. (Groups must be formed considering the learning abilities of learners so that gifted learners are placed in each group to support other learners).
- Show a short video or provide pictures of water run-off scenes in the learner's text book for learners to observe critically and say what they see.
- Ensure that learners do group presentations and write key ideas on the board.
- You can also have learners write what they see in the picture and paste them on the wall for discussion.



### Activity 2

- Engage learners to predict where mist and run-off water go. Learners are expected to share ideas to provide response.
- Explain to learners how mist is formed. Tell them that water run-offs in streams and rivers evaporates into the atmosphere as they saw in the video. This is then trapped in the atmosphere and cooled to form mist.
- Have learners understand that mist forms from evaporation but run-off water flows into surface water bodies or collects as stagnant pools of water.
- Have learners observe the environment anytime it rains and then link the knowledge learnt to everyday occurrences in their environment.

### Activity 3

- Have learners use Think-pair-share strategy to guess what will happen if water run-offs are not collected in pools of rivers or streams. (Give learners about two minutes to think through their predictions, then share their answers with their partner.)
- Refer learners to pages 66 and 67 of the Learner's Book. Ask them to look at the pictures and discuss how mist is formed.
- Have learners talk about their ideas and write them on the board.

### Think and do

Guide learners to create a design of on a cardboard run-off water. Refer them to page 68 of the learner's book for things needed.

### Talk About

Guide learners to critically think through and answer the two questions stated on page 68.

### What I Have Learnt

Have learners say or write what they have learnt. This helps you to also reflect on your facilitation approach.

Refer learners to page 70 of the Learner's Book to read what is there.

1. Mist is formed when water vapour is trapped in the sky.
2. Mist makes it difficult to see clearly.
3. Run-off water flows into rivers, lakes and streams.

### Project for home or school

Learners are to draw and colour mist they have seen before.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 69 - 70 of the Learner's Book and page 36 - 38 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help. Choose the correct answer.

1. We see mist in the .....  
a. afternoon      b. morning      c. evening

Underline **True** if the statement is true and **False** if the statement is false.

2. When mist is formed, it goes into the atmosphere. True/False.
3. When water-falls flows, it runs into water bodies like ponds and streams. True/False.

### Answers to Review Exercise

1. pool - 3      2. mist - 5      3. run-off water - 2
4. land - 1      5. evaporation - 4      6. rainfall - 6

### Answers to Workbook questions

#### Trial 1:

1. Morning
2. True
3. True

#### Trial 2:

Accept correct matching from learners

#### Trial 3:

Learners' correct drawing.

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to "**TRAP**" the lesson taught.

**T: Teach:** Teach a lesson.

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5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?

8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 4: Sources and uses of water

LB: pages 71 - 75, WB: pages 39 - 40

### CONTENT STANDARD

**B1.2.1.4** Recognise water and air as important natural resources.

### INDICATOR

**B1.2.1.4.1** Identify sources and uses of water in the home and at school.

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify the uses of water.
- ◆ Identify the sources of water.

### NEW WORDS

Bore-hole, sea, rainfall, river, tap water, Well.

### RESOURCES

(Samples of sea water if possible) Pictures of bore-hole, river water etc.

Videos showing sources and uses of water.

### CORE COMPETENCIES

Critical Thinking and problem solving,  
Creativity & Innovation, Personal  
development and Leadership.  
Cultural Identity and Global Citizenship.

### SUBJECT SPECIFIC PRACTICES

Generalising, Observing, Analysing,  
Evaluating.

### HELPFUL LINK

- <https://www.quora.com/What-are-5-sources-of-water-How-are-they-different-from-each-other#>

### Background Information

Water is one of the important things we need in our lives every day. Every day, we drink water and bath with water. Water is important to human beings, animals and plants. We need water to live on earth.

### Starter

Engage learners in a think-pair share activity to mention where they get water from (sources of water).

Then allow learners to talk about what their friends told them about the source of water they use at home.

Select some of their answers and write them on the board or on paper and paste them on the walls.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

- Show pictures of different sources of water to learners in groups and let learners talk about them. They should determine which of the sources is safe for drinking.
- In groups, depending on the class size, have learners talk about at least ten uses of water.
- Assist learners to present their group work orally to the class.

#### Activity 2

- Engage learners to use local materials to create different sources of water in an outdoor activity. E.g. Artificial wells, rivers, rain fall and tap.

### Think and do

Engage each learner to draw a learner washing his or her face with water. See learners book page 74.

### Talk About

Direct learners to observe what is happening in the two pictures on page 74.

In a discussion, let them tell others why it is important to use water wisely.

### What I Have Learnt

Make learners stand in a circle in class to say what they now know about the sources and uses of water.

Write key ideas on the board for learners to copy.

1. Water is useful.
2. We drink water and use it for bathing, washing, cooking, farming and for many other purposes.
3. We get water from many sources.
4. We must not waste water. We must use it wisely.

## Project for home or school

Engage learners in their project/home learning assignment, to make a poster to show two sources of water they have seen before. They can do this at home and submit during the next science lesson.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 75 of the Learner's Book and pages 39 - 40 of the Workbook.

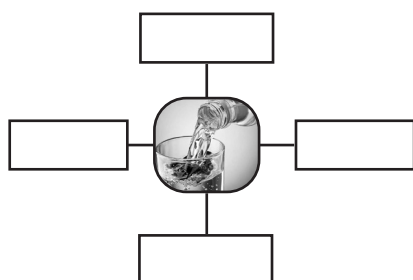
### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Write three uses of water in the home.

1. ....
2. ....
3. ....

Name four sources of water in the boxes provided.



### Answers to Review Exercise

#### Exercise 1

1. C, i and g.
2. c, e, n and n
3. w, s, i and g

### Workbook Answers

#### Trial 1:

Cooking  
Bathing  
Drinking  
Washing  
(other answers)

#### Trial 2:

1. sea
2. river
3. rain
4. well
5. (other correct drawings)

#### Trial 3:

Learners correct drawing

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

**A: Analyse: Analyse** by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
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4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 5: Air in the environment

LB: pages 76 - 79, LB: pages 78 - 81;

### CONTENT STANDARD

**B1.2.1.4** Recognise water and air as important natural resources

### INDICATOR

**B1.2.1.4.2** Demonstrate the existence of air in the environment

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Explain that air exist everywhere.
- ◆ Demonstrate the existence of air in fun activities.

### NEW WORDS

Air, Fun, Breath, Atmosphere, Balloons, Blow.

### RESOURCES

Paper, Cellotapes, balloons, cloth, thread etc.

### CORE COMPETENCIES

Critical Thinking and problem solving, Creativity & Innovation, Personal development and Leadership.

### SUBJECT SPECIFIC PRACTICES

Generalising, Observing, Analysing, Evaluating.

### Background Information

Air is one of the natural resources of the environment. Air is a mixture of gases needed for breathing. Air is colourless. Air expands when heated.

Air is all around us. All living things, including humans, animals and plants need air to live. We breathe in air from our environment. Air is everywhere. Air can be felt but cannot be seen or touched.

### Starter

Ask learners to throw pieces of paper and observe what happens.  
Let them know that air helps things to move.

## Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Engage learners in fun activities to demonstrate the existence of air by:
  - waving a paper across the face,
  - inflating balloons in an open space,
  - watching the leaves of plants move.
- Put learners into groups of six. Assist them to discuss why balloons inflate and why the leaves of trees move. Take their responses and write them on the board.
- Engage learners to use their hands or a book to fan themselves and discuss what they experience.

### Activity 2

- Take learners outside the classroom to observe a hoisted flag. Task them to talk about their observations in a think-pair-share activity. Let learners explain what causes leaves and hoisted flags to move.

### Activity 3

- Ask learners to outline the uses of air in their lives eg. Whistling, blowing of trumpets, flying kites, sailing of boats, etc.
- Make learners perform “breathe in and out” exercise to know the importance of air.

### Activity

- Engage learners to draw two things that air can move.

## Think and do

Engage learners to make a flag. See learners “think and do” on page 77 of learner’s book for instructions.

## Talk About

Have learners think through and discuss why air is important to human beings. Engage them in another discussion to tell you what will happen if air does not blow.

## What I Have Learnt

Have learners say or write what they have learnt. This helps you to reflect on your facilitation approach.

1. Air is everywhere, air makes things move.
2. We breathe in air.
3. Air can make things move.

## Project for home or school

Engage learners in their project/home learning assignment. Let them report back in class what happened in both scenarios.

Let learners draw and colour two things that air can move.

Ask them to name the things that they have drawn.

## Assessment for learning

Supervise learners to do the assessment task. Refer them to page 78 of the Learner's Book and pages 41 - 42 of the Workbook.

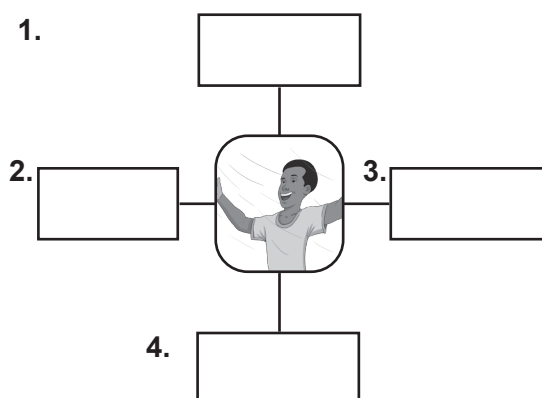
## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Use the words in the bracket to fill the blank spaces. (cold, breathe, air, blow, move)

- a. .... is every where.
- b. We ..... into balloons.
- c. .... can make things ..... when it blows.
- d. When the weather is ....., the air that blows is also .....

Write four of them in the boxes below.



## Answers to Review Exercise

### Exercise 1

1. Everywhere.
2. True.
3. Look out for neat drawings.

## Answers to Workbook questions

### Trial 1:

1. True
2. False
3. True

### Trial 2:

1. a. air                      b. blow, air  
c. air, move              d. cold, cold

### Trial 3:

1. We breathe
2. Plants and animal need air to live
3. It makes living things move
4. Makes kite fly

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
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4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?



## Strand 2: CYCLES

### Sub-strand 2: LIFE CYCLES OF ORGANISMS

#### LESSON 1: Structure of plants

LB: pages 80 - 84, WB: pages 43 - 44

##### CONTENT STANDARD

**B1.2.2.1** Demonstrate understanding of the life cycle of plants

##### INDICATOR

**B1.2. 2.1.1** Examine the structure of plants.

##### LEARNING EXPECTATION

Learners are expected to:

- ◆ Observe that plants have parts.
- ◆ Identify the functions of each part of plant.
- ◆ Draw and label the parts of a plant.
- ◆ Make their own plant book.

##### NEW WORDS

Leaves, stem, roots, soil and flowers.

##### RESOURCES

Different plants (some plants might be poisonous, so be careful), gloves, note, soap and water (meant to be used for hand washing after handling plants).

##### CORE COMPETENCIES

Critical Thinking and Problem Solving, Personal Development and Leadership, Communication and Collaboration, Creativity and Innovation.

##### SUBJECT SPECIFIC PRACTICES

Observation, Recording, Evaluating, Analysing.

##### HELPFUL LINKS

- <https://www.ducksters.com/science/biology/plants.php>
- <https://www.dkfindout.com/us/animals-and-nature/plants/parts-plant/>

##### Background Information

Plants are mostly seen everywhere. Plants are of different kinds and different sizes. Some grow tall and others do not.

Plants stay in the soil because the roots hold it firmly. Plants have different parts which have different functions.

##### Starter

Show learners a picture of a plant or an uprooted plant. Let them tell you the parts of the plant they know.

##### Use of ICT

1. Find videos or pictures before the class on plants.
2. You can find one on youtube here <https://www.youtube.com/watch?v=TD60-3rqPXg>

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Take learners on a nature walk. Assist them to uproot some young plants from their immediate environment and bring to the class.
- Put learners into groups ensuring that each group has a gifted learner to support the group.
- Provide each group with the uprooted plants. Make learners examine or observe the plants within their groups.
- Ask each group to identify the parts of the different plants they have. The parts are: the root, leaves, fruit, flowers and stem.
- Refer them to page 81 of the Learner's Book to look at the picture of the parts of a plant.

##### Activity 2

- Engage learners to talk about the nature of the leaves, roots, stem and fruit of a plant.
- Task each group to mention the function of any part of plant they know.
- Refer them to page 82 of the Learner's Book. Guide them to read the short note on the functions of the parts of a plant.

### Activity 3

1. Engage learners to draw and colour the external parts of a plant they have observed.
2. Let them display their drawings in class.
3. Make learners go on a gallery walk to observe their mate's work and make inputs on the work.

### Think and do

Engage learners to do the activities in the learners book under think and do on page 82.

### Talk About

Have learners think through and discuss what will happen if there were no plants on earth.

### What I Have Learnt

Have learners say or write what they have learnt for the day. Refer learners to page 84 of the Learner's Book.

1. Plants are everywhere.
2. Plants have several parts. These are the stem, roots, leaves, fruits and flowers.

### Project for home or school

Ensure that learners do a project. They will gather as many plants as they can, cellotape them in their drawing books and label the parts.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 83 of the Learner's Book and pages 43 - 44 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. What part of a plant holds it in the ground?  
a. seed b. fruit c. leaves d. roots
2. Which of these is a fruit you can eat without cooking it?  
a. cocoyam b. cassava c. orange d. yam
3. Which part of the plant holds the leaves?  
a. seed b. fruit c. stem d. roots

4. .... makes food for the plant?  
a. seed b. fruit c. leaves d. roots

### Workbook Answers

#### Trial 1:

Accept correct labelling from learners (Refer to learners book)

#### Trial 2:

1. roots
2. orange
3. stem
4. leaves

#### Trial 3:

1. false
2. true
3. flowers
4. fruits

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

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5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Different kinds of seeds

LB: pages 85 - 88; WB: pages 45 - 47

### CONTENT STANDARD

**B1.2.2.1** Demonstrate understanding of the life cycle of plants

### INDICATOR

**B1.2. 2.1.2** Observe different kinds of seeds

### LEARNING EXPECTATIONS

Learners are expected to:

- ♦ Draw and mould different seeds.
- ♦ Identify fruits and link them to their respective seeds.
- ♦ Tell the importance of seeds in everyday life.

### NEW WORDS

Seed, pawpaw, pear, orange, mango.

### RESOURCES

Fruits and seeds of pawpaw, pear, oranges, mangoes, water melon etc. pictures of these seeds and their fruits.

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Personal Development and Leadership, Communication and Collaboration Creativity and Innovation.

### SUBJECT SPECIFIC PRACTICES

Observation, Recording.

### Background Information

Fruits are seen at market places, shopping malls and hawkers sell them on our streets every day. Different fruits have different seeds in them. Some fruit seeds are small, while others are big. Seeds of pawpaw, pear, orange, mango, water melon are all different from each other. They differ in shape, size and colour.

### Starter

Ask learners the fruit they like best. Ask them to tell you what they find in the fruits they like best.

## Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Put learners into groups of four. Provide each group with different kinds of seeds. (eg. Orange, pawpaw, mango, bean seeds, etc.)
- Have learners examine or observe the external parts of the different kinds of seeds.
- Have learners share their observations with the class.

### Activity 2

- Give each group real fruits of the seeds they have.
- Task them to identify and been given match each fruit with its seed.
- Make learners go round and observe what the other groups have done. Let them make inputs where necessary.

### Activity 3

- Ask learners to draw any two of the seeds they have observed.
- Assist them to display their work in class for discussions.

## Think and do

Engage learners to do the activity in the learners book under “think and do” on page 86.

## Talk About

Learners are expected to discuss why seeds are important. Encourage everyone to partake in this discussion.

## What I Have Learnt

Have learners say or write what they have learnt for the day.

1. Different fruits have different seeds in them.
2. Pawpaw, mango, pear and watermelon are examples of fruits with seeds.
3. Some seeds are small and others are big.
4. Some seeds are round and some are oval in shape.





**3**

**Strand:**

**Systems**



## Strand 3: SYSTEMS

### Sub-strand 1: THE HUMAN BODY SYSTEMS

#### LESSON 1: The external human body parts

LB: pages 90 - 96; WB: pages 50 - 53

##### CONTENT STANDARD

**B1.3.1.1** Recognise that different parts of the human body work interdependently to perform specific functions

##### INDICATOR

**B1.3.1.1.1** Identify the External Body Parts by their appropriate names (Eye, Nose, Ears)

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Recognise that different parts of the human body come together to make a system.
- ◆ Observe that different parts of the human body come together to perform specific functions.
- ◆ Name the external human body parts.

##### NEW WORDS

Eyes, nose, mouth, hand, legs and head

##### RESOURCES

Dolls, drawing of human beings on cardboard, cut outs of external human body parts (head eye, nose, ears, mouth, learners, and videos of human body showing external parts, coloured pencils, play dough for moulding, papers, pencils, crayons, scissors and masking tape.

##### CORE COMPETENCIES

Personal Development and Leadership, Digital Literacy, Critical Thinking and Problem Solving, Creativity and Innovation.

##### SUBJECT SPECIFIC PRACTICES

Recording, Generating, Observing.

##### HELPFUL LINKS

- [momjunction.com/articles/body-parts-for-kids\\_00395946/#gref](http://momjunction.com/articles/body-parts-for-kids_00395946/#gref)
- <https://www.theschoolrun.com/homework-help/parts-body>

##### Background Information

The human body is made up of many parts. When the many parts come together, they become or form a system.

The parts include the hands, nose, ears, eyes, mouth, legs, etc. These are known as external parts. These parts come together to perform a specific function or function(s).

##### Starter

Learners sing a song or poem on the body parts to motivate and prepare them for the lesson.

**Song:** My head, my shoulders, my knees, my toes (2×)  
They all belong to me(2×).

##### Use of ICT

1. Gather pictures of the body and parts of the body from the internet before the lesson.
2. Guide learners to watch videos on parts of the body and its functions on these links <https://www.youtube.com/watch?v=4oNOA3HnGG4> and <https://www.youtube.com/watch?v=25BPTbyOE4>.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Show learners a picture of a boy and girl.
- Have learners tell you what they can see in the pictures.
- Ask them to point and mention parts of the body that occur in singles. Eg, mouth, head, etc.

##### Activity 2

- Let Learners observe the pictures from books showing the external human parts.
- Have learners mention the external body parts that occur in pairs. Eg, legs, eyes, ears, etc.

- Let learners know that these are all external body parts. When they are put together they are called “a system”.
- Let learners know these parts come together to perform a specific function or function(s).

**Caution:** Since all the external body parts are important, learners should be advised to avoid losing or damaging any part of their external body. They are to take good care of themselves. Example, not playing with sharp objects such as pencils/pens/compass, not putting objects into their nose, ears, etc.

### Think and do

Learners, observe their partners and name the parts they see.

Learners are to observe carefully and draw two body parts.

### Talk About

Learners are asked critical thinking questions.

1. Why do human beings have body parts?
2. Name any four and mention one activity each body part does.
3. Which part of the body is the most important? Give reasons.

### What I Have Learnt

Have learners say or write what they have learnt for the day. Refer to learner’s book page 96 on what they have learnt.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 94 - 95 of the Learner’s Book and pages 50 - 53 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. Draw and colour a pear fruit.
2. Draw and colour a pear seed

### Answers to Review Exercise

#### Exercise 1

Learners are expected to circle eyes, hands, ears, nose and legs and cross out the mouth, neck and head.

#### Exercise 2

- |               |                |
|---------------|----------------|
| a. See-eyes   | b. Eat-mouth   |
| c. Smell-nose | d. Laugh-mouth |

#### Exercise 3

Down: Mouth, ear, hand, eye

Horizontal: Nose

### Workbook Answers

#### Trial 1

Learners’ drawing

#### Trial 2

1. a. Mouth  
b. learners’ drawing
2. a. hands / legs  
b. learners’ drawing

#### Trial 3 and Trial 4

Accept correct labelling

Refer to learners book pages 91 - 92.

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

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5. Did the learners ask you questions during and after the lesson?

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8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?

10. How are you going to rectify these in subsequent lessons?

**P:** **Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## Strand 3: SYSTEMS

### Sub-strand 2: ECOSYSTEMS

#### LESSON 1: Home of living things

**LB:** pages 97 - 101; **WB:** pages 54 - 56

##### CONTENT STANDARD

**B1.3.2.1** Show understanding and appreciation of the interactions and interdependencies of organisms in an ecosystem

##### INDICATOR

**B1.3.2.1.1** Know the places where living things live (land, air, and water)

##### LEARNING EXPECTATIONS

Learners are expected to:

- ♦ Observe that living and non-living organisms interact in their environment.
- ♦ Appreciate that animals and plants need each other's support in the environment.

**NEW WORDS** Air, Habitat, Animals, Water, Ecosystem.

##### RESOURCES

Pictures or videos of marshy areas, ponds, forests, etc.

##### CORE COMPETENCIES

Digital Literacy, Critical Thinking and Problem Solving, Communication and Collaboration Creativity and Innovation.

##### SUBJECT SPECIFIC PRACTICES

Observation, Analysing, Predicting, Evaluating, Recording.

##### HELPFUL LINKS

- <https://eschooltoday.com/learn/habitat/>
- <https://study.com/academy/lesson/types-of-habitats-for-living-things-lesson-for-kids.html>

##### Background information

Every living organism needs a home, shelter, or environment that provides the safety, ideal temperature, and basic things it needs to survive.

Living things (plants and animals) are in our community. Plants and animals depend on each other for help. The support includes shelter, food and protection. Both plants and animals have their own place to live for survival. The place where both plants and animals live survival successfully is known as a Habitat.

##### Starter

A song or a poem on the environment is sang to motivate and prepare learners for the lesson.

##### Poem

Environment

Environment 2x.

Why are you so important to plants, people and animals?.

Am important because, plants need me as their home (soil).

Animals need me as their home (Birds on trees, earthworm in the soil, fishes are found in the water, people on land.

Oh am so important.

##### Use of ICT

1. Prepare pictures of trees, marshy areas, ponds, etc.
2. Show a video of places where living things live during the lesson to learners.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Take learners on a nature walk.
- Task them to observe the different habitats around them. Examples, they should look at birds and insects on trees, bush, ponds and animals in cages.
- Back in the classroom, put learners into groups to discuss what they saw. They should tell the types of animals and where they live.

### Activity 2

- Show videos or pictures of different places where living things live. Examples are: marshy areas, ponds, rivers, trees, forest, bush, etc.

### Activity 3

- Show pictures of the three different habitats (where living things live) to learners. That is air, water and land habitats.
- Ask learners to come out with the names of different living things that are found in these three habitats.

### Activity 4

- Task learners to draw one organism in their natural habitat.

## Think and do

Refer learners to page 99 of the Learner's Book. Assist them to do the activities under "think and do".

## Talk about

Ask learners this question.

- Why do plants and animals depend on each other?

Encourage learners to give more reasons, using peer review strategy in groups and in think-pair-share strategy.

## What I Have Learnt

Using talking circles strategy, learners in circles share with more than four partners what they have learnt.

You can refer them to page 101 of the Learner's Book to read what is there.

## Assessment for learning

Supervise learners to do the assessment task. Refer them to page 100 of the Learner's Book and pages 50 - 52 of the Workbook.

## Project for home or school

Encourage parental support by engaging parents to ensure that learners do their homework or project work effectively.

Refer learners to page 101 of their learners book for their projects.

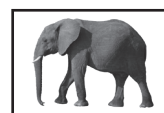
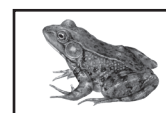
## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Choose the correct answer to each question from the options provided.

1. A habitat is a \_\_\_\_\_ of living things.  
a. home   b. space   c. house
2. A \_\_\_\_\_ is the place an animal naturally lives and grows.  
a. adaptation   b. habitat   c. house  
d. zoo
3. \_\_\_\_\_ help animals survive in their habitat.  
a. babies   b. dreams   c. adaptations  
d. environments
4. Animals must get food and \_\_\_\_\_ from their habitat.  
a. fun   b. water   c. medicine   d. trees
5. Label each animal with its habitat from the list below.

forest,   desert,   pond,   tree,   sea



## Answers to Review Exercise

1. Goat, butterflies
2. Green plants
3. The cock picks insects and earthworm from the soil.
4. A food chain is the order in which animals eat plants and other animals.
5. A habitat is a place where an organism finds the food and water it needs to live.

## Answers to Workbook questions

### Trial 1:

Learners correct identification

### Trial 2:

1. Home
2. Habitat
3. Adaptation
4. Water
5. a. Forest/Tree  
b. pond c. forest

### Trial 3:

Learners' drawing

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

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5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?





**4**

**Strand:**

**Forces and energy**

## Strand 4: FORCES AND ENERGY

### Sub-strand 1: SOURCES AND FORMS OF ENERGY

#### LESSON 1: Uses of energy

LB: pages 104 - 110, WB: pages 58 - 59

##### CONTENT STANDARD

**B1.4.1.1** Demonstrate an understanding of the concept of energy, its various forms and sources and the ways in which it can be transformed and conserved.

##### INDICATOR

**B1.4.1.1.1** Understand energy and give examples of its uses.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ♦ Talk about why they eat food.
- ♦ Understand the uses of energy.

##### NEW WORDS

Energy, solar, light, work, flashlight.

##### RESOURCES

Candle, flashlight, batteries, sources of heat, drawing/charts/pictures showing activities involving energy

##### CORE COMPETENCIES

Personal development and Leadership, Critical Thinking and Problem Solving, Communication and collaboration.

##### SUBJECT SPECIFIC PRACTICES

Observing, Predicting, Analysing, Evaluating, Generalising, Communicating.

##### Background information

Energy is used by both plants and animals in their activities. The energy we use comes from various places and is either renewable or non-renewable. Energy cannot be created or destroyed, rather it takes other forms, lighting of a candle or torch, eating food every day, switching on light both at home and school, running and walking, all involve the use of energy. Energy is the ability to do work.

##### Starter

Find out from learners why they eat food every day. Take feedback from learners and summarise the answers on the board.

Expected answers: to be strong, to be healthy, to have energy, etc.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Put learners into sizeable groups.
- Guide learners to do activities that involve the use of energy. Example:
  - Switching on light in the classroom.
  - Clapping of hands, jumping and walking.
  - Lighting of a candle or a flashlight.
- Let learners share their observations with the class.

##### Activity 2

- Assist learners to come-out with the meaning of Energy from the activities performed in Activity 1 above.
- Take the class out to engage in other activities that involve the use of energy. Example, running, walking and jumping.
- Take feedback from the learners. Example, all the activities involve energy.

##### Activity 3

- Summarise the learner's responses by explaining to them that energy is what enables us to do work.
- Without energy we cannot do any activity. E.g. Going to School, Market, Church, Mosque and work places.

##### Talk About

In a critical thinking session, engage learners to talk about and discuss among themselves:

- What will happen if they don't eat food.
- Why they need energy.

## What I have learnt

Ask learners what they have learnt about energy and activities that involve the use of energy. Let learners read the text in groups/pairs from page 110 of their learner's book.

## Project for home or school

Guide learners to understand what is expected of them under home learning. Tell them to refer to page 110 of their learners book for instructions.

### Assessment for learning

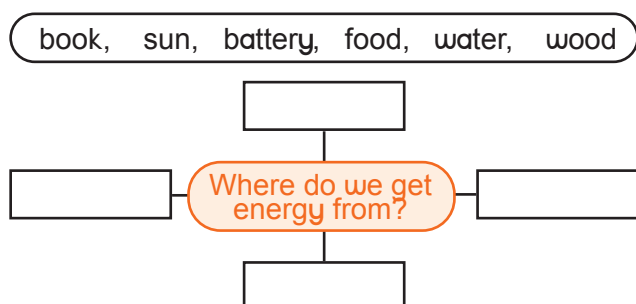
Supervise learners to do the assessment task. Refer them to pages 108 - 109 of the Learner's Book and pages 58 - 59 of the Workbook.

Supervise them and give support to the learners with learning needs.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Fill in the boxes with the words below.



2. Fill in the spaces with the correct word(s).

- ..... is the ability to do work.
- The Sun gives us energy called .....
- We eat ..... to become strong and healthy.
- Energy from batteries is called .....

### Answers to Review Exercise

#### Exercise 1

- Solar - sun
  - Chemical energy - batteries
- Energy is the ability to do work.

#### Exercise 2

- Accept appropriate drawing of sun.

### Exercise 3

- Learners to write the words in the boxes provided.

### Answers to Workbook questions

#### Trial 1:

Learners' drawing

#### Trial 2:

- food, sun, water, battery
- Energy
  - Solar
  - Food
  - Chemical energy

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

- How did the lesson go?
- Was the introduction catchy?
- Were you able to catch the learners' attention throughout the lesson?
- Were the learners able to answer your questions during and after the lesson?
- Did the learners ask you questions during and after the lesson?
- Were learners able to do the exercises at the end of the lesson?
- What three things did you do well during the lesson?
- How are you going to build on this achievement in subsequent lessons?
- What two challenges did you encounter during the lesson?
- How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Hot and cold

LB: pages 111 - 117; WB: pages 60

### CONTENT STANDARD

**B1.4.1.2** Show an understanding of the concept of heat energy in terms of its importance, effects sources and transfer from one medium to another.

### INDICATOR

**B1.4.1.2.1** Explain the terms hot and cold.

### LEARNING EXPECTATION

Learners are expected to:

- ♦ Sort items into hot and cold.
- ♦ Tell how we keep hot things hot and cold things cold.

### NEW WORDS

Hot, Cold, Light, Warm, Water

### RESOURCES

Hot tea, ice cream, ice block, hot water, water at room temperature.

### CORE COMPETENCIES

Creativity and innovation, Personal Development and leadership, Critical Thinking and Problem Solving

### SUBJECT SPECIFIC PRACTICES

Manipulating, Predicting, Analysing, Generalising, Communicating

### Background information

Things around us are usually hot or cold. We normally keep things in fridges, thermos flask, ice chest and food warmers to make them stay hot or cold for long.

### Starter

Ask learners to come out with things that are usually hot or cold. Let them present their ideas orally in groups, in pairs or individually.

Expected answers: hot metal, ice cream, ice water, hot tea, etc.

## Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Using the resources (hot tea, ice cream, ice block, hot water, ordinary water), display hot and cold things for learners to talk about them.
- Find out from learners those that are cold and those that are hot.

### Activity 2

- Give out the following to learners in groups, Hot tea, ice cream, ice block, hot water, ordinary water.
- Engage learners to sort the items into hot and cold in groups or in pairs.
- Supervise this activity and provide support.

### Activity 3

- In groups or in pairs, learners should talk about how we keep hot things hot and cold things cold for a long time. Refer learners to page 113 of the Learner's Book.
- Encourage learners to do group presentations.

**Note:** Provide safety measures when working on these activities.

## Talk About

Elaborate on learners ideas to discuss talk about questions in the Learner's Book page 114.

## What I have learnt

Find out from learners what they have learnt about hot and cold.

Use talking circle, whole group or think-pair-share strategy to discuss.

Refer learners to page 117 of the Learner's Book to read out what is outlined there.

## Project for home or school

Learners are to design and make a fridge.

Encourage them to do their projects using any suitable material like cardboard, clay or play dough.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 114 - 116 of the Learner's Book and page 60 of the Workbook.

Let learners observe what happens to a metal spoon after it has been left on the sun for two hours.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. Write two hot things you know.
  - a.
  - b.
2. Write two cold things you know.
  - a.
  - b.

### Answers to Review Exercise

#### Exercise 1

Hot things	Cold things
A	B
D	C
F	G
E	

2. Accept any 2 from A, D, F, E.
3. Accept any 2 from B, C and G
4. Because the metal was hot
5. Accept correct circling of answers

#### Exercise 2

1. Because he is feeling cold
2. Burn
3. Accept appropriate drawing of any hot thing.

### Answers to Workbook questions

#### Trial 1:

boiled water  
heated pressing iron  
burning wood  
other answers

#### Trial 2

yoghurt, fish

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

**A: Analyse: Analyse** by asking yourself the following questions:

1. How did the lesson go?
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8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?



## Strand 4: FORCES AND ENERGY

### Sub-strand 2: ELECTRICITY AND ELECTRONICS

#### LESSON 1: Importance of electricity

LB: pages 118 -122, WB: pages 61 - 62

##### CONTENT STRANDARD

**B1.4.2.1** Demonstrate knowledge of generation of electricity, its transmission and transformation into other forms of energy.

##### INDICATOR

**B1.4.2.1.1:** Know the importance of electricity and identify common household appliances that require electricity to work.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify the importance of electricity.
- ◆ Sort items into those that use electricity and those that do not use electricity.

##### NEW WORDS

Electricity, energy, battery.

##### RESOURCES

Pictures, charts, flashcards word cards and things that use electricity and things that do not use electricity. Example, fridge, iron (box/ electrical), kerosene stove, tc, laptop, mobile phone, etc.

##### CORE COMPETENCIES

Cultural Identity and Global Citizenship, Creativity and innovation, Personal Development and Leadership, Critical Thinking and Problem Solving, Digital Literacy.

##### SUBJECT SPECIFIC PRACTICES

Analysing, Predicting, Generating.

##### HELPFUL LINK

- <http://blog.rallison.com/electricity-importance-in-daily-life/>

##### Background information

Electricity is important in our daily lives. Most People give credit to Benjamin Franklin for discovering electricity. A lot of household appliances require electricity to work.

##### Starter

Ask learners to say something about electricity. Encourage them to mention things in their homes that use electricity. Example fridges, television, electric iron, fan, etc.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Provide pictures of television, box iron, electric iron and fan, fridges, computers, etc. Where you can get the real objects, use them for the activity.
- In groups, let learners sort items into those that use electricity and those that do not use electricity.
- Use flashcards, charts, pictures and word cards for the activity.
- Refer learners to page 118 of the Learner's Book to look at the pictures and answer the questions.

##### Activity 2

- Using pictures and charts, let learners match electrical items to their uses.
- E.g. Washing machine, electronic iron, sound system, mobile phone, rice cooker, fridge, television and electronic fan.
- Encourage learners to present their ideas in groups.

##### Activity 3

- Guide learners to brainstorm on why electrical appliances are connected to a source of electricity.
- Find out from learners what happens when there is no electricity at home, schools and industries.
- Encourage learners to talk about the importance of electricity. Examples, for ironing clothes, for cooking, freezing water, etc.

## Talk About

Engage learners in a thought section to discuss what will happen in schools, homes and work places if there was no electricity.

## What I have learnt

Let learners read what they have learnt from the Learner's Book on page 122 and share their readings with their friends.

## Project for home or school

Read the home learning activity with learners to understand what they have to do. Refer them to page 122 of the learner's book.

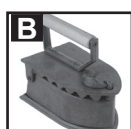
### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 121 - 122 of the Learner's Book and pages 61 - 62 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Draw a line to show the things that use electricity and those that do not use electricity.



Use Electricity

Do not use Electricity

### Answers to Review Exercise

#### Exercise 1

1. a. energy    b. work    c. safely

#### Exercise 2

- 1, 3 and 5 → does not use electricity  
2, 4 and 6 → use electricity

#### Exercise 3

1. Accept correct drawing of a and b.  
2. a, c and d

### Answers to Workbook questions

#### Trial 1:

Use electricity → A, C  
Do not use electricity → B, D

#### Trial 2:

It helps us use light to see  
It helps us iron our clothes  
It helps us power our radio  
other answers

#### Trial 3:

Learner's correct drawing

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

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8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Uses of electronic devices

LB: pages 123 - 128; WB: pages 63 - 65

### CONTENT STANDARD

**B1.4.2.2** Know the functions and assemblage of basic electronic components.

### INDICATOR

**B1.4.2.2.1** Know examples of common electronic devices and their uses.

### LEARNING EXPECTATION

Learners are expected to:

- ◆ List examples of common electronic devices.
- ◆ Match electronic devices with their use.
- ◆ Model any electronic device of their choice.

### NEW WORDS

Electronic, device, camera, electricity.

### RESOURCES

Pictures/charts showing electronic devices.

### CORE COMPETENCIES

Communication and Collaboration, Personal Development and Leadership, Digital Literacy Critical Thinking and Problem Solving, Creativity and Innovation.

### SUBJECT SPECIFIC PRACTICES

Analysing, Predicting, Generating

### Background information

There are a lot of electronic devices. Some use batteries and others also use electricity.

Electronic devices include Television, mobile phones, DVD players, laptops, desktop computers, printers, fans, cameras, iPad, washing machines, game consoles and radio.

Mobile phone is the electronic device that is mostly used.

### Starter

Display electronic devices, eg television, mobile phone, laptop, radio, etc. in class. Refer learners to page 123 of their learners book.

Ask learners to point to electronic devices they see every day or use at home.

They should talk about them.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

- Engage learners to help display real or pictures of electronic devices such as televisions, radio, laptops, wall clock, wrist watches, etc.
- Let learners identify the electronic devices by their names in groups.
- Let them know that all that they have identified are called **electronic devices**.

#### Activity 2

- Put learners into groups of five.
- Provide cards with uses of electronic devices to each group.
- Engage learners in a matching game to match the devices with their uses.
- Mention an electronic device and each groups picks up the card that has the uses written on it.

#### Activity 3

- Provide learners with appropriate material such as Blu tack, clay or card board.
- Supervise learners to model any electronic device of their choice.
- Guide them to draw and colour devices.
- Let them share their drawings for discussion.

### Talk About

Encourage learners to talk about electronic devices they have at home and why they need electronic devices.

### What I have learnt

Encourage learners to talk about electronic devices and their uses. Help them to read the text on page 128 of the Learner's Book.

## Project for home or school

Assist learners to understand what they have to do under project for home or school. Refer them to page 128 of the Learner's Book for their project.






### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 127 of the Learner's Book and pages 63 - 65 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Match the items in the pictures below to their names. Use lines.

1		a	phone
2		b.	radio
3		c.	camera
4		d.	clock
5		e	television

### Answers to Review Exercise

#### Exercise 1

- Radio: for listening to news and music.
- Television: for watching programmes.
- Mobile phone: for talking to people, for taking pictures.
- Camera: for taking pictures.
- Clock: for telling the time.

### Answers to Workbook questions

#### Trial 1:

- learner's correct drawings
- true
  - true

- battery, electricity

#### Trial 2:

- |   |   |   |
|---|---|---|
| 1 | - | C |
| 2 | - | E |
| 3 | - | D |
| 4 | - | A |
| 5 | - | B |

#### Trial 3:

Learner's correct answer ( Answers will vary)

#### Trial 4:

- Learner's correct drawing
- True

## Diagnostic Assessment

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In other words, you have to **"TRAP"** the lesson taught.

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**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## Strand 4: FORCES AND ENERGY

### Sub-strand 3: FORCES AND MOVEMENT

#### LESSON 1: Force as a pull or push

LB: pages 129 - 133; WB: pages 67 - 69

##### CONTENT STANDARD

**B1.4.3.1** Know that movement is caused by applied forces due to the release of stored energy.

##### INDICATOR

**B1.4.3.1** Explain force as a pull or push on an object.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Explain force as a pull or push on an object.
- ◆ Tell why pushed objects move.

##### NEW WORDS

Force, Push, Pull.

##### RESOURCES

Pictures of activities involving push or pull.  
E.g. People pushing a car, fishermen pulling their net, a boy or girl pulling a goat, charts/drawings

##### CORE COMPETENCIES

Personal Development and Leadership, Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Innovation

##### SUBJECT SPECIFIC PRACTICES

Observing, Analysing, Predicting, Generalising.

##### HELPFUL LINKS

- <https://www.generationgenius.com/videolessons/pushes-and-pulls/>
- <https://study.com/academy/lesson/push-pull-forces-lesson-for-kids-definition-examples.html>

##### Background information

Force as a pull or push has magnitude and direction. It involves an interaction between two or more objects. When objects are pushed they move because of force. When the interaction between two objects ceases, the objects no longer experience force.

Force is measured in Joules (J). A force can change shape of an object. It can cause objects to slow down, to accelerate. A push is the force that moves an object away from something. A pull is the force that brings objects closer.

##### Starter

Take your learners out of the class to participate in several activities involving pulling and pushing. Eg. Tug of war, throwing of balls.

##### Use of ICT

1. Find videos or pictures before the class on teaching this lesson.
2. During the lesson, you will have to show learners a video of fishermen pulling their net. Get this ready from <https://www.youtube.com/watch?v=haJxV8UcySI>.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Put learners into sizeable groups to discuss their observations about the activities from the starter.
- Show pictures/charts/drawings or video of activities that involves push and pull. Refer learners to pictures from the Learner's Book on page 129 to talk about them.

##### Activity 2

- Engage learners to discuss other actions that will cause objects to move. Example, pulling, pushing, stretching and dragging.

- Find out from learners why pushed objects move.
- From learners responses, explain to them that force is a **pull** or **push** of an object.

### Activity 3

- Let learners draw pictures of activities involving pushing and pulling eg. Pushing a table, pulling a rope.
- Supervise their drawings and give support.

### Talk About

Deduce from learners their understanding of the lesson by engaging them in these verbal exercise.

Refer to page 130 of Learner's Book and lead the class to answer the questions.

### What I have learnt

Have your reflection with learners on what they have learnt. Ask learners to discuss in groups or in pairs about the lesson.

Refer them to page 133 of the Learner's Book to read out what is written there. Encourage them to present their ideas in groups.

### Project for home or school

Refer learners to page 133 of the Learners Book.

Explain to learners what is expected of them.

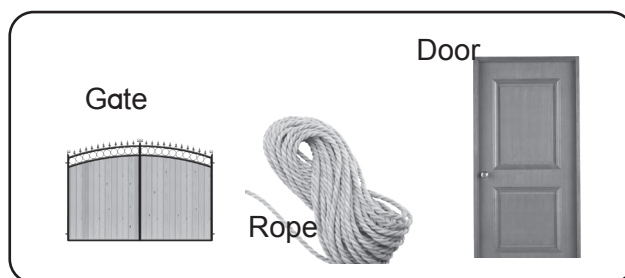
### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 131 - 132 of the Learner's Book and pages 67 - 69 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Complete the table using the following pictures.



No.	Objects we can push	Objects we cannot push
1		
2		
3		
4		
5		
6		
7		

### Answers to Review Exercise

#### Exercise 1

OBJECTS WE CAN PUSH	OBJECTS WE CAN PULL
Car	Rope
Chair	Dog
Table	Gate
Door	Door
Drawer	Chair
	Table

#### Exercise 1

- a. they are pushing the car  
b. To help the car move.

#### Exercise 3

- Accept appropriate drawings.
- Force is a push or pull.
- Force.



## Workbook Answers

### Trial 1:

	Objects We Can Push	Object We Can Pull
1	Car	
2	Chair	Rope
3	Table	
4	Gate	Dog
5	Door	

### Trial 2:

1. Learners' correct answers
2. Push pull
3. C
4. false
5. A
6. true

### Trial 3:

1. pushing the ball
2. Pushing the table
3. It will move

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

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**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Simple machines

LB: pages 134 - 138; WB: pages 70

### CONTENT STANDARD

**B1.4.3.2** Recognise some simple machines used for making work easier, analyse their advantages and know their uses. Eg. levers, inclined planes and pulleys.

### INDICATOR

**B1.4.3.2.1** Understand what simple machines are and cite common examples.

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify what simple machines are.
- ◆ Cite common examples of simple machines.
- ◆ Draw any simple machines of their choice.

### NEW WORDS

Simple machine, work

### RESOURCES

Cut-out pictures/Drawings or real simple machines.

### CORE COMPETENCIES

Communication and Collaboration, Personal Development and Leadership, Critical Thinking and Problem Solving, Creativity and Innovation.

### SUBJECT SPECIFIC PRACTICES

Manipulating, Classifying, Analysing.

### HELPFUL LINKS

- [https://www.ducksters.com/science/simple\\_machines.php](https://www.ducksters.com/science/simple_machines.php)
- <https://www.livescience.com/49106-simple-machines.html>

### Background information

Simple machines make work easier and faster. They are found in our homes and schools. Simple machines do not have complex parts. Wheelbarrow, table knife, scissors, claw hammer, broom, plier, spanner, cutlass, rake, opener are all examples of simple machines.

### Starter

Let learners in groups or in pairs mention common simple machines in their homes and School. Let them present their ideas in class.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Show learners pictures/video/cut-out of pictures/drawings of simple machines.
- Let learners observe the pictures of simple machines and identify their uses.

### Activity 2

- Demonstrate the use of some common simple machines. Example, bottle opener to open a bottle of drink, broom to sweep, etc.
- Engage learners to practise the use of simple machines under your supervision. Eg. Cutting a piece of paper with scissors, opening a bottle with a bottle opener, sweeping with a broom, etc.

### Activity 3

- Ask learners to come out with the importance of simple machines they see in their daily lives.
- Brainstorm with learners to come out with the meaning of simple machines. Example: It makes work easier, faster, etc.
- Let learners know that they must not use their teeth in opening bottles nor use machines without supervision.
- Engage learners to draw any simple machine of their choice.
- Let learners share their drawings in class for discussion.

### Talk About

Let learners work in groups to tell the class what type of simple machines they have used at home or school before.

Let them also discuss why they think the items are simple machines and tell you if they have a lot of parts.

## What I have learnt

Summarise your lesson with learners. Ask them questions on what they have learnt. Read the text with them. Use peer sharing to engage learners on what I have learnt on page 138 of the Learner's Book.

## Project for home or school

Ask learners to do the home task when they get home.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 137 - 138 of the Learner's Book and page 70 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Form three (3) words from the word **machines**
- Fill in the spaces with the letters in the bracket.  
(a, i, e, o, m)
  - m\_\_chine
  - w\_\_rk
  - si\_\_pl\_\_

### Answers to Review Exercise

#### Exercise 1

- Broom
  - Wheelbarrow
- Learner's correct answers.

#### Exercise 2

- True
- Simple machines

## Workbook Answers

### Trial 1:

- Simple machines
- him, same, chase (other answers)
- Machine
  - work
  - simple

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

**A: Analyse: Analyse** by asking yourself the following questions:

- How did the lesson go?
- Was the introduction catchy?
- Were you able to catch the learners' attention throughout the lesson?
- Were the learners able to answer your questions during and after the lesson?
- Did the learners ask you questions during and after the lesson?
- Were learners able to do the exercises at the end of the lesson?
- What three things did you do well during the lesson?
- How are you going to build on this achievement in subsequent lessons?
- What two challenges did you encounter during the lesson?
- How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

**5**

**Strand:**

**Humans and the  
environment**

## Strand 5: HUMANS AND THE ENVIRONMENT

### Sub-strand 1: PERSONAL HYGIENE AND SANITATION

#### LESSON 1: The need for bathing

LB: pages 140 - 146, WB: pages 72 - 74

##### CONTENT STANDARD

**B1.5.1.1** Recognise the importance of personal hygiene.

##### INDICATOR

**B1. 5.1.1.1** Explain the need for bathing and how it is done.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Explain why bathing is important.
- ◆ Demonstrate how bathing is done.

##### NEW WORDS

Bathroom, bath, body, sponge, soap, dish, hygiene.

##### RESOURCES

Real items used for bathing; water, etc.  
Pictures, Videos (Home learning task), a doll.

##### CORE COMPETENCIES

Critical Thinking and Problem Solving, Collaboration and Communication, Creativity and Innovation, Personal Development and Leadership, Digital Literacy.

##### SUBJECT SPECIFIC PRACTICES

Analysing, Predicting, Evaluating.

##### HELPFUL LINK

- <http://www.hygieneexpert.co.uk/washingbathing.html>
- <https://www.freddyfit.co.uk/kids/articles/good-hygiene-habits.php>

##### Background Information

We need to keep our bodies clean all the time. Personal hygiene involves the things that we do to stay healthy every time.

We must know that it is very important to bath, often to keep our bodies healthy.

##### Starter

Engage learners in a discussion to tell you:

- the activities they do before coming to school everyday. Example, sweeping, washing of face, brushing of teeth, bathing, eating, dressing, etc.

##### Use of ICT

Find photographs or videos on the internet before the class begins.

Show these to learners during the class and at relevant times in class discussions.

Examples include:

- pictures of items used in bathing.
- pictures or videos demonstrating how to bath.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Put learners into groups to talk about the number of times they bath in a day and why.
- Make learners mention items used for bathing and talk about them. Example, sponge, towel, soap, bucket, etc.

##### Activity 2

- Provide learners with items used in bathing.
- In groups, have learners discuss how they bath at home.

##### Activity 3

- Display pictures or video on how to bath to learners. You can refer them to pages 141 to 144 of the Learner's Book to read and look at the pictures on how to bath.
- Using a doll, have learners practice the proper way of bathing by looking at the step by step guide in the Learner's Book.
- Explain to learners the ideal number of times we must bath in a day. ie twice a day.

#### Activity 4

- Task learners to draw some items used in bathing. Let them display their drawings for discussion.

#### Talk About

Let learners discuss as a class why they use soap in bathing and what will happen if they don't bath everyday.

#### What I have learnt

Have learners say or write what they have learnt for the day.

1. We must bath everyday to stay clean.
2. We use clean water, sponge and soap to bath.
3. We use a towel to clean water from our bodies after bathing.

#### Project for home or school

Learners are expected to demonstrate how to bath using a doll.

#### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 146 of the Learner's Book and pages 72 - 74 of the Workbook.

#### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. Choose the correct answer.  
A. We must bath ..... in a day  
a. only once    b. twice    c. three times  
  
B. We must bath everyday so that we.....  
a. smell good    b. smell bad  
c. look dirty
2. The item we use to wipe or clean our body after bathing is called a .....
3. If we don't bath everyday, we will .....

#### Answers to Review Exercise

##### Exercise 1

This is a simple matching exercise. Learners will draw lines from words to match the respective correct pictures.

#### Workbook Answers

##### Trial 1:

soap, bucket, sponge, towel.

##### Trial 2:

1. a. True  
b. True  
c. False
2. A. b. twice  
B. a. we smell good
3. Towel
4. Smell bad

##### Trial 3:

Learner's correct drawing

##### Trial 4:

Learners' correct drawing

#### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to "TRAP" the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Clean and healthy teeth

LB: pages 147 - 150, WB: pages 75 - 76

### CONTENT STANDARD

**B1.5.1.1** Recognise the importance of personal hygiene.

### INDICATOR

**B1.5.1.1.2** know the need for and how to clean the teeth.

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Demonstrate how to properly clean their teeth.
- ◆ Tell why we clean our teeth.

### NEW WORDS

Water, toothpaste, tooth brush, chewing sponge.

### RESOURCES

Toothpaste, tooth brush, water, chewing sponge, chewing stick, cup, videos or pictures on cleaning the teeth.

### CORE COMPETENCIES

Critical thinking and Problem Solving, Collaboration and Communication, Personal Development and Leadership, Digital Literacy, Creativity and Innovation, Cultural Identity and Global Citizenship.

### SUBJECT SPECIFIC PRACTICES

Analysing, Predicting, Evaluating.

### HELPFUL LINKS

- <https://kidshealth.org/en/kids/teeth-care.html>
- <https://www.nia.nih.gov/health/taking-care-your-teeth-and-mouth>

### Background Information

Our teeth are very useful. It helps us to chew food and be able to eat well.

Without our teeth, we will find it very hard to eat well so we must keep our teeth clean every time.

We can keep it clean by brushing our teeth every morning and evening. We must always

wash our mouth after eating and never put anything in our mouth that can harm our teeth.

### Starter

Lead learners to sing a song or rhythm on brushing the teeth below.

Brush your teeth up and down.

Brush your teeth round and round.

Brush your teeth from left to right.

Brush your teeth in the morning and night.

Brush brush brush.

Brush brush brush.

Brush your teeth in the morning and night.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Have learners mention the items they use at home in cleaning their teeth. E.g. toothbrush, toothpaste, chewing stick, chewing sponge, etc.

### Activity 2

- Engage the whole class to watch a video or pictures of a person cleaning his or her teeth. You can refer them to pages 147 and 148 of the Learner's Book to look at the steps.

### Activity 3

- Engage learners in a think-pair-share activity to talk about what they saw in the video or pictures and why the tooth brush is moved in an upward and downward motion when the teeth is being cleaned.

### Activity 4

- Demonstrate the right way of brushing the teeth in front of learners using a toothbrush.

### Activity 5

- Ask learners to draw some items used in brushing the teeth. Lead them to display their drawings for a whole class discussion.



## Talk About

In groups, engage learners to talk about what will happen if they do not brush their teeth regularly.

They should also discuss why it is very important to brush their teeth.

## What I have learnt

Learners are to talk or write about what they have learnt for the day. You can refer them to page 150 of the Learner's Book to read what is there.

You can add the following:

1. We must clean our teeth twice a day. That is, in the morning after we wake up and in the evening before we sleep.
2. We clean with a toothbrush using a tooth paste.
3. We can also clean with a chewing stick or chewing sponge using toothbrush.
4. We must use clean water to rinse our mouth after cleaning our teeth.

## Project for home or school

Learners are to design a poster to show what they use in cleaning their teeth at home.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 150 of the Learner's Book.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. What should we do to keep our teeth clean and healthy. Write three of them.

### Answers to Review Exercise

#### Exercise 1

- a → Toothbrush
- b → Chewing stick
- c → A glass of water
- d → Toothpaste

### Answers to Workbook questions

#### Trial 1

1. Toothbrush
2. Water

3. Chewing sponge
4. Chewing stick

#### Trial 2

1. Learner's correct answers
2. Learner's correct drawing

#### Trial 3

1. a to chew  
b to talk
2. i Chewing stick  
ii Toothbrush and toothpaste  
iii Chewing sponge

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 3: Keeping your hands clean and healthy

LB: pages 151 - 158; WB: pages 77 - 79

### CONTENT STANDARD

**B1.5.1.1** Recognise the importance of personal hygiene

### INDICATOR

**B1. 5.1.1.3** Demonstrate an understanding of the need for and how to wash the hands.

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Demonstrate the proper way of washing the hands.
- ◆ Tell why it is important to wash their hands.

### NEW WORDS

Soap dish, soap, rub, sink, kitchen, toilet, palm, fingers, nail cutter, towel, water, wash, wipe, palm.

### RESOURCES

Water, tissue, videos, pictures, bottles, veronica buckets, liquid soap or soap in a soap dish.

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Collaboration and communication, Personal Development and Leadership, Digital Literacy

### SUBJECT SPECIFIC PRACTICES

Analysing, Predicting, Evaluating.

### HELPFUL LINKS

- <https://www.cdc.gov/healthywater/hygiene/hand/handwashing.html>
- <https://www.peacehealth.org/healthy-you/why-how-keep-your-hands-clean>
- <https://www.healthhub.sg/live-healthy/471/keepyourhandsclean>

### Background Information

Germs hang out on our hands all the time. Germs cannot be seen with the naked eyes. While most are harmless, others can cause serious infection like influenza. These germs can enter your body when your contaminated

hands come into contact with your nose, mouth, eyes or open wounds. We can avoid an infection simply by washing our hands.

Proper hand washing involves washing your hands for at least 20 seconds with soap under running water. The constant rubbing action helps soap break down the grease and dirt that carry most germs.

This way, your hands don't just smell fresh, but you'll also reduce the germ count on your hands by up to 99%.

### Starter

Lead learners to say a poem on hand washing below.

*Wash, wash your hands.*

*Before and after eating.*

*Wash your hands.*

*After using the wash room.*

*Wash your hands.*

*After playing.*

*Wash your hands.*

### Use of ICT

Find photographs or videos on the internet before the class begins. Show these to learners during the class and at relevant times in class discussions.

Examples include:

- pictures of items used in cleaning the hands.
- pictures or videos demonstrating how to wash the hands.
- pictures of dirty hands.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

### Activity 1

- Lead learners to mention the things used in washing the hands. Example, soap, water, etc.
- discuss when and how to wash the hands.

### Activity 2

- Bring the items used in washing the hands to class. Show them to learners and tell them how each one is used.
- Take learners outside the classroom and use the “veronica bucket” to demonstrate the proper way of washing the hands to them. Let them do same.
- You can refer learners to pages 155 and 156 of the Learner’s Book to read and observe the steps in washing the hands.

### Activity 3

- Put learners into groups of five.
- Task each group to brainstorm and come out with the possible health effects associated with the failure to wash their hands properly.
- Each group should select a leader to present their findings for the whole class to discuss. Guide them to make changes where necessary.

### Activity 4

- Ask learners to draw themselves washing their hands with soap under running water.
- Let them display their drawings for a class discussion.

## Talk About

In groups, engage learners to talk about why it is important for them to wash their hands.

Ask them to brainstorm and tell each other what will happen if they don’t wash their hands properly.

## What I have learnt

Learners talk or write about what they have learnt for the day.

1. We must wash our hands after playing, before eating, after eating and after using the washroom.
2. We must wash our hands very often.

## Project for home or school

Learners practice how to wash their hands. Direct them to what they are expected to do.

Refer them to pages 157 and 158 of the Learner’s Book to complete the project.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 157 of the Learner’s Book and page 77 - 79 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. Which of the following is the best way to wash our hands? Give reasons.
  - a. Washing under running water.
  - b. Washing in a bowl of water.

### Answers to Review Exercise

#### Home learning

Missing letters are as follows:

u  
o and p  
l, a, a and e  
a and h

#### Exercise 1

1. a helps to wash germs and the dirt away from our hands.
  - b It prevents the germs from entering our stomach.
2. a. True
  - b. True
  - c. False

### Workbook Answers

#### Trial 1

1. Soap
2. Germs
3. Palm
4. Dirty
5. Fingers

#### Trial 2

1. Not to fall sick
2. To remove germs
3. Our hands become dirty when we play

### Trial 3

1. a. soap  
b. water
2. towel
3. hands, eating  
Washroom, wash, playing

### Trial 4

Learners' correct drawing(s).

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

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**A: Analyse: Analyse** by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?

3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 4: How to keep the environment clean

LB: pages 159 - 164 , WB: pages 80

### CONTENT STANDARD

**B1.5.1.2** Appreciate the natural and human features of the local environment and the need for keeping the environment clean

### INDICATOR

**B1.5.1.2.1** Know how to keep the environment clean

### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify the need to keep the environment clean.
- ◆ Tell how to keep the environment clean.

### NEW WORDS

Environment, scrub, weed, dust, dustbin

### RESOURCES

Brooms, dust pan, duster, rake, scrubbing brush, mop, pictures, videos etc.

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Collaboration and Communication, Personal Development and Leadership, Creativity and Innovation, Digital Literacy

### SUBJECT SPECIFIC PRACTICES

Analysing, Predicting, Evaluating, Observing.

### HELPFUL LINKS

- <http://thebrightquest.com/how-to-keep-the-environment-clean>
- <https://www.greenchildmagazine.com/7-eco-friendly-tips-to-keep-the-environment-safe-and-clean/>

### Background Information

The environment in which we live in must be kept clean all the time. At school, at home and in the communities, we must always keep our environment clean by sweeping, dusting, weeding and scrubbing.

### Starter

Engage learners in a short discussion to tell you what they do every morning before coming to school. Example, sweeping, cleaning, dusting, brushing, eating, etc.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

- Take learners out on a nature walk to observe the things in the environment.
- Back in the classroom, lead learners to talk about what they observed during the nature walk.

#### Activity 2

- Refer learners to page 160 of the Learner's Book to look at the pictures of natural and human features of the environment and talk about them. Put learners in groups to talk about what they do in the morning to keep the school environment clean before they go for morning assembly.

#### Activity 3

- Give out some cleaning materials to learners. Examples are: brooms, dust pan, duster, rake, cutlass, scrubbing brush, mop, etc.
- Ask them to mention their names and tell their friends what they are used for. Example, a cutlass is used for weeding, a broom is used for sweeping, etc.

#### Activity 4

- Engage learners in a brainstorming session to discuss what will happen if they do not weed or keep their school, home or community clean.
- Write key responses from learners on the board.

#### Activity 5

- In groups, engage learners to compose a song on how to keep the environment clean or draw pictures to show clean environments.

## Talk About

Engage learners in a critical thinking session to talk about:

1. What will happen if the environment is dirty?
2. Can we live a healthy life if the environment is unclean?

## What I have learnt

Learners talk or write about what they have learnt for the day.

Refer them to page 164 of the Learner's Book to read out loud.

## Project for home or school

Have learners draw and colour two items they use for cleaning at home.

Refer them to page 164 of the Learner's Book to complete the other project work.

## Assessment for learning

Supervise learners to do the assessment task.

Refer them to pages 162 - 163 of the Learner's page 80 of the Workbook.

## Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. List five things we can do to keep our environment clean at all times.

## Answers to Review Exercise

### Exercise 1

1. A
2. B

### Exercise 2

suggested words

1. on
2. ten
3. none
4. men
5. not
6. move

### Exercise 3

1. learners to point
2. suggested answer
  - human being
  - building
  - animals

## Answers to Workbook questions

### Trial 1:

1. sweeping
2. scrubbing
3. weeding
4. cleaning

### Trial 2:

1. a. sweep  
b. weed
2. a. cutlass  
b. broom  
c. mop

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

**A: Analyse: Analyse** by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan: Plan** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?



## Strand 5: HUMANS AND THE ENVIRONMENT

### Sub-strand 2: DISEASES

#### LESSON 1: Common skin diseases

LB: pages 165 - 168, WB: pages. 81 - 82

##### CONTENT STANDARD

**B1.5.2.1** Know common diseases of humans, causes, symptoms, effects and prevention

##### INDICATOR

**B1.5.2.1.1** Identify some common diseases that affect the skin and their causes

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify common skin diseases such as ringworm, chicken pox, measles and eczema.
- ◆ Know their causes, symptoms and how to prevent them.

##### NEW WORDS

Weather, heat rashes, skin, ringworm, chickenpox, eczema, measles

##### RESOURCES

Videos and pictures of common skin diseases, etc.

##### CORE COMPETENCIES

Critical Thinking and Problem Solving, Collaboration and Communication, Personal Development and Leadership, Digital Literacy

##### SUBJECT SPECIFIC PRACTICES

Observing, Generalising.

##### HELPFUL LINKS

- <https://www.healthline.com/health/skin-disorders#pictures>
- <https://www.medicalnewstoday.com/articles/316622.php#internal-conditions>
- <https://www.healthline.com/health/skin-disorders#pictures>

##### Background Information

Skin disorders vary greatly in symptoms and severity. They can be temporary or permanent, and may be painless or painful. Some have

situational causes, while others may be genetic. Some skin conditions are minor, and others can be life-threatening.

There are many different types of skin disorders. Skin diseases affect our skin and change the colour of our skin. Some other skin diseases that can affect us are ringworm, chicken pox, measles and eczema.

##### Starter

- They should also tell you if they have seen someone infected with any skin disease before.
- Engage learners on their experiences of skin diseases.

##### Use of ICT

- Use this youtube link to get a video on chicken pox ahead of the lesson. <https://www.youtube.com/watch?v=t3Jm6kPTRhY>.
- Get pictures of other skin diseases ready for the lesson.

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Put learners in groups and engage them to name some common skin diseases that affect people in their communities. Example, heat rashes, measles, eczema, ringworm, chicken pox etc.
- In groups let learners share their ideas with the whole class through oral presentations. Write all common skin diseases on the board.

##### Activity 2

- Show pictures of some common skin diseases to learners. You can refer them to pages 165 and 166 of the Learner's Book to look at the pictures and talk about them.



### Activity 3

- Ask learners who have been infected with any skin disease previously to share their experiences.
- In a form of discussion, let them tell the whole class some of the symptoms they experienced. Example, itching skin, blisters, sores, headaches, rashes etc.

### Activity 4

- Engage learners to talk about the causes of common skin diseases through think-pair-share strategy. Refer them to the table on page 167 of the Learner's Book to read more on it.
- Learners talk about the ways they can prevent skin diseases. Let them read the notes on page 167 of the Learner's Book.

### Talk About

In groups, engage learners to talk about what will happen if they do not visit health centre when they are affected by a skin disease.

### What I have learnt

Learners talk or write about what they have learnt for the day.

1. Some skin diseases that can affect us are ringworm, chicken pox, measles and eczema.
2. We can prevent skin diseases by:
  - Avoid contact with persons having skin diseases.
  - Avoid sharing towels and handkerchiefs with persons infected with skin diseases.

### Project for home or school

Instruct learners to draw or use cut out pictures to show a child who has chicken pox or ringworm.

They can make a poster with their picture or drawing.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to page 168 of the Learner's Book and pages 81 - 82 of the Workbook.

### Answers to Review Exercise

#### Exercise 1

1. —————> Eczema
2. —————> Ringworm
- 3 and 5 —————> Heat rashes
4. —————> Chicken pox

### Answers to Workbook questions

#### Trial 1

1. eczema
2. ringworm
3. measles

#### Trial 2

1. virus
2. fungi

#### Trial 3

Learners' correct drawing

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

**A: Analyse: Analyse** by asking yourself the following questions:

1. How did the lesson go?
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3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?
6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## Strand 5: HUMANS AND THE ENVIRONMENT

### Sub-strand 3: SCIENCE AND INDUSTRY

#### LESSON 1: Impact of technological devices in our environment

LB: pages 169 - 173; WB: pages 83 - 85

##### CONTENT STANDARD

**B1.5.3.1** Recognise the impact of science and technology on society.

##### INDICATOR

**B1.5.3.1.1** Identify technologies in the immediate environment and describe the impact of the technology on society.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Identify common technologies in their immediate environment.
- ◆ Create new technologies that will benefit them.

##### NEW WORDS

Fan, radio, fridge, television, mobile phone, car, computer, DVD player, toy car.

##### RESOURCES

Pictures, Videos of other technologies in operation, mobile phones, toy cars, computers, DVD, Sound systems, microphone etc.

##### CORE COMPETENCIES

Critical Thinking and Problem Solving, Collaboration and Communication, Personal Development and Leadership, Digital Literacy, Creativity and Innovation.

##### SUBJECT SPECIFIC PRACTICES

Observation, Evaluating, Analysing.

##### HELPFUL LINKS

- <https://www.useoftechnology.com/technology-today-tomorrow/>
- <https://www.aginginplace.org/technology-in-our-life-today-and-how-it-has-changed/>

##### Background Information

Technologies make our lives very easier. When the weather is warm, we switch on the fan to blow air. We listen to the radio to get information from our communities and from all parts of the world. We store foodstuffs in our fridge.

We use the mobile phone to call our friends and do many other things. We sit in a car to travel from one place to the other.

##### Starter

Let learners mention some technological devices they have seen before.

##### Use of ICT

Get pictures and videos on different technological devices like mobile phones, television, computer, etc ahead of the class.

You can use the link below to get a video on the first medical drone delivery in Ghana. Show the video to learners during the lesson.

<https://www.youtube.com/watch?v=X8-aMWLgBHQ>

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Bring electronic devices such as toys, laptops, smart phones, watches, radio and DVD players to class and show them to learners.
- Let them mention the names of each device they see.
- Show videos or pictures on technologies and their impact on the society to learners.
- Through think-pair-share, make learners talk about what they saw in the video or pictures.

### Activity 2

- Put learners into groups. Have them mention some technological devices and their uses. Refer them to page 171 of the Learner's Book. Guide them to mention each technological tool listed and talk about their uses.
- Learners in their groups discuss the technologies in their various groups and how it has impacted their lives or community or environment.

### Activity 3

- In groups, engage learners to design and make simple technological devices of their choice using materials such as blue tack, clay, cardboard and paper.

### Talk About

Ask learners this question, what will happen if there were no technologies in the community?

Learners are expected to do this in a group discussion and share with the class.

### What I have learnt

Learners talk or write about what they have learnt for the day.

1. Technological devices make our lives very easy.
2. Some technological devices we see around us are the television, fan, radio, mobile telephones, cars, microphones etc.
3. A drone can be used to deliver medical aid.

### Project for home or school

Pair learners to design any technological tool that is useful and can make life easier for learners.

Have learners draw, design and create it with local materials. e.g paper, clay, cardboard.

### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 172 - 173 of the Learner's Book and pages 83 - 85 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

1. List two technological devices you like and discuss how they have impacted your life and the people in your community.

#### Answers

##### Exercise 1

1. car
2. mobile phone
3. fridge
4. radio
5. fan

##### Exercise 2

1. i, e
2. o, u, e
3. o, e
4. a
5. a

#### Workbook Answers

##### Trial 1:

1. Phone  
Car  
Radio  
Television
2. Technology makes our lives easier  
It helps in food preservation.  
It helps in communication.  
It helps us move from one place to another faster.

##### Trail 2

- 1 → d
- 2 → e
- 3 → f
- 4 → b
- 5 → a
- 6 → c

##### Trial 3

Learners' correct drawing(s)

## Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to “**TRAP**” the lesson taught.

**T: Teach: Teach** a lesson.

**R: Reflect: Reflect** on the lesson taught from the introduction to the conclusion.

**A: Analyse: Analyse** by asking yourself the following questions:

1. How did the lesson go?
2. Was the introduction catchy?
3. Were you able to catch the learners' attention throughout the lesson?
4. Were the learners able to answer your questions during and after the lesson?
5. Did the learners ask you questions during and after the lesson?

6. Were learners able to do the exercises at the end of the lesson?
7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?

## LESSON 2: Foods that can be processed and preserved at home

LB: pages 174 - 179; WB: pages 86 - 87

### CONTENT STANDARD

**B1.5.3.2** Exhibit knowledge of food processing and preservation

### INDICATOR

**B1.5.3.2.1** Identify foods that can be processed and preserved at home.

### LEARNING EXPECTATIONS

Learners are expected to:

- ♦ Identify foods that can be preserved at home.
- ♦ Identify the skills and method of preservation of food.

### NEW WORDS

Fish, pepper, groundnut, tomatoes, ginger, freezer, mill, dry, roasted, smoked.

### RESOURCES

Food items such as pepper, tomatoes, cassava, yam, fish, ginger etc.

### CORE COMPETENCIES

Critical Thinking and Problem Solving, Collaboration and Communication, Personal Development and Leadership, Cultural Identity and Global Citizenship.

### SUBJECT SPECIFIC PRACTICES

Classifying, Generalising.

### HELPFUL LINKS

- <https://www.finedininglovers.com/article/how-preserve-food-methods-and-techniques>
- [https://best.lovetoknow.com/Top\\_Methods\\_of\\_Home\\_Food\\_Preservation](https://best.lovetoknow.com/Top_Methods_of_Home_Food_Preservation)
- <https://www.family-survival-planning.com/home-food-preservation.html>

### Background Information

Food preservation is any of a number of methods by which food is kept from spoilage after harvest or slaughter. Such practices date to prehistoric times. Among the oldest methods of preservation are drying, refrigeration, and fermentation.

Modern methods include canning, pasteurization, freezing, irradiation, and the addition of chemicals. Advances in packaging materials have played an important role in modern food preservation.

It is good to preserve food so that it does not spoil. The food we eat can be processed at home and stored for some time in the fridge.

Rice is milled and stored at home for making rice porridge for breakfast. Corn is soaked and milled to make corn dough and stored in the fridge.

### Starter

Through a think-pair-share activity, ask learners to mention foods they ate in the morning and what was used to prepare it.

### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

#### Activity 1

- Put learners in groups and let them name some vegetables, fruits and the types of food that can be preserved at home. eg. pepper, cassava, tomatoes, onions, plantain, ginger, rice, maize, etc.
- Show samples of preserved foods such as roasted plantain, dried fish, smoked fish, grinded maize, etc to learners to talk about them.

#### Activity 2

- Put learners into sizeable groups. Task each group to select a food of their choice and talk about how food is prepared in their homes.
- Each group should present their findings with the whole class.

#### Activity 3

- Still in their groups, learners talk about how food is preserved in their homes. Either by drying, smoking, frying, roasting, baking or refrigeration.

- Each group should present their findings to the whole class.

#### Activity 4

- Ask learners to draw and colour someone preserving food.
- Guide them to display their drawings for a class discussion.

### Talk About

Engage learners on the following.

1. What will happen if we don't preserve food?
2. Discuss one way your parents preserve food at home with your friends.

### What I have learnt

After the lesson, engage learners and get feedback from them of what they have learnt. Refer them to page 179 of the Learner's Book to read what is outlined there.

### Project for home or school

Have learners observe the foods that their parents process at home, name three of these foods.

Let learners draw three foods in their home that can be preserved.

#### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 178 to 179 of the Learner's Book and pages 86 - 87 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

Answer the following questions..

1. List five ways food can be preserved.
2. Why do we put fish in the freezer?
3. Eating spoiled food can make us sick. Why?
6. Mention the food you like best and tell your friend how to preserve it from spoiling.

#### Answers to Review Exercise

##### Exercise 1

1. fridge
2. fish
3. drying
4. fry
5. roasted

#### Answers to Workbook questions

##### Trial 1

drying  
freezing

##### Trial 2

1. No
2. No
3. Yes
4. Yes
5. Yes
6. No
7. Yes

##### Trial 3

Learners' correct drawings

### Diagnostic Assessment

The diagnostic assessment will enable you the teacher assess yourself and know whether the lesson was successful or not.

In other words, you have to "TRAP" the lesson taught.

**T: Teach:** Teach a lesson.

**R: Reflect:** Reflect on the lesson taught from the introduction to the conclusion.

**A: Analyse:** Analyse by asking yourself the following questions:

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5. Did the learners ask you questions during and after the lesson?
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7. What three things did you do well during the lesson?
8. How are you going to build on this achievement in subsequent lessons?
9. What two challenges did you encounter during the lesson?
10. How are you going to rectify these in subsequent lessons?

**P: Plan:** If you get the chance to teach the same lesson, what **plans** (strategies) will you implement to enhance teaching so that learners will understand and enjoy it?



## Strand 5: HUMANS AND THE ENVIRONMENT

### Sub-strand 4: CLIMATE CHANGE

#### LESSON 1: Describing weather conditions

**LB:** pages 180 - 186; **WB:** pages 88 - 89

##### CONTENT STANDARD

**B1.5.4.1** Understand that climate change is an important environmental issue facing the world today.

##### INDICATOR

**B1.5.4.1.1** Describe the conditions of the weather.

##### LEARNING EXPECTATIONS

Learners are expected to:

- ◆ Describe the weather conditions.
- ◆ Draw and colour a picture showing a weather condition.

##### NEW WORDS

Cloudy, windy, rainy, sunny.

##### RESOURCES

Pictures and videos showing different weather conditions.

##### CORE COMPETENCIES

Critical Thinking and Problem Solving,  
Collaboration and Communication, Digital  
Literacy Creativity and Innovation  
Cultural Identity and Global Citizenship

##### SUBJECT SPECIFIC PRACTICES

Observing, Predicting, Analysing, Evaluating

##### HELPFUL LINKS

- <https://busyteacher.org/4091-how-to-teach-weather.html>
- <https://www.teachervision.com/all-kinds-weather>

##### Background Information

Weather is an important part of our lives on Earth. People often look outside to see what the weather is before they begin their day. Observing weather can give us clues that help us dress for the day, plan activities, or prepare for a storm.

Weather is the combination of sunlight, wind, snow or rain, and temperature in a specific region at a particular time.

##### Starter

Recite the poem below with learners.

*Rain, rain, go away  
Come again another day  
Little children want to play  
Rain, rain go away.*

##### Use of ICT

1. Get videos or pictures before the class on the different weather conditions.
2. Get pictures of wind vane and rain gauge.
3. Download a video from youtube for the lesson: <https://www.youtube.com/watch?v=-bBqBV0bcA4>

##### Teaching Instructions

Before the lesson drill the new words and ask learners to form sentences with it.

##### Activity 1

- Lead learners in a whole class discussion to talk about weather conditions. Example, Rainy, windy, sunny and cloudy weather.
- Write their responses on the board.

##### Activity 2

- Divide the class into groups.
- Let each group pick one weather condition at random. In their groups, they talk about activities people do under the weather condition they picked.
- Each group should present their write up to the whole class for discussion.

##### Activity 3

- Show pictures or videos on different weather conditions and activities people do under different weather conditions.



- Learners should then talk about what they observed in the pictures or videos in a whole class discussion.

#### Activity 4

- Guide each group to role play some activities that take place during various weather conditions.

### Talk About

In a critical thinking section, learners guess what will happen if it does not rain for a whole year. Engage them to tell their friends the weather condition they like best and why.

### What I have learnt

Learners talk or write about what they have learnt for the day.

### Project for home or school

Direct learners to page 186 of the Learner's Book for this homework.

Additionally, let learners observe the weather in the school today. Then they draw and colour on an A4 sheet how the weather they observed looked like.

Let learners display their work in class during the next lesson.

#### Assessment for learning

Supervise learners to do the assessment task. Refer them to pages 184 - 185 of the Learner's Book and pages 88 - 89 of the Workbook.

### Extension Assessment

Let gifted learner(s) work on their own. Let them read and complete the exercise without help.

- Which weather condition is suitable for farming and why?
- Why is it advisable to stay indoors when the wind is blowing?

#### Answers to Review Exercise

##### Exercise 1

- a and i.
- u and n.
- l, u and y
- i and d.

##### Exercise 2

- rainy
- winds
- cloudy
- sunny

##### Exercise 3

- |          |          |
|----------|----------|
| 1. Windy | 2. Sunny |
| 3. Sunny | 4. Rainy |

#### Answers to Workbook questions

##### Trial 1:

- Windy
- Cloudy
- Rainy
- Sunny

##### Trial 2:

Learners' correct drawings

### Diagnostic Assessment

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# ESSENTIAL Science

## Primary 1

Teacher's Guide

The **ESSENTIAL Science** series is written to meet the full requirements of the current New Standards-based curriculum by the National Council for Curriculum and Assessment (**NaCCA**) with a critical thinking approach to learning Science.

The series consists of a Learner's Book, Workbook and Teacher's Guide.

**ESSENTIAL Science Primary 1** is well crafted to ensure that the core values (core competencies) of the Standards-based curriculum are imbued in learners.

### The Teacher's Guide offers:

- Clear directives on activities and lesson plans.
- Additional recommended activities for better transfer of knowledge.
- Helpful links have been provided to help the teacher find and acquire additional knowledge to help the learners.
- Answers to all assessments.

**ESSENTIAL**, your guarantee of success!



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