

Science and Technology



Grade
1

PlusOne

Science and Technology

Teacher's Guide



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Introduction

This **PlusOne Science and Technology Grade 1 Teacher's Guide** provides basic and practical ways to teach key components required by the Science and Technology competency-based curriculum for primary schools. It closely follows the curriculum requirements and outcomes, tying to the topics and units.

This book offers valuable guidelines on how to use the PlusOne Science and Technology Grade 3 learner's book which has the following topics:

- 1 Health and hygiene practices
- 2 Food and nutrition
- 3 Crops, plants and animals
- 4 Environmental awareness and conservation
- 5 Tools, equipment and implements
- 6 Energy and fuels
- 7 Disaster risk management and resilience
- 8 Educational technology and innovations

In this Teacher's Guide for Grade 1, you can expect to find teaching skills that focus on high levels of engagement for learners through active learning styles. Many of these pedagogical approaches require the teacher to act as a facilitator who skillfully guides the learning process by employing targeted questions at appropriate times to encourage learners to think deeply on the more difficult or complex concepts and content.

Methodology and time allocation

Some of the inclusive learner-centred and multisensory methods and approaches that can be used to learn Science and Technology at junior level are suggested below. The principles of individualisation, concreteness, unification and stimulation should enhance implementation of these methods.

- a Play
- b Games
- c Sensory exploration
- d Experimentation
- e Nature-based learning
- f Storytelling
- g Projects
- h Educational tours
- i Excursions

The subject should be allocated three (3) hours per week. There should be 4 double periods of 40 minutes and 1 single lesson of 20 minutes. If possible, there should be internal arrangements for more time for activities outside the classroom such as excursions and other educational visits. This will make learners have enough time for practical lessons.

Subject-specific aims

The Infant Science and Technology syllabus aims to:

- introduce learners to the principles of Science and Technology through a heritage-based approach.
- incorporate indigenous knowledge, cultural practices, historical perspectives and national endowments into Science and Technology education.
- foster an understanding of the learning area matter and promote cultural appreciation in its diverse nature.

Pedagogical approaches

These include the approaches, methods, strategies, appropriate relevant teaching and learning resources for ensuring that every learner benefits from the teaching and learning process. The facilitator should:

- create learning-centred classrooms using creative approaches.
- position inclusion and equity at the centre of quality teaching and learning.
- use differentiation and scaffolding as teaching and learning strategies.
- use Information Communications Technology (ICT) as a pedagogical tool.
- identify subject specific instructional expectations to make the subject relevant.
- integrate all assessment strategies.
- use questioning techniques that promote deep learning.

This Teacher's Guide provides teaching methodology for each lesson and concept to ensure that the correct pedagogical approach is used. However, this may need to change based on the skills levels of your class in any year, so use your own experience and discretion to adapt these methodologies accordingly.

Teaching tips

a Scheme of work

Never go into a class unprepared even if you have taught a lesson many times before. Have your ideas, plans and materials ready. You should make sure you are confident with your material. Classes are easier to manage, and behaviour is better when a lesson is tightly organised.

You might want to develop a regular pattern such as:

- A brief period of revision. What did we do last time?
- The introduction of new material given in the form of a class lesson.
- Activities, undertaken in pairs, groups or singly.
- Whole class discussion of what everyone has done.

When learners are used to being occupied for the whole time, they tend to be more co-operative and to value the lesson more.

Here are some points to remember when developing a scheme of work:

- Know your syllabus.
- Make a preliminary plan based on the time you think you will need to cover each unit.
- Be prepared to change that plan as you learn how much time each theme really takes. Consider school events which take up time such as sport, important national events, examinations and any other special occasions.
- Leave some spare time in your planning. Very few timetables work out perfectly.

Remember all the time that facts are only part of education. Keep in your mind the skills you wish to develop, particularly those of easy communication, co-operation and the development of mutual tolerance and respect. Make sure you have all the materials ready at hand for each lesson. If classes are sharing resources, make sure the ones you want are available when you want them. Before you start on any topic, check on your aims and work out how you can find out if you have achieved them. This is called evaluation.

When preparing materials and activities, consider the different abilities of your learners. Try to organise additional activities for the quicker learners to give you time to help those who are finding the lesson difficult.

b Learning-centred pedagogy

A learning-centred classroom creates the opportunity for learners to engage in meaningful hands-on activities that relate what they are learning to the real world. It is a place for learners to discuss ideas, become actively engaged in looking for answers, working in groups to solve problems. They also research, analyse and evaluate information. The aim of the learning-centred classroom is to enable learners to take ownership of their learning.

Inclusion

Inclusion is ensuring access and learning for all learners especially those disadvantaged. Each lesson in this PlusOne Science and Technology Grade 1 Teacher's Guide contains advice on how to teach that concept to large classes, and to learners with special needs.

Differentiation and scaffolding

Differentiation is a process by which differences (learning styles, interest and readiness to learn) between learners are accommodated so that all learners in a group have the best possible chance of learning. Differentiation could be by content, tasks, questions, outcome, groupings and support.

c Marking work

When you have a large class the marking of learners' work can become a burden. If it is postponed the burden can become unbearable. Learners need to have their work marked and returned promptly with constructive criticism and as much encouragement as you can give them.

- Some marking of work can be done by learners themselves, swapping papers so that there is a check.
- You can mark work in class while you are going round supervising and encouraging the learners as they work. This has the advantage of offering instant praise and correction.

- Do not let your marking pile up from one day or one week to another.
- It is important to create an atmosphere of trust in which learners feel confident enough to ask you questions without feeling embarrassed.
- Learners should never be allowed to make fun of a learner who asks a question to which other learners already know the answer. Make it clear that such a response is not acceptable.

Use of Information and Communication Technologies

Teachers are encouraged to use ICT as a teaching and learning tool to enhance deep and independent learning. If your school has internet access, these functions can be done online. Alternatively, download the clips or games to use offline in the classroom. 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.

Diagnostic assessment

a 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.

b 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, what they know and can do over a period of time. The emphasis is to evaluate the learner's cumulative progress and achievement.

Reinforcement and revision

Sometimes you will need to revise parts of the topic with the whole class. You will certainly need to start the next lesson by asking learners what they remember of the last one. Learners need reinforcement. A few revision notes on the board to cover earlier work will be a very valuable start to every lesson.

The learner's book

Within each topic and unit of the learner's book, there are different types of text, illustrations and activities. These are designed to be used in a variety of ways to make lessons interesting, to increase learners' knowledge and motivation and to encourage them to be inquisitive, skilled, confident and mutually supportive.

Using resources effectively

In order to help learners gain the most draw on as many resources as possible. This section contains some suggestions on how best to use the resources in the learner's book and how to make use of other resources that may be available. The factual material in the learner's book is useful but it should be used alongside other information that the learners find out for themselves. It is important that learners learn techniques for finding out additional information.

Low-resource schools

Some schools do not have electronic devices. Facilitators in such situations should prepare in an entirely different way from the better-equipped schools especially in urban areas. However, there are numerous parts that do not require learners to be working on a computer. Teachers might be able to use the following ideas:

- Prepare flashcards with key words by placing a picture on one card and its definition on another card. Hand one card to each learner randomly and ask learners to find their match.
- Ask learners to explain or describe in their own words their understanding of their key word.
- Create or provide classroom posters for your display boards. Use these for reference during explanations.
- Create 'find the matching words' activities by using the key words lists.
- Create 'fill in the missing words' worksheets.
- Draw information-rich sketches on a writing board, developing a discussion or explanation as the drawing is being developed and using the learner's book as a point of reference.
- Ask learners to do the activities in the learner's book or the teacher's guide that do not require the use of a computer.
- Arrange learners in groups to work through questions in the learner's book or teacher's guide.

Using the local environment

The study of Science and Technology is about the whole of your learners' social and cultural surroundings. The resources lie around the learner's life. For example, some learners have easy access to cellphones, tablets, computers at both home and school. Let them utilise these resources as they learn in class. Take the learners out into their environment so that they can appreciate how digital the world has gone. That way, learners will enjoy the subject more.

Bring software technicians and network technicians into the school to talk about their roles in the community; make the most of local examples. These resource people and other valuable material to be used as teaching aids are called realia.

Topic 1

Health and hygiene

Unit 1: Personal hygiene

Unit objectives

By the end of this unit, learners should be able to:

- a** name body parts.
- b** identify body parts.
- c** identify personal hygiene habits.
- d** demonstrate personal hygiene.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book page 1-6.
- Science and Technology Infant Syllabus.
- Soap, toothbrush, towel, comb.
- Posters of body parts and hygiene items.
- Songs and pictures showing hygiene practices.

Teaching notes

Personal hygiene means keeping our body clean and healthy. We do this by:

- washing hands,
- brushing teeth,
- bathing every day,
- combing hair.

Why is it important?

- It stops us from getting sick.
- It keeps us smelling nice.
- It helps us feel good and look neat.

Let us start

- 1 Show learners the picture on page 7. Ask:
 - What do you see in the picture?
Model answer: A mother and children in the kitchen washing hands and setting the table.
 - How are the family members handling the food?
Answer: They are washing hands and using clean plates.
 - Can you tell if the kitchen is clean or dirty? Why?
Answer: The kitchen is clean because the surfaces and utensils look neat.

New words

- **Hygiene** – staying clean.
- **Cleanliness** – not dirty.
- **Wash** – use water to clean.
- **Brush** – a tool used to clean or tidy.
- **Hair** – what grows on your head.

Suggested answers

Exercise 1.1

- 1 Eye
- 2 Nose
- 3 Teeth
- 4 Foot
- 5 Hand

Activity 1.1: Body parts

- 1 Ask learners to point to their head, hands, feet.
- 2 Sing the song “Head, shoulders, knees and toes...” together.
- 3 Ask learners to show the body parts as they sing.

Activity 1.2: Hygiene habits

- 1 Show how to wash hands using **soap and water**.
- 2 Demonstrate brushing teeth with a **toothbrush and toothpaste**.
- 3 Let learners practice the steps in groups.
- 4 Let learners act out brushing teeth or bathing.

Exercise 1.2: Drawing and labelling

- 1 Help learners draw or point to the body parts:
 - Head
 - Eyes
 - Nose
 - Hand
 - Leg

Unit exercise

- 1 Name the body parts:
 - Hand
 - Eye
 - Ear
 - Nose
 - Mouth
 - Tongue
 - Head

- 2 Word completion:
 - (a) ear
 - (b) eye
 - (c) nose
 - (d) teeth

- 3 Hand
- 4 Leg
- 5 Hands
- 6 Brush
- 7 Everyday

Unit 2: Food hygiene

Unit objectives

By the end of the unit, learners should be able to:

- a explain safe food handling
- b identify proper and improper ways of handling food

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book page 7-14.
- Science and Technology Infant Syllabus.

- Pictures or flashcards showing clean and dirty food handling.
- Plates, utensils (real or toy), fruits and vegetables.
- Chart showing good hygiene rules.

Teaching notes

- **Food hygiene** means keeping food clean and safe. Learners must know that clean hands, clean utensils, and covered food help prevent sickness.
- **Good food handling** includes washing hands before touching food, using clean utensils, and covering food.
- **Bad food handling** includes touching food with dirty hands, using dirty plates and eating food from the ground.
- Clean food helps us stay healthy, avoid stomach aches and keeps food fresh for longer.

Let us start

- 1 Show learners the picture on page 7. Ask:
 - What do you see in the picture?
Model answer: A mother and children in the kitchen washing hands and setting the table.
 - How are the family members handling the food?
Answer: They are washing hands and using clean plates.
 - Can you tell if the kitchen is clean or dirty? Why?
Answer: The kitchen is clean because the surfaces and utensils look neat.

New words

- **Hygiene** – keeping things clean.
- **Food** – what we eat.
- **Clean** – not dirty.
- **Wash** – use water to make clean.
- **Utensils** – tools like spoons, plates or knives.

Suggested answers

Activity 2.1: Food handling practices

- 1 Show learners the picture of the boy washing hands.
- 2 Ask: “What is the boy doing?” **Model answer:** He is washing hands before eating.
- 3 Ask: “Why is it important?” **Answer:** So that food stays clean.

Exercise 2.1

- 1 touching
- 2 plates
- 3 flies

- 4 dirty hands
- 5 dirty

Activity 2.2: Safe food handling

- 1 Pair learners. Ask each to tell their neighbour why we must wash hands before touching food.
- 2 Ask them to give examples of what happens when food is handled badly (for example, flies come, stomach aches).

Model answers:

- a Washing hands helps keep germs away.
- b Dirty food can make us sick.

Exercise 2.2

- 1 healthy
- 2 sickness
- 3 stomach aches
- 4 keeps it fresh
- 5 uncovered

Activity 2.3: Safe food handling

- 1 Ask two learners to act out washing fruits before eating.
- 2 Ask another learner to act like they are using clean utensils to cook or eat.
- 3 Praise correct handling (clean knife, handwashing) **Model answer:** Learners should show clean, safe steps like washing hands and using a clean knife.

Exercise 2.3

- 1 eating food
- 2 clean knife
- 3 separately
- 4 washed

Unit exercise

- 1 Yes
- 2 do not eat
- 3 cover
- 4 germs from spreading
- 5 unclean

Unit 3: Environmental hygiene

Unit objectives

By the end of this unit, learners should be able to:

- a differentiate between clean and unclean environment.
- b describe the importance of a clean environment.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book page 15-19.
- Grade 1 Science and Technology Syllabus.
- Flashcards (clean, dirty, trash, litter).
- Picture charts showing clean and dirty places.
- Broom, dustpan, waste bin (if available).

Teaching notes

- A clean environment has no trash, litter or bad smells.
- Clean places help us stay healthy and happy.
- An unclean place has garbage, dirty water, flies and bad smells.
- We must keep our homes, schools and yards clean.

Let us start

- 1 Show learners the pictures on page 15.

Ask:

- What do you see in the two pictures?
- **Model answer:** One place is clean with grass and a bin. The other place has trash and garbage.
- Which environment looks good to you? Why?
- **Model answer:** The clean place with green grass and a bin because it looks neat.
- What makes the other environment unclean?
- **Model answer:** Litter and garbage on the ground make it dirty.

New words

- **Environment** – the place around us.
- **Clean** – not dirty.
- **Trash** – waste or rubbish.
- **Litter** – garbage lying around.
- **Healthy** – feeling well and strong.

Suggested answers

Activity 3.1: Clean and unclean environments

- a** Show learners the pictures on page 16.
- (i)** Ask: “Which picture looks clean?” Let learners respond.
 - (ii)** Ask: “What makes the other place dirty?”
 - (iii)** Give each learner the task to:
 - circle the clean place.
 - cross out the dirty place.

Model answer:

- Circle the picture with children playing and a bin.
- Cross the picture with trash and dirty ground.

- b** Keeping our environment clean

Ask learners the following questions. Let them respond in pairs or small groups, then discuss together as a class.

- (i)** Why should we keep the environment clean?

Model answers:

- To stay healthy.
- To avoid diseases.
- To make the place look nice.
- To protect animals and plants.
- To breathe clean air.

- (ii)** What can we do to clean a dirty environment?

Model answers:

- Pick up litter.
- Sweep the yard or classroom.
- Put rubbish in bins.
- Plant trees and grass.
- Clean toilets and taps regularly.

Exercise 3.1

- 1** clean environment
- 2** litter, garbage
- 3** Clean air to breathe.
- 4** lots of garbage and trash

Activity 3.2: The importance of a clean environment

- 1 Put learners into small groups.
- 2 Let them share two reasons for keeping places clean.
- 3 Ask each group to tell the class one reason.
- 4 Give learners paper to draw a clean place.
- 5 Ask them to say why they like the place.

Model answer:

- Reason 1: Clean places stop diseases.
- Reason 2: Clean places look nice.

Drawing a clean place

- 1 Give each learner a blank page or drawing book.
- 2 Ask them to **draw a clean place they like**. It can be their home, school, garden, or park.
- 3 After drawing, help them **write or say one sentence** about why it is important to keep that place clean.

Model answer: A clean classroom with a bin, swept floor, and desks in order.

Model sentence: “It is important to keep the classroom clean so we can learn in a healthy place.”

Activity 3.3: Basic cleaning tasks

- 1 Ask learners to bring brooms or pretend with their hands.
- 2 Let them practise sweeping in class or outside.
- 3 Role-play picking trash and putting it in a bin.
- 4 Ask them to organise items neatly on a shelf or table.

Model answer: Learners sweep neatly, pick up litter and tidy things.

Activity 3.4: Cleanup activity

- 1 Divide learners into small groups.
- 2 Ask them to clean corners of the classroom.
- 3 Let them arrange chairs and desks nicely.
- 4 Praise and clap hands for good teamwork.

Model answer: Classroom is clean. Desks and chairs are in straight lines.

Unit exercise answers

- 1 Clean air
- 2 True
- 3 pick
- 4 beautiful

Unit 4: Health and wellness

Unit objectives

By the end of this unit, learners should be able to:

- a identify health habits.
- b discuss the importance of physical activities, balanced meals and adequate rest.
- c demonstrate healthy habits.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book pages 20-25.
- Science and Technology Infant syllabus.
- Flashcards (food groups, hygiene tools).
- Charts or posters on healthy habits.
- Clean utensils, soap, and pictures for role-play.

Teaching notes

- Healthy habits help our bodies grow and stay strong.
- Good health habits include eating fruits and vegetables, resting, washing hands, and exercising.
- Balanced meals have different food groups: grains, vegetables, fruits, proteins, and dairy.
- Rest helps us grow and gives energy.
- Exercise makes us strong and happy.

Let us start

Show learners the pictures on page 20. Ask:

- 1 What do you see in the pictures?
Model answer: A boy flying a kite, a child sleeping, and a child eating.
- 2 What are the children doing to stay healthy?
Model answer: They are playing, resting, and eating.
- 3 Can you name some foods that help us stay strong?
Model answer: *Sadza*, vegetables, fruits, meat, rice, eggs.

New words

- **Habits** – things we do often.
- **Exercise** – moving the body to stay fit.
- **Nutrition** – getting the right food to grow strong.

- **Rest** – taking a break or sleeping.
- **Balanced** – having the right amount of different things (like food).

Suggested answers

Activity 4.1: Healthy habits

- 1 Show learners the pictures on page 20.
- 2 Ask them to name what the children are doing.
- 3 Guide them to circle children who are showing healthy habits.
- 4 Let learners share one healthy habit they do at home.

Model answers

- a Circle: boy eating, boy playing, girl drinking water.
- b Example answers: I brush my teeth. I eat vegetables. I sleep early.

Activity 4.2: The importance of healthy habits

Put learners in small groups.

- 1 Ask them to talk about why we need to:
 - Eat good food.
 - Sleep well.
 - Exercise.
- 2 Help them share answers with the class.

Model answer

- Eating good food gives us energy.
- Sleeping helps the body rest.
- Exercise makes us strong.

Activity 4.3: Healthy habits

- 1 Let the class do stretching exercises (touch toes, reach up).
- 2 Role-play washing hands and drinking water.
- 3 Ask learners: Why is this important?

Model answer

- Stretching helps us move well.
- Washing hands keeps us clean.
- Drinking water is good after playing.

Exercise 4.1

- 1 Eating fruits and vegetables daily

- 2 Exercising
- 3 Enough sleep
- 4 Strong and fit
- 5 Balanced diet

Unit exercise

- 1 Sleep and rest
- 2 Milk
- 3 Apple (or any fruit learner chooses)
- 4 Matching

Picture	Food group
Apple	Fruit
Spinach	Vegetable
Meat (last pic)	Protein

Unit 5: Disease prevention

Unit objectives

By the end of this unit, learners should be able to:

- a name some common diseases.
- b identify basic measures to prevent common diseases.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 26-30.
- Science and Technology Infant Syllabus.
- Pictures of diseases (malaria, flu, chickenpox).
- Soap, clean water, tissues, masks (for role-play).

Teaching notes

- Some diseases spread from one person to another.
- We can stop diseases by keeping ourselves clean.
- Common diseases include:
 - Malaria** – comes from mosquito bites; use mosquito nets to stop it.
 - Flu (Influenza)** – makes us sneeze and cough; cover mouth when sneezing.
 - Chickenpox** – causes red spots and itching; stay away from sick people.
 - Diarrhoea** – causes stomach pain and frequent toilet use; wash hands and eat clean food.
- Remind learners to always wash hands before eating and after using the toilet.

Let us start

Show learners the picture on page 26. Ask:

- 1 What do you see in the picture?
Model answer: Children wearing masks and washing hands.
- 2 Can you name any diseases that people can get?
Answer: Malaria, flu, chickenpox, diarrhoea.
- 3 What can we do to stay healthy and prevent diseases?
Answer: Wash hands, cover mouth, wear masks.

New words

- **Disease** – when someone is not feeling well.
- **Prevention** – stopping something from happening.
- **Germ**s – tiny things that make us sick.
- **Hands** – parts of the body we use to touch.
- **Mask** – something we wear on the face to cover mouth and nose.

Suggested answers

Exercise 5.1

- 1 mosquito
- 2 headaches
- 3 red spots
- 4 washing our hands before eating

Activity 5.1: Prevent diseases

- a Tell learners to pretend to wash their hands using soap and water.
- b Ask them to show how to use a tissue to cover a sneeze or cough.
- c Ask them to pretend to wear a mask and explain why it is important.

Model answers:

- Use soap and water to wash hands.
- Use tissue or elbow to cover coughs/sneezes.
- Masks stop germs from spreading to others.

Unit exercise

- 1 wash
- 2 mouth
- 3 Cover your mouth or nose
- 4 chickenpox

Topic revision exercise

- 1 Match the disease to prevention:
 - (a) Flu → (iii) Wash hands regularly
 - (b) Malaria → (i) Use mosquito nets
 - (c) Chickenpox → (ii) Get vaccinated
- 2 wash
- 3 malaria
- 4 clean
- 5 Match the body parts
 - (a) Eyes → (iii) See things
 - (b) Hands → (i) Hold objects
 - (c) Nose → (ii) Smell flowers
- 6 brush
- 7 **Sample answers:** brushing teeth, bathing, washing hands
- 8 a healthy

Topic 2

Food and nutrition

Unit 6: Food groups

Unit objectives

By the end of this unit, learners should be able to:

- a name food groups.
- b classify foods into food groups.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book pages 31-36.
- Science and Technology Infant Syllabus.
- Pictures of food groups (real or drawn).
- Plastic food models.
- Sorting trays or containers.
- Flashcards with food names and pictures.

Teaching notes

- Food groups are types of foods that help us grow and stay healthy.
- The two main groups introduced here are:
 - Protective foods** – help our bodies fight sickness (for example, bananas, spinach, oranges).
 - Body-building foods** – help us grow and build muscles (for example, eggs, milk, fish, beans).
- Protective foods are fruits and vegetables.
- Body-building foods include animal products and legumes.
- Learners should be able to group foods and explain why we eat different types.

Let us start

Show learners the picture on page 31. Ask:

- 1 What do you see on the table in the picture?
Model answer: Bananas, a bowl, and some dishes.

2 Can you name some of the foods you see?

Model answer: Bananas and other fruits.

3 Why do you think these foods are important for our bodies?

Model answer: They help us stay healthy and grow strong.

New words

- **Food groups** – types of food put into groups based on what they do in the body.
- **Protective food** – food that helps the body fight sickness such as, fruits and vegetables.
- **Body building food** – food that helps the body grow and build muscles such as, meat, eggs.
- **Protein** – a nutrient that builds and repairs body parts.
- **Vitamins** – nutrients that protect the body from diseases and keep it healthy.

Suggested answers

Exercise 6.1

- 1 Protective food
- 2 Oranges and cabbage
- 3 Body-building food
- 4 Eggs and beans
- 5 Bodies

Activity 6.1: Food groups

- a Point to the pictures in the activity.
- b Ask learners to name the foods shown.
- c Guide them to say which ones are protective foods and which are body-building.
- d Let them repeat the rhyme as a class.

Model answers

- Protective foods: Fruits and vegetables.
- Body-building foods: Eggs, milk, fish.
- Rhyme“Fruits and veggies keep us strong,Eggs and milk help us grow along!”

Exercise 6.2

Matching (Draw lines):

- Fish → Body-building food
- Eggs → Body-building food
- Fruits and vegetables → Protective food
- Beans → Body-building food
- Milk → Body-building food

Activity 6.2: Food groups

- 1 Divide learners into pairs.
- 2 Give each pair pictures or plastic models of different foods.
- 3 Give them two trays or containers labelled “Protective” and “Body-building”.
- 4 Ask them to sort the items.
- 5 Walk around and help where needed.
- 6 Invite learners to name one item from each group aloud.

Model answers:

- a Protective: Apples, spinach, carrots, bananas
- b Body-building: Eggs, beans, fish, milk

Unit exercise

- 1 Protective
- 2 Eggs
- 3 (a) Milk → (ii) Body-building food
(b) Carrot → (iii) Protective food
(c) Fish → (i) Body-building food

Unit 7: Sources of food

Unit objectives

By the end of this unit, learners should be able to:

- a name sources of food.
- b identify different sources of food.
- c discuss local food sources.
- d explain the importance of food.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book page 37-41.
- Science and Technology Infant Syllabus.
- Flashcards showing food and sources (fish, cows, gardens).
- Picture charts of food from different sources.
- Crayons or pencils for drawing.

Teaching notes

- **Sources of food** are places where we get food to eat.
- We get food from:
 - Plants:** fruits, vegetables, grains, legumes.
 - Animals:** meat, milk, eggs.
 - Water bodies:** fish from rivers, lakes, or oceans.
- Local sources of food include **gardens, farms, markets** and **rivers**.
- Food helps us grow strong, healthy and active.

New words

- **Sources** – places we get something from.
- **Vegetables** – plants we eat like spinach and tomatoes.
- **River** – a place with flowing water.
- **Farm** – land where animals or crops are kept.
- **Garden** – a small place where plants or vegetables grow.

Let us start

Show learners the pictures on page 37. Ask:

- 1 What do you see in the pictures?
Model answer: People picking fruits, growing crops, milking cows, and catching fish.
- 2 Where do fruits and vegetables come from?
Model answer: From gardens and farms.
- 3 Can you name other places where we get food?
Model answer: Rivers, markets, and shops.

Suggested answers

Exercise 7.1: Sources of food

- 1 rivers, lakes, oceans
- 2 plants, animal
- 3 Sources of food
- 4 plants

Activity 7.1: Food sources

- 1 Put learners in small groups.
- 2 Ask them to talk about where they get food at home or in their community.
- 3 Help them name places like garden, market or river.

Model answers:

- Garden
- Market
- Farm
- River

Drawing local sources:

- 1 Ask learners to draw a place where they get food.
- 2 Give examples like a farm, garden, market or river.
- 3 Allow them to colour their drawings.

Model answer:

A drawing of a market with fruits and vegetables.

Activity 7.2: Matching foods to their sources

- a** Using flashcards:
- Show flashcards with food items (milk, fish, eggs).
 - Show matching source pictures (cow, river, chicken).
 - Ask learners to match each food to its source.

Model answers:

- Milk → Cow
- Fish → River
- Eggs → Hen

- b** Creating a chart:
- Help learners collect pictures from magazines or draw their own.
 - Group pictures into plants, animals and water sources.
 - Paste them on a chart.

Model answer:

A chart with the following pictures:

- Fish under river.
- Eggs under hen.
- Vegetables under garden.

Unit exercise

- | | |
|-----------|---------------|
| 1 Fruits | 4 (a) → (iii) |
| 2 animals | (b) → (i) |
| 3 rivers | (c) → (ii) |

Unit 8: Food preparation

Unit objectives

By the end of this unit, learners should be able to:

- a name indigenous and foreign foods.
- b demonstrate the process of cooking nutritious recipes.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 42-51.
- Science and Technology Infant Syllabus.
- Real or toy food items (spaghetti, vegetables, *sadza*, *mufushwa*).
- Cooking utensils (pot, spoon, play chef set).
- Pictures of indigenous and foreign foods.

Teaching notes

- Indigenous foods are traditional and eaten for many years (for example, *sadza*, *mufushwa*).
- Foreign foods came from other countries (for example, spaghetti, pizza).
- Food preparation means getting food ready to eat by cooking or mixing ingredients.
- A recipe shows ingredients and steps to cook a dish.
- Healthy food uses vegetables, grains, and proteins.
- We must wash ingredients before cooking.

Let us start

Show learners the picture on page 42. Ask:

- 1 What do you see on the table?
Model answer: Plates, bowls, pots, vegetables, children, and a parent cooking.
- 2 Can you name some of the foods being displayed?
Model answer: Tomatoes, onions, green vegetables, flour or mealie-meal.
- 3 Have you seen any of these foods cooked at home?
Model answer: Yes. We cook *sadza*, soup, or *mufushwa* at home.

New words

- **Indigenous** – foods from our culture, eaten for a long time.
- **Foreign** – foods that came from other countries.
- **Recipe** – a guide that shows how to cook something.
- **Nutritious** – healthy and good for the body.
- **Ingredients** – things used to make food.

Activity 8.1

Indigenous and foreign foods

- 1 Show learners the pictures of foods.
- 2 Ask them to name each food item (for example, burger, pizza, *sadza*, *mufushwa*).
- 3 Ask them to say which are indigenous and which are foreign.

Model answers:

- Indigenous foods: *sadza*, *mufushwa*
- Foreign foods: pizza, burger, fries

Exercise 8.1

- 1 Indigenous foods
- 2 Foreign foods
- 3 *Mufushwa*

Activity 8.2

Preparing local indigenous dishes

- 1 Guide learners to name a local dish they like (*sadza rezviyo* / *amabele*, / finger millet meal, *mufushwa* stew).
- 2 Help them find the ingredients (real or in pictures).
- 3 Let them pretend to prepare the dish using safe tools or role-play sets.

Model answer:

- *Sadza*: finger millet meal, water
- *Mufushwa* stew: dried vegetables, tomatoes, onions, peanut butter

Indigenous recipes

Sadza rezviyo

- a Ingredients: finger millet meal, water
- b Steps:
 - Boil water.
 - Add meal, stir to avoid lumps.
 - Let it cook until thick.

Mufushwa stew

- a Ingredients: dried vegetables, onions, tomatoes, peanut butter
- b Steps:
 - Soak vegetables.
 - Cook with onions and tomatoes.
 - Add peanut butter.

Activity 8.3

Recipes

- 1 Show learners the two sets of pictures.
- 2 Ask them to explain each step aloud (Spaghetti and *Sadza*).
- 3 Let them describe how they cook one food in their own words.

Model answer:

- Cooking spaghetti: Boil water, add spaghetti, cook, drain.
- Cooking *sadza*: Boil water, add meal, stir, cook until thick.

Exercise 8.2

- 1 Finger millet meal and water
- 2 Dried vegetables, onions, tomatoes, peanut butter
- 3 Wash

Activity 8.4

Cooking (Role play)

- 1 Divide learners into small groups.
- 2 Give them a pretend chef set or safe tools.
- 3 Let them act out cooking *sadza* or *mufushwa*.
- 4 Encourage group discussion on who does what in the kitchen.

Model answer:

One child pretends to boil water, another adds vegetables, others stir or serve.

Unit exercise

- 1 *Sadza*, *Mufushwa* and many others.
- 2 Spaghetti, Pizza and many others.
- 3 (a) → (iii)
(b) → (i)
(c) → (ii)

Topic revision exercise

- 1 Wash
- 2 Fruits
- 3 (a) → (iii)
(b) → (i)
(c) → (ii)

- 4 Any 3 of: *sadza*, spaghetti, *mufushwa*, soup, rice
- 5 (a) → (iii)
(b) → (i)
(c) → (ii)
- 6 Facilitator to help learners draw a pot of *sadza* and vegetables.
- 7 Possible answers: Garden, shop, field
- 8 Carrot
- 9 Vegetables, grains, proteins

Topic

3

Crop, plants and animals

Unit 9: Crop plants

Unit objectives

By the end of this unit, learners should be able to:

- a** name different types of crop plants.
- b** identify parts of a plant.
- c** classify crop plants.
- d** describe the growth cycle of a plant.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 52-58.
- Science and Technology Infant Syllabus.
- Flashcards of different crops and plant parts.
- Real plant samples (if possible).
- Garden tools or containers with soil for planting.

Teaching notes

- Crop plants are plants we grow for food or other uses.
- Types of crop plants: grains (maize, rice), vegetables (spinach, tomatoes), fruits (bananas, mangoes).
- A plant has parts: roots, stem, leaves, flowers, and fruit.
- Each part of the plant has a job:
 - Roots hold the plant in the soil and take in water.
 - Stems carry water and food.
 - Leaves help make food.
 - Flowers help the plant grow seeds or fruit.
- Plants grow in stages: seed → sprout → full plant → flowers → fruit.

Let us start

Show learners the picture on page 52. Ask:

- 1 What do you see in the garden?
Model answer: Trees, plants, a teacher, learners.
- 2 Can you name some of the plants you see?
Model answer: Tomatoes, spinach, banana trees.
- 3 Why do you think crop plants are important to us?
Model answer: They give us food.

New words

- **Grains** – small hard seeds we eat, like maize or rice.
- **Vegetables** – plant parts we eat like spinach or carrots.
- **Fruits** – sweet parts of plants like bananas or mangoes.
- **Roots** – the part of the plant that is under the ground.
- **Stem** – the part that holds the plant up and carries water.

Activity 9.1

Types of crop plants

- 1 Show learners the pictures of different crops on page 53 learners book.
- 2 Ask them to name the type of each (tomato = vegetable, mango = fruit).
- 3 Use flashcards to help learners match the crop to the correct group.

Model answers:

- Tomato – Vegetable
- Mango – Fruit
- Banana – Fruit

Exercise 9.1

- 1 Crop plants
- 2 Rice and wheat
- 3 Vegetables
- 4 Fruits
- 5 Roots

Activity 9.2

Parts of a plant

- 1 Show learners the plant diagram in the Learner's Book page 55.
- 2 Ask them to point and name the following parts:

- Roots → “These are under the soil. They hold the plant and take in water.”
- Stem → “This part holds up the plant. It carries water to the leaves.”
- Leaves → “These are green and flat. They help the plant make food.”
- Flowers → “These are colourful. They help the plant make seeds.”

3 Let learners point and say each part aloud together.

4 Now sing the rhyme below together:

Plant rhyme

Roots in the ground,

Stems stand tall.

Leaves make food.

Flowers grow small!

Activity 9.3: Planting a seed

1 Give each learner a small pot, soil, a seed, and a small garden tool.

2 Show them how to:

- Fill the pot with soil
- Make a small hole
- Plant the seed
- Cover with soil and water

3 Ask:

- “What plant will this seed become?”
(maize, bean, sunflower)
- “What does it need to grow?”
(Answer: water, soil, sunlight)

4 Say: “Let’s take care of it and watch it grow!”

Activity 9.4: Growth stages of a crop plant

1 Show learners the pictures on page 57.

2 Ask:

- “What do you see in each picture?”
(Expected: seed, sprout, young plant, flowering plant, plant with fruit)

3 Guide learners to put them in order:

- Seed
- Sprout
- Young plant
- Plant with flowers
- Plant with fruit

4 Say: “This is the life cycle of a plant.”

Follow-up activity (Part b):

Let learners draw and label the stages in their books:

Seed, sprout, plant, flowers, fruit

Unit exercise

- 1 Maize
- 2 Vegetable
- 3 Any one of: tomato, mango, banana
- 4 Match the parts of a plant.
 - (a) Roots → (iii) Take in water.
 - (b) Stem → (i) Holds plant up.
 - (c) Leaves → (ii) Make food for the plant.

Unit 10: Vegetable gardening

Unit objectives

By the end of this unit, learners should be able to:

- a name types of vegetables.
- b identify garden vegetables.
- c discuss garden vegetables.
- d demonstrate planting caring and harvesting of garden vegetables.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 59-64.
- Science and Technology Infant Syllabus.
- Garden tools (toy or real) like hoes, watering cans, and baskets.
- Flashcards or real vegetables (spinach, tomatoes, carrots, onions).
- Pictures of gardens, seeds, plant care, and harvesting.

Teaching notes

- A garden is a place where vegetables are grown.
- Garden vegetables are parts of plants that we eat.
- Types of vegetables:
 - Leafy: spinach, kale
 - Root: carrots, onions
 - Fruit: tomatoes, green peppers

- Vegetable planting involves loosening soil and planting seeds.
- Caring for vegetables includes watering, weeding, and protecting from pests.
- Harvesting means picking vegetables when ready using tools like scissors.

Let us start

Show learners the picture on page 59. Ask:

- 1 What vegetables do you see growing in the garden?

Model answer: Spinach, tomatoes, carrots.

- 2 Can you name some vegetables you eat at home?

Model answer: Cabbage, onions, tomatoes, carrots.

- 3 Why do we grow vegetables in the garden?

Model answer: To get food to eat.

New words

- **Garden** – a place where plants are grown.
- **Vegetables** – plant parts that we eat.
- **Planting** – putting seeds in the soil to grow.
- **Caring** – looking after plants by watering and removing weeds.
- **Harvesting** – collecting vegetables when they are ready.

Activity 10.1 Garden vegetables

- 1 Show learners pictures of vegetables (spinach, carrots, tomatoes, onions).
- 2 Ask them to name each vegetable.
- 3 Help them match each to its type (leafy, root, or fruit) using flashcards).

Model answers:

- Spinach – Leafy
- Carrots – Root
- Tomatoes – Fruit
- Onions – Root

Exercise 10.1

- 1 Garden vegetables
- 2 Spinach
- 3 Tomatoes
- 4 Carrots

Activity 10.2

Vegetable planting

- 1 Give learners garden tools or pretend tools.
- 2 Show how to loosen the soil.
- 3 Let learners pretend to plant seeds in pots or garden bed.
- 4 Ask them to water the soil gently.

Model answer:

Learners plant seeds in soil and water them with care.

Activity 10.3

Vegetable care

- 1 Practise watering using toy watering cans.
- 2 Act out removing weeds from a pretend garden.
- 3 Let learners pretend to keep animals or pests away (placing scarecrows).

Model answer:

Learners pretend to water, weed, and protect vegetables.

Activity 10.4

Harvesting of garden vegetables

Explain:

- 1 Harvesting is collecting vegetables when they are ready to eat.
- 2 Use tools like scissors or small knives carefully.
- 3 Handle vegetables gently to avoid damage.
 - Give learners toy tools and baskets.
 - Ask them to harvest vegetables like spinach and carrots.
 - Let them place vegetables in a basket or box.

Model answer:

Learners pick pretend vegetables and place them in a basket gently.

Unit exercise

- 1 Spinach
- 2 Onion
- 3 Tomato

- 4 Match the vegetable.
- (a) Spinach → (iii) Leafy vegetable
 - (b) Carrots → (i) Root vegetable
 - (c) Tomatoes → (ii) Fruit vegetable

Unit 11: Animals

Unit objectives

By the end of this unit, learners should be able to:

- a name different animals
- b classify animals into domestic and wild.
- c identify animal habitats

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 65-72.
- Science and Technology Infant Syllabus.
- Animal toys or flashcards.
- Charts of domestic and wild animals.
- Pictures or flashcards of habitats (kraal, nest, forest).
- Modeling clay or dough.
- Blocks and natural materials for building farm/jungle scenes.

Teaching notes

- Animals are living things that move, eat, and grow.
- **Domestic animals** live with people and help with work or provide food (for example, cow, dog, goat).
- **Wild animals** live in forests or water. They find their own food (for example, lion, giraffe, elephant).
- A **habitat** is a place where an animal lives.
- Examples of habitats:
 - Cow – kraal
 - Chicken – fowl run
 - Fish – river
 - Bird – nest
 - Elephant – forest

Let us start

Show learners the two pictures. Ask:

- 1 What animals do you see in the pictures?
Model answer: Cows, elephants, giraffes, birds.
- 2 Can you name any animals that live near your home?
Model answer: Dog, cat, chicken, cow.
- 3 Which animals live in the forest?
Model answer: Lion, zebra, giraffe, elephant.

New words

- **Habitat** – the place where an animal lives.
- **Domestic** – an animal that lives with people.
- **Wild** – an animal that lives in the forest or bush.
- **Farm** – a place where people grow crops and raise animals.
- **Jungle** – a thick forest where wild animals live.

Activity 11.1

Different animals

- 1 Show the pictures of animals.
- 2 Ask learners to name each animal.
- 3 Help them sort into two groups: domestic and wild.
- 4 Use flashcards for matching names to pictures.

Model answers:

- Zebra, lion, giraffe, elephant – Wild animals
- Goat, cow, dog – Domestic animals

Activity 11.2: Animal habitats

Explain:

- A habitat is where an animal lives.
- Match animals with their correct habitats using the chart.
 - Cow → kraal
 - Chicken → fowl run
 - Hare → hole
 - Birds → nest
- Show the chart with animals and their habitats.

- Ask learners to point to and name the habitat.
- Use flashcards for matching games.

Model answer:

- Cow – kraal
- Lion – forest
- Fish – river or dam

Activity 11.3

Domestic and wild animals

- 1 Ask learners to name 2 domestic and 2 wild animals.
- 2 Provide toy animals.
- 3 Guide them to place toys in farm or forest scenes using blocks.

Model answer:

- Domestic: cow, dog
- Wild: elephant, lion

Exercise 11.1

- 1 Habitat
- 2 Animals
- 3 Cow
- 4 An elephant
- 5 Nest

Activity 11.4

Animals to their habitats

- 1 Use pictures or flashcards of animals and habitats.
- 2 Let learners match animals to their correct habitats.
- 3 Build a farm or jungle scene with blocks and toys.

Model answer:

- Fish → river
- Cow → kraal
- Elephant → forest

Activity 11.5

Modeling animals

- 1 Give learners modeling clay/dough.
- 2 Let them shape any animal of their choice.
- 3 Ask each learner to describe where the animal lives.
- 4 Help them say if it is a wild or domestic animal.

Model answer:

A child makes a cow and says: “This is a domestic animal. It lives in a kraal.”

Unit exercise

- 1 Donkey
- 2 Lion, zebra / lion, elephant / giraffe, crocodile
- 3 Water
- 4 Match the animal.
 - (a) Cow → Kraal
 - (b) Elephant → Forest
 - (c) Fish → River or dam
- 5 Learners should draw a domestic animal (cow, dog).

Unit 12: Food chain

Unit objectives

By the end of this unit, learners should be able to:

- a name components of a food chain.
- b identify components of a food chain.
- c create simple food chains.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book pages 73-80.
- Grade 3-7 Science and Technology Syllabus.
- Flashcards (plants and animals).
- Picture charts of food chains.
- Drawing paper and crayons.

Teaching notes

- A food chain shows how living things get energy by eating plants or other animals.
- Producers are plants. They make their own food using sunlight.
- Herbivores are animals that eat plants such as goat, rabbit and cow.
- Carnivores are animals that eat other animals such as lion, hyena and eagle.
- A simple food chain follows this order:
 - Producer (plant like grass)
 - Herbivore (goat)
 - Carnivore (lion)
- Each living thing in the chain depends on the one before it for energy.
- Teach learners to use arrows to show energy flow from one part to the next.

Let us start

Teacher shows the picture and asks:

- 1 What do you see in the picture?
Model answer: Learners may say: teacher, pupils, goat, lion and blackboard.
- 2 Can you name the animals and plants in the picture?
Model answer: Goat, lion, grass.
- 3 What do animals eat to stay alive?
Model answer: Grass or other animals.

New words

- **Food chain** – the way animals and plants eat each other in order.
- **Grass** – a green plant that animals eat.
- **Energy** – power we get from food.
- **Herbivore** – an animal that eats only plants.
- **Carnivore** – an animal that eats other animals.

Suggested answers

Activity 12.1

a Naming components of a food chain

Step-by-step guide:

- Show the chart (grass → goat → lion).
- Ask learners to name each part.
- Define roles:
 - Grass = producer
 - Goat = herbivore
 - Lion = carnivore
- Let learners copy this in their books.

b Matching animals to their roles

Model Answers:

- Grass → Producer
- Goat → Herbivore
- Lion → Carnivore

Exercise 12.1

- 1** food chain
- 2** Producers
- 3** Herbivores
- 4** Carnivores
- 5** an eagle

Activity 12.2

a Use pictures to arrange a food chain

Step-by-step guide:

- Provide cut-out pictures of grass, goat, lion.
- Ask learners to arrange in correct order.
- Help them paste or draw arrows: grass → goat → lion.

b Construct a food chain puzzle in pairs

- Give each pair jumbled parts of a food chain.
- Instruct them to fix them in the correct order.
- Let them present to class and explain.

Activity 12.3

a Draw your own food chain

- Ask learners to draw: plant → herbivore → carnivore.
- Example: grass → rabbit → eagle
- Use coloured pencils or crayons.

b Label each part

Model labels:

- Grass = Producer
- Rabbit = Herbivore
- Eagle = Carnivore

Unit exercise

- 1 Match Column A to Column B:
 - (a) Grass → (iii) Producer
 - (b) Goat → (i) Herbivore
 - (c) Lion → (ii) Carnivore
- 2 List three components of a food chain:
 - Producer, Herbivore, Carnivore
- 3 Draw and label a food chain with at least 3 parts.
 - Example: Grass → Goat → Hyena
- 4 Producer
- 5 Goat
- 6 Hyena

Topic revision exercise

- 1 Match Column A to Column B:
 - (a) Plants → (ii) Make their own food using sunlight.
 - (b) Herbivores → (iii) Eat plants for energy.
 - (c) Carnivores → (i) Eat other animals for energy.
- 2 Plants
- 3 Match Column A to Column B:
 - (a) Spinach → (ii) Leafy vegetable
 - (b) Carrots → (iii) Grows under the soil.
 - (c) Tomatoes → (i) Fruit vegetable
- 4 water
- 5 people, animals
- 6 Domestic
- 7 Match Column A to Column B:
 - (a) Grains → (ii) Maize, rice, wheat
 - (b) Vegetables → (iii) Tomatoes, spinach, carrots
 - (c) Fruits → (i) Mangoes, oranges, bananas
- 8 Label the roots, stem, and leaves.
 - Teacher helps learners identify parts of the plant shown.
- 9 sunlight
- 10 lion

Topic 4

Environmental awareness and conservation

Unit 13: Climate and weather

Unit objectives

By the end of the unit, learners should be able to:

- a name different weather conditions.
- b identify different weather conditions.
- c describe different weather conditions.
- d explain the influence of different weather conditions on dressing.
- e state seasons of the year.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book page 81-88.
- Science and Technology Infant Syllabus.
- Weather wheel/chart.
- Flashcards (sunny, rainy, cloudy, windy).
- Clothes for different weather (jacket, raincoat, hat).
- Pictures or drawings of weather types and seasons.
- Blackboard or chart paper.

Teaching notes

- **Weather** is how the sky and air feel at a certain time. It can be sunny, rainy, cloudy, or windy.
- **Climate** is the usual weather in a place over a long time.
- In **summer**, it is hot and sunny. In **winter**, it is cold and sometimes rainy.
- Different weather needs different clothes.
 - Sunny: light clothes, hats
 - Rainy: raincoats, umbrellas
 - Cloudy: mild clothes
 - Windy: jackets

Let us start

Show learners the pictures. Ask:

- 1 What types of weather do you see in the pictures?

Model answer: Sunny, rainy, cloudy, windy

- 2 How do you feel when it is sunny or rainy?

Model answer: Sunny: happy and warm; Rainy: cold and wet

- 3 What do you wear when it is raining or sunny?

Model answer: Rainy: raincoat, umbrella; Sunny: hat, sunglasses

New words

- **Weather** – How the sky and air feel
- **Sunny** – When the sun shines brightly
- **Rainy** – When water falls from the sky
- **Cloudy** – When clouds cover the sky
- **Windy** – When the air blows fast

Suggested answers

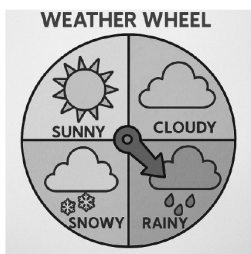
Activity 13.1: Weather conditions

- a Look at the pictures and name the weather.

- Top-left: Cloudy
- Top-right: Windy
- Bottom-left: Rainy
- Bottom-right: Sunny

- b Use a weather wheel to match weather conditions.

- Guide learners to match names to symbols (sun, cloud, rain, wind)



Exercise 13.1

- 1 Sunny
- 2 Rainy
- 3 Cloudy
- 4 Winter

Activity 13.2: Weather and clothing

- a** Point to the chart and identify clothes.
- Rainy: Umbrella, raincoat
 - Sunny: Hat, sunglasses
 - Windy: Jacket
 - Cloudy: Light clothes
- b** Role-play dressing for different weather.
- Guide learners to wear or hold props and say: “I wear a jacket when it’s windy,”.

Activity 13.3: Seasons

- a** Sing the seasons song.
- “In the summer, it’s hot and bright...”
- b** Use weather wheel to show seasons.
- Show sun for summer, clouds/rain for winter

Activity 13.4: Weather

- a** Go outside and observe the weather.
- Ask: What do you see? Is it sunny, cloudy?
- b** Record today’s weather.
- Guide learners to mark sunny/rainy/etc. on the weather chart

Unit exercise

- 1 an umbrella
- 2 Hats
- 3 cloudy
- 4 Match the weather to clothing:
 - (a) Rainy → (iii) Raincoat
 - (b) Sunny → (i) Hat
 - (c) Windy → (ii) Jacket

Unit 14: Soil

Unit objectives

By the end of this unit, learners should be able to:

- a state types of soil.
- b identify the components of soil.
- c describe soil characteristics.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book pages 89–94.
- Science and Technology Infant Syllabus
- Samples of sand, clay and loam.
- Clear jars

Teaching notes

- Soil is the top layer of the ground where plants grow.
- There are three types of soil: **sand**, **clay**, and **loam**:
 - Sand: light in colour, rough, does not hold water well.
 - Clay: dark, sticky, holds a lot of water.
 - Loam: brown, smooth, good for planting.
- Soil has components: mineral matter, organic matter, water, living organisms, and air.
- Soil is described by its **colour**, **texture**, and **ability to hold water**.
- **Loam** is the best soil for growing plants because it has a balance of all components.

Let us start

Show learners the picture on page 89. Ask:

- 1 What do you see in the jars?
 - **Learners should say:** different types of soil – sand, clay, loam.
- 2 Have you touched soil before? How did it feel?
 - **Sample answers:** soft, rough, sticky, smooth.
- 3 Why do we need soil?
 - **Answer:** To grow plants and food.

New words

- **Soil** – the top layer of the ground where plants grow.
- **Sand** – a light, rough soil that drains water quickly.
- **Clay** – a dark, sticky soil that holds a lot of water.

- **Loam** – a soft, brown soil good for planting.
- **Organic matter** – dead leaves and plant parts that help soil.

Suggested answers

Activity 14.1: Types of soil

- a** Look at the soil samples. Name each:
(From left to right): Clay, Sand, Loam
- b** Touch and describe how each soil feels:
Clay: sticky, Sand: rough, Loam: smooth

Activity 14.2: Components of soil

- a** Use a clear jar with water and soil
- b** Draw the layers (Model answer):
- Top: Organic matter
 - Middle: Clay and silt
 - Bottom: Sand and stones

Activity 14.3: Experimenting on water penetration

- a** Pour water into jars with sand, clay, and loam
- b** Observe water retention
- Clay holds most water.
 - Sand drains fastest.
 - Loam holds and drains moderately.
- c** Record results (Model chart example):

Soil type	Water held	Drained fast?
Sand	Low	Yes
Clay	High	No
Loam	Medium	Moderate

Exercise 14.1

- 1 Soil
- 2 Sand
- 3 Clay
- 4 Loam

Activity 14.4: Planting seeds

- (a)** Work in groups to plant in sand, clay and loam.
- (b)** Observe which soil helps the seeds grow best.
- Model answer:** Loam soil helped seeds grow best.

Unit exercise

- 1 Sand
- 2 Clay
- 3 Loam
- 4 Match Column A to B
 - (a) Sand → (iii) Does not hold water well.
 - (b) Clay → (i) Feels sticky and holds a lot of water.
 - (c) Loam → (i) Feels smooth and is good for planting.
- 5 Draw and label layers of soil.

Model answer should include: organic matter, topsoil, subsoil, sand and stones, bedrock.

Unit 15: Water

Unit objectives

By the end of this unit, learners should be able to:

- a name sources of water.
- b identify various sources of water.
- c discuss uses of water.
- d discuss water conservation.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book pages 95-100.
- Science and Technology Infant Syllabus.
- Flashcards (with pictures of water sources and uses).
- Poster paper and crayons.
- Chart on water conservation.
- Picture story on water use.

Teaching notes

What is water?

Water is something we drink, use to wash, cook and water plants.

Sources of water:

Places where we get water:

- **Dam** – a big place that stores water from a river.
- **Well** – a hole dug to reach underground water.
- **Borehole** – a deep hole to get clean water.
- **River** – water flows in a stream.

Uses of water:

- **Drinking** – keeps our bodies healthy.
- **Cooking** – for preparing food.
- **Washing** – clothes, dishes, and our bodies.
- **Irrigation** – watering plants.
- **Recreation** – swimming and playing.

Water conservation:

Saving water and not wasting it.

Ways to conserve water:

- Turn off taps when not in use.
- Use a bucket instead of a hose.
- Collect rainwater.
- Do not brush teeth with running water.

Importance of water conservation:

- To avoid water shortages.
- To protect plants and animals.
- To save money on water bills.

Let us start

Show learners the picture on page 95. Ask:

- 1 What do you see in the pictures?
People collecting water, a dam, a well, a house with a tap, a borehole, and a river.
- 2 Can you name some sources of water you know?
Dam, well, tap, borehole, river
- 3 Why do we need water?
For drinking, washing, cooking, and watering plants.

New words

- **Dam** – a big place that stores water.
- **Well** – a hole dug to get water.
- **Tap** – pipe where water comes out.
- **Borehole** – deep hole drilled for clean water.
- **Conservation** – saving and not wasting water.

Suggested answers

Activity 15.1: Sources of water

- a** Show the pictures and ask learners to name the water sources.
Dam, well
- b** Use flashcards
Teacher matches each name to the correct picture.

Exercise 15.1

- 1 Sources of water
- 2 Dam
- 3 Well
- 4 Drinking

Activity 15.2: Uses of water

- a** In pairs, list how you use water at home.
Model: Drinking, cooking, washing, watering plants
- b** Draw a picture of one use.
Model: Drawing of a child drinking water.

Activity 15.3 : Water conservation

- a** Group talk about saving water
Model: Turning off taps, using buckets, collecting rain
- b** Poster: Draw and colour a water-saving poster.
Model text: “Save Water!” with tap closed.

Exercise 15.2

- 1 avoid water shortages
- 2 survive
- 3 closing taps when not in use.
- 4 collecting rainwater.

Activity 15.4 : A water source

- a** Visit nearby well, river, or borehole.
- b** Discuss how people use the water.
Model: Drinking, washing, watering plants
- c** Record observations in notebook.
Model: Teacher helps with writing or drawing.

Unit exercise

- 1** A **well** is a source of water.
- 2** A **tap** is connected to a house.
- 3** **Boreholes** get water from underground.
- 4** Match Column A and B:
 - (a)** Dam → **(ii)** A large water reservoir along a river.
 - (b)** Well → **(iii)** A hole for water dug to reach underground water.
 - (c)** River → **(i)** A natural stream of flowing water.
- 5** Do not brush.

Unit 16: Minerals

Unit objectives

By the end of this unit, learners should be able to:

- a** name common mineral.
- b** recognise sources of minerals.
- c** discuss the importance of minerals.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book page 101-107.
- Science and Technology Infant Syllabus.
- Flashcards with pictures of coal, gold and diamond.
- Toy mining tools.
- Painted rock samples.
- Drawing materials (crayons, pencils, paper).

Teaching notes

- Minerals are **natural substances** found in **rocks and soil**.
- **Examples** include: **coal** (black rock for heat/electricity), **gold** (shiny yellow mineral used for jewellery), and **diamond** (clear shiny stone used in expensive ornaments).
- **Sources of minerals**: rocks and the soil.
- **Uses of minerals**:
 - **Fuel**: Coal is used to produce electricity and heat.
 - **Jewellery**: Gold and diamonds are used to make ornaments.
 - **Electronics**: Minerals are used in computers and phones.
 - **Metals**: Used to make cars, bicycles, musical instruments.

Let us start

Show learners the picture on page 101. Ask:

- 1 What do you see in the picture?
Model: Trucks, diggers, people mining, soil, rocks
- 2 Have you seen shiny stones or black rocks before?
Model: Yes (Expected answers: gold, coal, diamond)
- 3 What do you think people use minerals for?
Model: To make electricity, jewellery cars, pots

New words

- **Minerals** – natural materials found in the ground.
- **Coal** – a black rock used for fuel.
- **Gold** – a shiny, yellow metal used for money and jewelry.
- **Diamond** – a hard, shiny stone used in jewelry.
- **Rocks** – hard pieces of the earth.

Suggested answers

Exercise 16.1

- 1 Minerals
- 2 Coal
- 3 gold

Activity 16.1: Common minerals

- 1 Show learners the pictures of coal, gold, and diamonds.
- 2 Point to each mineral and ask learners to name it.
- 3 Let them repeat the names after you.

- 4 Ask: “What is coal used for?” (Electricity). “What is gold used for?” (Jewelry).
- 5 Use flashcards with the names
 - Coal
 - Gold
 - Diamond to the pictures of these minerals
 - Ask the learners to match the picture and the word.

Activity 16.2: Sources of minerals

- 1 Give learners toy mining tools or pretend play tools.
- 2 Let them ‘mine’ painted rock samples or point to rocks that look like they contain minerals.
- 3 Ask: “Where do you think we find minerals?”
- 4 Explain: “Rocks and soil are where minerals are found.”

Activity 16.3: The importance of minerals

- 1 Divide learners into small groups.
- 2 Ask them to talk about how minerals are used at home or school (for example, electricity, cooking pots).
- 3 Let each learner draw a picture showing one use of minerals.

Model examples:

- A pot made from metal.
- A light bulb (electricity from coal).
- Jewellery from gold or diamond.

Exercise 16.2

- 1 rocks and soil
- 2 Coal
- 3 beautiful ornaments
- 4 houses and roads
- 5 metal

Unit exercise

- 1 Gold and diamonds
- 2 Coal
- 3 rocks and soil
- 4 Match the mineral
 - (a) Coal → (iii) Produces heat and electricity.
 - (b) Gold → (i) Makes jewelry.
 - (c) Rocks → (ii) Build houses and roads.
- 5 metals

Unit 17: Land use

Unit objectives

By the end of this unit, learners should be able to:

- a identify different uses of land.
- b discuss the importance of land.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book page 108-112.
- Science and Technology Infant Syllabus.
- Flashcards or labelled images of houses, farms, factories, and parks.
- Modelling clay or drawing paper.
- Sorting cards for land use types.

Teaching notes

Land use means how people use land for different activities like building homes, growing food, making goods, or having fun.

Types of land use

- **Residential land** – where people build homes and live.
- **Agricultural land** – used to grow crops and rear animals.
- **Industrial land** – where factories and industries are built.
- **Recreational land** – used for fun activities like parks and sports fields.

Importance of land

- **Homes** – for building houses.
- **Food** – to grow crops and rear animals.
- **Work** – space for factories and jobs.
- **Recreation** – for parks and places to relax.

Let us start

Show learners the picture on page 108. Ask:

- 1 What do you see in the picture?
Model: Houses, factories, farms, people playing
- 2 Can you name places where people live, grow food or play?
Model: Home, farm, park

3 Why do we need land?

Model: To build homes, grow food, work and play.

New words

- **Residential** – a place where people live.
- **Agricultural** – land used for farming.
- **Recreational** – land used for fun.
- **Industrial** – land where factories are built.
- **Land** – the ground we use for different purposes.

Suggested answers

Activity 17.1 : Types of land use

a Let learners name each land use type from pictures

Model: Residential, agricultural, industrial, recreational

b Sorting card matching

Model: Home = Residential, Farm = Agricultural, Factory = Industrial, Park = Recreational

Exercise 17.1

1 Land use

2 agricultural land

Activity 17.2 : Modelling land use

1 Give learners modelling clay or drawing paper.

2 Ask them to model or draw a small neighbourhood.

3 Tell them to include:

- Homes (residential)
- Farms (agricultural)
- Factories (industrial)
- Parks (recreational)

4 Let them explain each land use type to the class.

Model explanation: “This is a park. People go there to play. This is a farm. We grow food here.”

Unit exercise

1 Residential land

2 Agricultural land

3 Industrial land

- 4 Matching:
- (a) Residential → (iii) Build homes.
 - (b) Agricultural → (i) Grow food.
 - (c) Recreational → (ii) Have fun activities.

Unit 18: Environmental conservation

Unit objectives

By the end of this unit, learners should be able to:

- a list natural resources.
- b identify natural resources.
- c discuss the importance of natural resources.
- d discuss human impact on the environment.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book pages 113-120.
- Science and Technology Infant Syllabus.
- Pictures or charts showing natural resources (trees, animals, rivers).
- Flashcards with environmental words.
- Old newspapers, plastic bottles or used paper for recycling activity.
- Digging tools and seedlings for tree planting.
- Sorting bins or boxes for recyclable and non-recyclable litter.

Let us start

Show learners the picture on page 113. Ask:

- 1 What can you see in the clean part of the picture?
Model: Children throwing rubbish in bins, clean river, green trees.
- 2 What makes the other part dirty and unhealthy?
Model: Smoke, litter on the ground, people cutting trees.
- 3 How can we keep our environment clean and safe?
Model: By not littering, planting trees, recycling and keeping water clean.

Teaching notes

- The environment is everything around us like land, air, water, trees, and animals.
- Natural resources are things we get from nature that help us live, such as:
 - **Air** – we breathe it.

- **Water** – for drinking and cooking.
- **Soil** – for growing plants.
- **Plants** – give food and wood.
- **Animals** – give food, clothes, and help on farms.
- We must keep the environment clean and safe by:
 - Throwing litter in bins.
 - Recycling used materials.
 - Planting trees.
 - Avoiding deforestation.
- Pollution makes the environment dirty and unsafe. It can come from litter, smoke and dirty water.
- Recycling means using old things to make new things.
- Deforestation means cutting down too many trees.

New words

- **Natural resources** – things from nature that help us live.
- **Pollution** – making the environment dirty.
- **Recycling** – making old things useful again.
- **Deforestation** – cutting too many trees without planting new ones.
- **Environment** – everything around us (air, trees, land, water).

Activity 18.1

Naming and identifying natural resources

- a** Show the pictures. Ask learners to name each resource.

Model answers:

- Wind → Used for power.
- Water → Used for drinking and cooking.
- Soil → Used for growing plants.
- Trees → Give food and wood.
- Cows → Give milk, meat, help in farming.

- b** Give learners sorting cards. Let them match each natural resource to its use.

Model example:

- Soil → Grow plants
- Animals → Food and clothes.
- Trees → Shade and wood.

Exercise 18.1

- 1 nature
- 2 Plants
- 3 soil
- 4 Animals

Activity 18.2

Human impact on the environment

- a Lead a discussion on how pollution and cutting trees harm the environment.
Model: Littering makes places dirty. Cutting trees removes shade and food sources.
- b Help learners make simple posters.

Model messages:

- “Keep our school clean!”
- “Plant trees, save the Earth!”
- “Do not litter!”

Activity 18.3

Picking, sorting, and disposing of litter

- a Group learners and help them pick up litter in the school yard.
- b Show them how to sort litter into recyclable and non-recyclable bins.
- c Help them dispose of the litter safely.

Activity 18.4

Planting trees

- a Provide digging tools and seedlings. Guide learners to plant in the garden.
- b Teach them how to water and care for trees.

Unit exercise

- 1 air and water
- 2 air
- 3 hydrated
- 4 a–ii, b–iii, c–i
- 5 Picture of child planting or picking litter.

Topic revision exercise

- 1 a-iii, b-i, c-ii
- 2 Planting more trees, recycling
- 3 avoid pollution
- 4 a-ii, b-iii, c-i
- 5 water
- 6 raincoats
- 7 Learners draw a weather wheel.
- 8 warm clothes
- 9 Learners draw collecting water from tap, pump, or borehole.
- 10 a-(A black rock used to produce heat)
b-(A clear and shiny precious stone)
c-(A shiny mineral used in jewellery)
- 11 Learners draw land being used for farming, houses, school.
- 12 farming and building homes

Topic

5

Tools, equipment and implements

Unit 19: Everyday tools and implements

Unit objectives

By the end of this unit, learners should be able to:

- a** name everyday tools and implements.
- b** identify everyday tools and implements.
- c** discuss the uses household and garden tools.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 121-127.
- Science and Technology Infant Syllabus.
- Flashcards with pictures of household and garden tools.
- Real or toy tools (measuring cups, hammer, hoe, spade).
- Modelling clay or dough.
- Drawing materials (paper, pencils, crayons).

Teaching notes

Household tools help with tasks like cooking, cutting, or fixing things.

Examples:

- **Scissors** – cut paper or cloth.
- **Hammer** – drive nails into wood.
- **Measuring cups** – measure ingredients when cooking.
- **Garden tools** are used to care for plants.

Examples:

- **Hoe** – loosens soil.
- **Garden fork** – turns and mixes soil.
- **Pick** – breaks hard ground.

- **Shovel** – scoops and moves soil.
- **Wheelbarrow** – carries soil and garden tools.
- Tools are important because they make work easier at home and in the garden.

Let us start

Show learners the picture on page 121. Ask:

- 1 What tools do you see in the kitchen?
Model: Measuring cups, mixing spoon, baking tray.
- 2 Can you name some tools you use at home?
Model: Scissors, hammer, spoon, broom.
- 3 What do people use garden tools for?
Model: To dig, plant, and take care of the garden.

New words

- **Tools** – things we use to do work.
- **Implements** – another word for tools.
- **Garden** – a place where we plant vegetables or flowers.
- **Measure** – to find the right amount of something.
- **Shovel** – a tool for scooping and moving soil.

Activity 19.1

Naming household tools and implements

- a Let learners name any one household tool and say what it is used for.
Model: “A hammer is used for hitting nails.”
“A cup is used for measuring cooking ingredients.”
- b Use flashcards to match tools to their uses.
Model: Scissors – cutting, Measuring cup – cooking, Hammer – fixing

Exercise 19.1

- 1 Household tools and implements
- 2 scissors
- 3 hammer
- 4 measure ingredients for cooking

Activity 19.2

Garden tools

- a** Show toy or real garden tools. Ask learners to name and demonstrate their uses.

Model: “This is a hoe. It digs soil.”

“This is a shovel. It moves soil.”

- b** Ask learners to draw and label their favourite garden tool.

Model: Draw a hoe, label: “Hoe – used for digging.”

Activity 19.3

The purpose of tools

- a** Ask learners to discuss in groups how they or their family use tools at home and in the garden.

- b** Let them share one tool they have used and explain what it is for.

Model: “I used a watering can to water flowers.”

Exercise 19.2

- 1** Garden tools
- 2** hoe
- 3** garden fork
- 4** wheelbarrow

Activity 19.4

Role-playing using tools

- a** Learners pretend to bake using toy tools like measuring cups.

Model: Pretend to measure flour or mix dough.

- b** Learners pretend to dig or plant using toy garden tools.

Model: Act digging with a toy hoe.

Activity 19.5

Modelling tools

- a** Provide learners with modelling dough. Let them create any tool of their choice.

- b** Each learner presents their tool and explains its use.

Model: “This is a spade. It helps me dig.”

Unit exercise

- 1 scissors
- 2 measuring cups
- 3 drive nails into wood
- 4 (a) – Digging and loosening the soil.
(b) – Turning and aerating the soil.
(c) – Scooping and moving soil.
- 5 kettle, hammer
- 6 Learner's drawing of themselves using a garden tool.

Unit 20: Measuring devices

Unit objectives

By the end of this unit, learners should be able to:

- a measure length using measuring devices.
- b measure weight using measuring devices.
- c measure volume using measuring devices.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 128-134.
- Science and Technology Infant Syllabus.
- Rulers, measuring tapes, weighing scale, measuring cups.
- Objects of different weights and lengths (books, bags, pencils, fruits, jars of water).

Teaching notes

- **Length** tells how long or short something is.
Examples: pencil, table, rope
Tools: ruler, measuring tape
- **Weight** tells how heavy or light something is.
Examples: school bag, bananas, sugar
Tool: weighing scale
- **Volume** tells how much space a liquid takes up.
Examples: water, juice, milk
Tools: measuring cups and jugs
- We compare objects by measuring and observing which one is longer, heavier, or has more volume.

Let us start

Show learners the picture on page 128. Ask:

- 1 What tools do you see on the table?
Model: Ruler, weighing scale, measuring cup.
- 2 What can you use to measure a book's length?
Model: A ruler or measuring tape.
- 3 How do you measure water for cooking?
Model: Using a measuring cup or jug.

New words

- **Measure** – to find out the size or amount.
- **Length** – how long or short something is.
- **Weight** – how heavy or light something is.
- **Volume** – how much space a liquid takes up.
- **Scale** – a device for measuring weight.

Suggested answers

Exercise 20.1

- 1 Length
- 2 pencil
- 3 rulers and measuring tapes

Activity 20.1

Measuring length using devices

- a Give learners a pencil and a book. Ask them to measure using a ruler.
- b Let them compare and say which is longer.
Model: "The book is longer than the pencil."

Activity 20.2

Measuring weight using devices

- a Learners weigh their school bag and a fruit.
- b Ask: Which one is heavier?
Model: "The bag is heavier than the fruit."

Activity 20.3

Measuring volume using devices

- a Ask learners to pour water into a measuring cup up to 100ml and 200ml.
- b Compare which one is more.
Model: “200ml is more than 100ml.”

Exercise 20.2

- 1 weighing scale
- 2 Volume
- 3 jugs
- 4 weight

Activity 20.4

Comparing lengths, weights, and volumes

- a Measure and compare the length of a ruler and pencil using measuring tape.
Model: “The ruler is longer.”
- b Compare the weight of a watermelon and a school bag using the scale.
Model: “The watermelon is heavier.”
- c Compare the volume of water in two jars using measuring cups.
Model: “This jar has more water.”

Unit exercise

- 1 ruler
- 2 We check using a scale or by lifting them and comparing which feels heavier.
- 3 measuring cup
- 4 Match:
 - Weight → weighing scale.
 - Volume → measuring cup/jug
- 5 Match:
 - Length → ruler, measuring tape.
 - Weight → Weighing scale.
 - Volume → measuring cup / jug.
- 6 Learners draw and label a measuring cup.

Unit 21: Digital devices

Unit objectives

By the end of this unit, learners should be able to:

- a** outline digital devices.
- b** identify digital devices.
- c** discuss basic functions of digital devices.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 135-140.
- Science and Technology Infant syllabus.
- Pictures or flashcards of digital devices (computer, phone, tablet).
- Toy devices or real digital devices (if available).
- Modelling clay or dough.
- Drawing paper and crayons.

Teaching notes

Digital devices are tools that use electricity or technology to help us communicate, learn, and explore.

Examples:

- **Computer** – Used for typing, watching videos, learning.
- **Tablet/Phone** – Used for calling, games, learning.
- **Television** – Used to watch programmes and news.
- **Radio** – Used for listening to music, news.
- **Magnifying glass / Microscope** – Help us see small things.

Functions of digital devices:

- Communication (phone)
- Learning (for example, computer)
- Entertainment (TV, radio)
- Exploration (microscope)

Teach learners how to use digital devices safely:

- Keep devices clean and dry.
- Do not look at screens for too long.
- Handle them carefully to avoid damage.

Let us start

Show learners the picture on page 135. Ask:

- 1 What digital devices do you see in the picture?
Model: Computer, projector, television
- 2 Which device do you use to watch cartoons?
Model: Television / Tablet
- 3 What do people use to talk to each other over long distances?
Model: Phone / Tablet

New words

- **Digital** – using technology or electricity.
- **Computer** – a device for typing and learning.
- **Tablet** – a small device for games and learning.
- **Magnifying glass** – a tool for seeing small things clearly.
- **Microscope** – a tool to see tiny things like germs.

Suggested answers

Exercise 21.1

- 1 digital devices
- 2 computer
- 3 phones / tablets
- 4 television
- 5 radio

Activity 21.1

Drawing a digital device

- a Ask learners to draw one digital device (phone, tablet).
- b Let each learner describe what the device is used for.
Model: “This is a phone. I use it to talk to my grandmother.”

Activity 21.2: Functions of digital devices

- a In groups, discuss how digital devices are used at home or school(radios, computers, televisions, smart phones.
- b Ask learners which device they like and why.
Model: “I like the tablet because I play games.”

Activity 21.3

Using digital devices

- a Practise turning on/off a tablet or computer.
- b Use a magnifying glass to observe small things like leaves or insects.

Exercise 21.2

- 1 Phones and tablets
- 2 radios
- 3 Magnifying glasses
- 4 clean
- 5 damage

Activity 21.4

Modelling digital devices

- a Learners use dough to create a phone, tablet or computer.
- b Each learner explains what their model does.
Model: “This is my phone. I use it to call Dad.”

Unit exercise

- 1 tablet
- 2 television
- 3 a–(iii), b–(i), c–(ii)

Unit 22: Science and technology careers

Unit objectives

By the end of this unit, learners should be able to:

- a name different careers in science and technology.
- b identify careers related to science and technology.
- c describe roles of Science and technology professionals.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book, pages 142-148.
- Science and Technology Infant syllabus.

- Pictures of different professionals (doctor, farmer, engineer, ICT worker).
- Flashcards (career names and tools).
- Real or improvised props (stethoscope, hard hat, tablet, hoe).

Teaching notes

- Science and Technology careers help people by solving problems using knowledge and tools.
- Examples of such careers include doctors, engineers, farmers, and ICT specialists.
- These professionals use different tools and work in different places: hospitals, farms, construction sites, and IT offices.
- Role-play and dressing up help learners understand the duties of these careers.
- Encourage learners to express interest and respect for different careers.

Let us start

Show learners the pictures on page 141. Ask:

- 1 What jobs do you see in the pictures?
Model: Doctor, engineer, ICT worker, farmer.
- 2 Which job looks interesting to you? Why?
Model: Allow varied answers like: “I like the doctor because they help sick people.”
- 3 How do these jobs help people?
Model: They treat people, build things, grow food, and fix computers.

New words

- **Doctor** – a person who treats sick people.
- **Engineer** – a person who builds things like roads and buildings.
- **Farmer** – a person who grows crops and keeps animals.
- **ICT** – stands for Information and Communication Technology (computers and gadgets).
- **Technology** – using tools and machines to solve problems.

Suggested answers

Activity 22.1: Careers in Science and Technology

- a Guide learners to name the careers:
Model: Doctor, engineer, scientist (farmer), ICT worker
- b Match careers to their roles using flashcards.
Model answers:
 - Doctor → Treats sick people.
 - Engineer → Builds roads or bridges.

- Farmer → Grows crops.
- ICT worker → Fixes computers.

Activity 22.2 : Careers

- a** In groups, discuss what each career does:
- Doctors treat sick people.
 - Engineers build roads and houses.
 - Farmers grow crops and keep animals.
 - ICT specialists fix and create computer programs.
- b** Share which career you find interesting and explain why.
- Model:** “I like farmers because they grow food.”

Activity 22.3 : Dressing up and role-playing

- a** Instruct learners to dress up using props.
- Doctor: carry a toy stethoscope.
 - Engineer: wear a hard hat.
 - Farmer: use a hoe or seed bag.
 - ICT: pretend to type on a computer.
- b** Help learners role-play job tasks.
- Doctor: “Check” a patient.
 - Farmer: Pretend to plant seeds.
 - ICT: Pretend to fix a computer.

Exercise 22.1

- 1 Doctors and nurses
- 2 engineers
- 3 IT specialists
- 4 Farmers

Activity 22.4 : Visiting a workplace

- a** Visit a hospital, farm, or ICT office.
- Model:** Let learners observe and note what people do.
- b** Record and share observations.
- Model:** “We saw a nurse checking a baby.”

Unit exercise

- 1 Doctor
- 2 Bridges
- 3 Farmers

4 Match the career.

(a) → (iii)

(b) → (i)

(c) → (ii)

Topic revision

1 Match the items.

(a) Doctor → Helps people stay healthy.

(b) Engineer → Designs and builds things.

(c) Farmer → Grows crops and rears animals.

2 Doctor, nurse, ICT technician

3 Learners draw pictures of themselves as doctor, nurse etc.

4 Match the items

(a) Scissors → (iii) Used for cutting paper.

(b) Hoe → (i) Used for digging soil.

(c) Measuring cups → (i) Used for measuring ingredients.

5 **Model:** Tools are important in our homes and gardens to **make work easy**.

6 Digital devices

(a) → (ii)

(b) → (iii)

(c) → (i)

Model: Handle them carefully to avoid **damage**.

7 Know weight, volume and length

8 Digital devices seen at home or school are phone, tablet, computer.

9 Learners draw and label a digital device.

10 damage

Topic 6

Energy and fuels

Unit 23: Forms of energy and their uses

Unit objectives

By the end of this unit, learners should be able to:

- a identify different forms of energy.
- b discuss the uses of energy.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 149-153.
- Science and Technology Infant Syllabus.
- Pictures or charts showing devices that use light, sound, heat and electrical energy.
- Flashlight, musical toy, heater/fan, radio and torch.

Teaching notes

- **Energy** is what makes things work or move.
- Types of energy include:
 - **Light energy**: Helps us see.
 - **Sound energy**: Makes us hear and communicate.
 - **Heat energy**: Keeps us warm or cooks food.
 - **Electrical energy**: Comes from electricity and powers machines and lights.
- Children interact with energy forms every day (for example, using a torch, hearing a radio, cooking).
- Demonstrations and pictures help learners connect energy forms with their uses.

Let us start

Show learners the pictures on page 149. Ask:

- 1 What energy forms do you see in the pictures?
→ Light, sound, electrical, and heat.

- 2 What makes a radio produce sound?
Model: Energy.
- 3 How do you feel when you stand near a heater?
Model: Warm.

New words

- **Energy** – the power that makes things work or move.
- **Light** – energy that helps us see.
- **Electrical** – energy that powers machines and lights.
- **Sound** – energy that helps us hear.
- **Heat** – energy that keeps us warm.

Suggested answers

Activity 23.1: Forms of energy

- a Name any three energy forms.
Model: Light, heat, sound
- b What form of energy do you use at home?
Model: Electrical energy (for lights, fridge, television)

Activity 23.2: Uses of energy

- a Talk about the ways you use energy at home and school.
Model: At home: for cooking (heat), lighting (electricity), and music (sound).
At school: for lights, projector, or radio.
- b Share your favourite energy-powered device and explain why you like it.
Model: Radio – because I like to hear music.
Torch – because I can use it in the dark.

Activity 23.3: Forms of energy

- a **Electrical energy** – Switch on a flashlight or fan.
- b **Heat energy** – Rub hands or stand near a heater.
- c **Light energy** – Shine a torch in the dark.
- d **Sound energy** – Clap hands or use a musical toy.

Exercise 23.1

- 1 Things work and move because of **energy**.
- 2 **Electrical energy** powers machines and lights.
- 3 **Light energy** helps us to see things.

- 4 Sound
- 5 Heat

Unit exercise

- 1 **Light** energy helps you see in the dark.
- 2 **Heat** energy keeps us warm.
- 3 **Electrical** energy is used to power a radio.
- 4 Match the form of energy to its use.

Column A	Column B
Headphones (sound)	Make us hear music and communicate.
Light bulb (electrical)	Powers lights.
Heater (heat)	Keeps us warm.

Unit 24: Types of fuel

Unit objectives

By the end of this unit, learners should be able to:

- a identify different types of fuels.
- b discuss the uses of fuels.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 154-158.
- Science and Technology Infant syllabus.
- Pictures or real samples of fuel types (wood, gas cylinder, toy car).
- Chart paper and crayons.
- Video showing cars, buses, and factories using fuel.

Teaching notes

- **Fuel** is anything burned to give heat energy. It helps people cook, move cars, and warm homes.
- There are different types of fuel: **wood**, **natural gas**, **petrol**, and **diesel**.
 - **Wood**: Used in open fires for cooking or heating.
 - **Natural gas**: Used in stoves at home.
 - **Petrol**: Used in cars and motorbikes.
 - **Diesel**: Used in trucks, buses, and machines.

- Help learners understand that fuels can be solid (wood), liquid (petrol, diesel), or gas (natural gas).

Let us start

Show learners the picture on page 154. Ask:

1 What fuels do you see in the pictures?

Model: Wood, petrol, natural gas

2 What is fuel used for?

Model: Fuel is used for cooking, driving, and heating.

3 How do people cook food or power cars?

Model: By using fuel like gas, wood, petrol or diesel.

New words

- **Fuel** – something that is burned to make heat.
- **Wood** – dry sticks used for cooking or heating.
- **Petrol** – fuel for cars and motorbikes.
- **Diesel** – fuel for big buses and trucks.
- **Natural gas** – gas used for cooking in homes.

Suggested answers

Activity 24.1: Types of fuels

a Name any two types of fuel.

Model: Wood, petrol

b Draw a car and a bus. What type of fuel do they use?

Model: Car – petrol; Bus – diesel

Activity 24.2: Fuel use in family or community

a In groups, talk about how your family or community uses fuel.

Model: Example: “My family uses gas to cook food.”

b Draw a picture showing one way fuel is used.

Model: Drawing of a gas stove or firewood cooking setup

Exercise 24.1

- 1 A substance burned to produce heat energy is called **fuel**.
- 2 A liquid fuel used to power cars and motorbikes is **petrol**.
- 3 **Wood** is a natural fuel used for cooking and heating.
- 4 We use **natural gas** to cook and heat homes.

Activity 24.3: Fuel use

- a Watch a video showing how cars, buses, and factories use different types of fuels.

Model: Observe petrol and diesel being used.

- b Observe how natural gas is used to cook food.

Model: Discuss and describe what was seen in the video.

Unit exercise

- 1 **Petrol** is used to power cars.
- 2 **Wood** is used for cooking in many homes.
- 3 **Diesel** is commonly used in trucks and buses.
- 4 Match the fuel to its use.

Column A	Column B
Petrol	Powers cars.
Wood	Heats homes and used for cooking.
Natural gas	Used for cooking.

Unit 25: Sources of energy

Unit objectives

By the end of this unit, learners should be able to:

- a state sources of energy.
- b discuss the types of energy.
- c differentiate between renewable and non-renewable energy sources.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book, pages 159–164.
- Science and Technology Infant Syllabus.
- Pictures or flashcards showing the sun, wind turbines, hydropower stations, coal, oil, gas, and firewood.
- Sorting cards labelled “Renewable” and “Non-renewable”.
- Crayons and drawing paper.

Teaching notes

- **Energy** is power we use to do things like cooking, heating, lighting, and moving.
- Energy comes from sources such as the sun, wind, water, coal, oil, gas, and wood.
- **Solar**, **wind**, and **hydropower** are **renewable** sources—they never run out.

- **Coal, oil, and natural gas** are **non-renewable**—they can run out over time.
- Energy sources help us cook food, heat our homes, light our rooms, and power machines.

Let us start

Show learners the pictures on page 159. Ask:

1 What sources of energy do you see in the pictures?

Model: The sun, wind turbines, water from a dam, coal, and firewood.

2 How do you think the sun provides us with energy?

Model: The sun gives us solar energy through its heat and light.

3 Why is it important to have different types of energy sources?

Model: So we can always have power even if one source runs out.

New words

- **Energy** – power we use to do things.
- **Solar** – from the sun.
- **Hydropower** – energy from water.
- **Renewable** – can be used again and again.
- **Non-renewable** – can run out over time.

Suggested answers

Activity 25.1: Sources of energy

a In groups, list two sources of energy.

Model: Sun and wind.

b What source of energy do you have at home?

Model: Electricity from solar panels or firewood.

Activity 25.2: Types of energy

a Work in groups to list examples of how solar, wind, and hydro-power are used.

Model: Solar – drying clothes or heating water.

Wind – turning turbines for power.

Water – turning generators in dams.

b Draw a picture showing your favourite type of energy source.

Model: Learners draw the sun or wind turbines.

Activity 25.3: Renewable and non-renewable energy sources

- a

Use a sorting game to classify energy sources as renewable or non-renewable.
Model: Renewable: Solar, wind, water
Non-renewable: Coal, oil, gas
- a

Talk about why renewable energy is better for the environment.
Model: It does not pollute and it never runs out.

Exercise 25.1

- 1

sources of energy
- 2

solar
- 3

wind
- 4

coal
- 5

hydro power

Unit exercise

- 1

Solar is a source of energy from the sun.
- 2

Hydropower energy comes from flowing water.
- 3

Thermal energy source comes from burning coal.
- 4

Match the energy source to its type.

Column A	Column B
Solar panel	Renewable
Pile of coal	Non-renewable
Wind turbine	Renewable

Unit 26: Energy conservation

Unit objectives

By the end of this unit, learners should be able to:

- a

outline ways of conserving energy.
- b

describe the importance of conserving energy.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book, pages 165-169.
- Science and Technology Infant Syllabus.
- Pictures of electrical appliances.
- Drawing materials (paper, crayons, pencils).

- Real or toy switches, plugs, solar lanterns.
- Flashcards with key words.

Teaching notes

- Energy conservation means using energy wisely and not wasting it.
- Children must learn simple ways to conserve energy such as turning off lights, unplugging devices, and using energy-efficient appliances.
- Emphasise why it's important: it saves money, protects the environment, and helps future generations.
- Learners can relate to home and school settings to make learning more practical.
- Use real-life examples and pictures to support understanding.

Let us start

Show learners the pictures on page 165. Ask:

- 1 What can you see the children doing in the pictures?
Model: They are switching off lights and unplugging a charger.
- 2 Why is it important to turn off lights when not in use?
Model: It saves energy and reduces bills.
- 3 How can you save energy at home or school?
Model: By turning off lights, unplugging devices, and using energy-saving appliances.

New words

Teach these using flashcards and pictures:

- **Conservation** – saving and not wasting.
- **Energy-efficient** – uses little energy.
- **Appliances** – machines like radios, kettles.
- **Unplug** – remove a plug from socket.
- **Save** – keep for later use.

Suggested answers

Activity 26.1 : Ways to conserve energy

- a Three ways you can save energy at home.
 - Turn off lights when leaving a room.
 - Unplug chargers and devices after use.
 - Use energy-saving bulbs like LEDs.
- b Match each activity to its energy-saving benefit.

Image	Match to benefit
Switch	Switching power off
Solar panel	Source of electricity
LED bulb	Uses less energy

Activity 26.2: Importance of conserving energy

- a** Sample discussion points:
- It saves money.
 - It protects the environment.
 - It helps others in the future.
- b** **Model answer:**
- I will turn off the lights when I leave a room.

Activity 26.3: Energy-saving activities

- a** Ask learners to walk around switching off lights and unplugging unused items.
- b** Role-play: One learner pretends to use a solar lantern or LED light and explains why it saves energy.

Activity 26.4: Creating energy-saving posters

- a** Let learners draw posters showing how to save energy (“Switch Off Lights!”, “Unplug Chargers!”).
- b** Display posters on the classroom wall or notice board.

Story time

Use the story to reinforce key concepts:

- Ask learners what Tendai and Sibho learned.
- Let them retell the story in their own words.
- Emphasise the link between saving energy and caring for the environment.

Unit exercise

- 1 switch off lights
 - 2 charger
 - 3 Energy-efficient ones
 - 4 Match the action.
- (a) → ii
- (b) → iii
- (c) → i

Unit 27: Renewable energy technology

Unit objectives

By the end of this unit, learners should be able to:

- a identify renewable energy technologies.
- b demonstrate how renewable energy technologies work.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 170-177.
- Science and Technology Infant syllabus.
- Pictures of solar panels, wind turbines and hydroelectric dams.
- Model kits or craft materials (cardboard, sticks, cotton reels).
- Crayons and drawing paper.

Teaching notes

- **Renewable energy** comes from natural resources like the sun, wind and water.
- It does not run out and does not pollute the environment.
- Main types taught:
 - **Solar panels** – capture sunlight to produce electricity.
 - **Wind turbines** – use wind to turn blades and generate electricity.
 - **Hydroelectric dams** – use flowing water to turn turbines and generate electricity.
- Renewable energy helps the environment by reducing pollution and saving money.

Let us start

Show learners the pictures on page 170. Ask:

- 1 What renewable energy technologies do you see in the pictures?
Model: Solar panels, wind turbines, hydroelectric dams
- 2 Which one uses the wind to make electricity?
Model: Wind turbine
- 3 Why do you think using renewable energy is good for the environment?
Model: It does not cause pollution.

New words

- **Renewable** – can be used again and again, does not run out.
- **Solar panel** – a board that catches sunlight to make electricity.
- **Wind turbine** – a tall machine with blades that turns in the wind to make electricity.

- **Hydroelectric** – using moving water to make electricity.
- **Energy** – power we use to do things like light, heat and movement.

Suggested answers

Exercise 27.1

- 1 natural resources
- 2 sun and wind
- 3 Solar panels
- 4 Wind turbines
- 5 dams

Activity 27.1: Renewable energy technologies

- a Name each technology:
Model: Solar panel, Wind turbine, Hydroelectric dam
- b Match to source:
Model: Solar panel – Sun
Wind turbine – Wind
Hydroelectric dam – Water

Activity 27.2: Models of renewable energy technologies

- 1 Provide craft materials (paper, sticks, cotton reels, glue).
- 2 Assign each group one model: solar panel, wind turbine, or hydro dam.
- 3 Guide them to make the model step by step.
- 4 Ask learners to display and explain how it works.

Model answers:

- This is a wind turbine. It uses the wind to turn and make electricity.
- This is a solar panel. It catches sunlight and gives power.
- This is a dam. It uses water to make electricity.

Activity 27.3: The impact of renewable energy

- a Group discussion answers:
Model: It gives power without smoke.
It helps people save money on electricity.
It makes life better with light and machines.
- b Drawing should show:
Model: A house with a solar panel, wind turbines in a field, or a dam with water flowing.

Exercise 27.2

- | | |
|------------------|-------------|
| 1 turbine blades | 3 pollution |
| 2 dam | 4 sunlight |

Activity 27.4: Renewable energy models

- a Use model kits to build solar panels or wind turbines.
- b Each learner/group demonstrates and explains the source of energy:

Model: Sun for solar panel, Wind for wind turbine.

Unit exercise

- 1 Solar panels
- 2 Wind turbines
- 3 Hydroelectric dams
- 4 Match the renewable energy technology.
 - Solar panel – Sun
 - Wind turbine – Wind
 - Hydroelectric dam – Water

Topic revision exercise

- 1 Match Column A to B
 - (a) Wind turbine – (ii) Uses wind to make electricity.
 - (b) Solar panel – (iii) Captures sunlight for power.
 - (c) Hydroelectric dam – (i) Uses water flow for power.
- 2 Learners' own drawing
- 3 Match the items
 - (a) Light bulb – Helps us see things.
 - (b) Power line – Powers appliances.
 - (c) Radio – Helps us hear music.
- 4 Heat
- 5 Any three types of energy (heat, light, movement)
- 6 makes life easy
- 7 Petrol
- 8 conserves the environment
- 9 Match Column A to B
 - (a) Unplugging devices – (iii)
 - (b) Turning off lights – (ii)
 - (c) Energy-efficient appliances – (i)
- 10 Learners' own drawing

Topic 7

Disaster risk management and resilience

Unit 28: Hazards

Unit objectives

By the end of this unit, learners should be able to:

- a** identify hazards.
- b** describe early warning signs of hazards.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learners Book, pages 178-183.
- Science and Technology Infant syllabus.
- Flashcards with pictures of hazards.
- Videos showing storms, floods, fires.
- Posters of early warning signs.
- Drawing paper and crayons.

Teaching notes

A **hazard** is a dangerous event that can harm people, animals or the environment.

Types of hazards include:

- **Flood**: water covers land/homes.
- **Lightning**: flashes in the sky.
- **Fire**: flames that burn land/homes.
- **Wind**: strong winds damage buildings.
- **Earthquake**: when the ground shakes.
- **Drought**: no rain for a long time.
- **Early warning signs** include:
 - Thunder (loud sound in the sky).
 - Lightning (flashes of light).
 - Strong wind (trees and dust move).

- Heavy rain (leads to flooding).
- IKS (unusual bird or animal behaviour)

Let us start

Show learners the picture. Ask:

- 1 What types of hazards do you see in the pictures?
Model: Flood, fire, drought, strong wind, lightning
- 2 How do you know when a storm is coming?
Model: By seeing lightning, hearing thunder, or seeing trees swaying
- 3 Why is it important to prepare for hazards?
Model: To stay safe and reduce damage

Suggested answers

Activity 28.1: Hazards

- a Name any two hazards.
Model: Fire and flood.
- b Prepare flashcards. Match the hazards to their names
Model: Learners show flashcards and say: “This is fire.”

Activity 28.2: Early warning signs

- a Talk about signs before a storm or heavy rain.
Model: Dark clouds, thunder, lightning, birds flying away.
- b Draw one early warning sign.
Model: Example: dark clouds in the sky.

Exercise 28.1

- 1 hazards
- 2 Flooding
- 3 an earthquake
- 4 drought
- 5 Indigenous Knowledge Systems

Activity 28.3: Matching pictures to hazards

Use cards with images (fire, lightning, flood). Ask learners to match with labels like “Fire”, “Flood.”

Model answers:

- Picture of fire → Fire
- Picture of cracked land → Drought
- Picture of houses in water → Flood

Activity 28.4: Disaster warning signs

- a** Watch a video

Model: Show signs like dark clouds, strong winds, lightning.

- b** Share how to respond.

Model: “If I see dark clouds, I stay indoors.”

“If I hear thunder, I stop playing outside.”

Unit exercise

- 1** Drought

- 2** Earthquake

- 3** Flood

- 4** Match the hazard

(a) → Heavy rain.

(b) → Thunder and lightning.

(c) → No rain for a long time.

- 5** List two hazards you have seen or heard about.

Fire, flood (Accept any valid pair like drought, lightning)

Unit 29: Safety and evacuation

Unit objectives

By the end of this unit, learners should be able to:

- a** state safe behaviours during emergencies.
- b** identify safe meeting places and evacuation routes.
- c** discuss measures for safety.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book, pages 184-189
- Science and Technology Infant Syllabus
- Flashcards: emergency, safety, evacuation
- Fire extinguisher or picture/model

- Sand bucket or picture/model
- Chart of emergency contacts
- Whistle (for drill simulation)

Teaching notes

What is an emergency?

An emergency is a sudden event that is dangerous and needs quick action, like a fire or storm.

Safe behaviours during emergencies:

- Stay calm
- Follow teacher's instructions
- Know emergency contacts

Evacuation means leaving a place safely when there is danger.

Children should know:

- the evacuation route.
- who to follow.
- where the safe meeting points are (for example, playground, school field).

Safety tools such as fire extinguishers, sand buckets, and emergency kits (water, torch, First Aid) help us stay safe.

Let us start

Show learners the picture. Ask:

- 1 What do you see the children doing in the picture?
Model: Lining up and leaving the building quietly.
- 2 Why is it important to follow instructions during an emergency?
Model: So that we can stay safe and avoid getting hurt.
- 3 What safety tools do you see?
Model: Fire extinguisher, safety signs.

New words

- **Safety** – being free from danger.
- **Emergency** – a sudden danger.
- **Evacuation** – leaving a place to stay safe.
- **Fire extinguisher** – a tool used to stop small fires.
- **Safety map** – a drawing showing how to exit and where to go.

Suggested answers

Activity 29.1: Stating safe behaviours

- a** List three safe behaviours:
Model: Stay calm, Follow teacher, Know emergency contacts.
- b** Why important:
Model: Stay calm to think clearly, follow teacher for safety, contacts help in getting help quickly.

Exercise 29.1

- 1** emergencies
- 2** fire
- 3** phone numbers
- 4** evacuation
- 5** marked paths to a safe place

Activity 29.2: Drawing a safety map

- a** Help learners draw classroom with doors and arrows showing evacuation route.
- b** Let them show meeting point (for example, playground).
Model answer: A map showing exit path with arrows and a label for the safe meeting point.

Activity 29.3: Discussing safety tools

- a** Importance of emergency kits:
Model: Help us during danger (for example, First Aid for wounds, water for drinking).
- b** Demonstration:
Model: Show learners how to hold and aim the fire extinguisher and pour sand from the bucket.

Model answer:

- Fire extinguisher is used to stop fire.
- Sand bucket is for fire from flammable liquids.

Activity 29.4: Practising evacuation drills

- a** Role-play emergency (fire, storm).
- b** Practise evacuation by walking out quietly.
Model answer: Children line up, walk out following arrows to playground.

Unit exercise

- 1** stay calm
- 2** think clearly and avoid accidents

- 3 your teacher
- 4 Match the step to its correct description.
- (a) – (ii) Follow the marked path.
- (b) – (i) Listen and stay in line.
- (c) – (iii) Stay together at a marked area.

Unit 30: Emergency supplies

Unit objectives

By the end of this unit, learners should be able to:

- a name emergency supplies.
- b explain the importance of emergency supplies.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 190-194.
- Science and Technology Infant Syllabus
- A real First Aid kit (if available).
- Flashlight, mask, sanitiser bottle (empty or full).
- Drawing materials for poster activity.

Teaching notes

Emergency supplies are items that help people stay safe and healthy during emergencies such as power outages, injuries, disease outbreaks, or disasters. Examples include:

- **Flashlights** – for light when there is no electricity.
- **Sanitisers** – for keeping hands clean from germs.
- **Water** – for hydration.
- **Masks** – to protect from smoke, dust or germs.
- **First Aid kits** – for treating small injuries.

Explain that having emergency supplies at home or school helps people act quickly and safely in a crisis. Teach learners how to use each item correctly through demonstrations.

Let us start

Show learners the picture on page 190. Ask:

- 1 What emergency supplies do you see in the picture?
- Model:** First Aid kit, torch/flashlight, sanitiser, mask, water.

2 How do you think these supplies can help in emergencies?

Model: They help us stay safe, clean, and healthy.

3 Why is it important to have an emergency kit at home or school?

Model: So we can act quickly when something bad happens like injury or blackout.

New words

- **Emergency** – something dangerous that happens suddenly.
- **Supplies** – things we need to use.
- **Flashlight** – a small light you can carry.
- **First Aid kit** – a box with things for treating injuries.
- **Sanitiser** – a liquid used to clean hands.

Suggested answers

Activity 30.1: Naming emergency supplies

Model answers: Flashlight and sanitizer, bandages

Exercise 30.1

- 1 emergency supplies
- 2 water and masks
- 3 First Aid kit
- 4 Sanitisers
- 5 Water

Activity 30.2: Importance of emergency supplies

Model answers:

- a Flashlight – helps us see when there's no power
- b Sanitiser – keeps our hands clean
- c Water – helps us stay strong and healthy
- d Mask – keeps away germs and dust
- e First Aid kit – used to treat injuries

Activity 30.3: The use of emergency supplies

- a Show how to use a **flashlight** during a power cut.

Model: Press the button to turn it on. Point it where you need to see.

- b Demonstrate proper use of a **First Aid kit**.

Model: Take out cotton and antiseptic. Clean a pretend cut gently.

- c Practise using **hand sanitiser and a mask**.

Model: Put a little sanitiser on hands. Rub all over. Show how to wear the mask over nose and mouth.

Activity 30.4: Creating emergency supply posters

Guide:

- a Let learners draw two or more emergency supplies (for example, flashlight, water, mask).
- b Display the posters in class and let learners explain their drawings.

Unit exercise

- 1 One emergency supply used to see in the dark is a flashlight.

Model: flashlight

- 2 _____ helps to keep our hands clean.

Model: Sanitisers

- 3 _____ is important for treating minor injuries.

Model: First Aid kit

- 4 Match the supply to its use.

Column A	Column B
Flashlight	Helps you see in the dark.
Sanitiser	Keeps hands clean.
First Aid kit	Treats injuries.

Unit 31: Emergency responders

Unit objectives

By the end of this unit, learners should be able to:

- a list emergency responders.
- b discuss the roles of emergency responders.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner’s Book, pages 195-199.
- Science and Technology Infant syllabus.
- Flashcards (with names and roles of responders).
- Pictures of emergency responders (cut-outs or printed).
- Props for role-play (hats, boxes as stretchers, cones).

Teaching notes

- **Emergency responders** are people who help during dangerous situations such as accidents, fires or medical emergencies.
- The three types introduced are:
 - **Police** – Maintain safety, control traffic, and catch lawbreakers.
 - **Firefighters** – Put out fires and rescue people from dangerous places.
 - **Health personnel** – Provide medical help and treat injuries.
- These responders are important for saving lives and reducing damage during emergencies.
- Use real-life examples like accidents, fires, or sickness to make concepts relatable.
- Reinforce key vocabulary: emergency, responder, police, firefighter, health personnel.

Let us start

Show learners the pictures on page 195. Ask:

- 1 What emergency responders do you see in the pictures?
Model: Health personnel, firefighter, police officer.
- 2 How do police officers help during emergencies?
Model: They control traffic, maintain order, and help people.
- 3 Why is it important to have health personnel during emergencies?
Model: They treat the injured and help save lives.

New words

- **Emergency** – a dangerous situation that needs quick help.
- **Responder** – a person who helps during emergencies.
- **Police** – people who keep the community safe and catch criminals.
- **Firefighter** – a person who puts out fires.
- **Health personnel** – people like nurses and doctors who treat the sick or injured.

Suggested answers

Activity 31.1: Emergency responders

- a Police, firefighter
- b Use flashcards to match:
 - Police → Maintain safety.
 - Firefighter → Put out fires.
 - Health personnel → Treat injuries.

Activity 31.2: The roles of emergency responders

- a** In groups, learners discuss:
 - Police help by controlling traffic, stopping fights and protecting people.
 - Firefighters rescue people and stop fires from spreading.
- b** Health personnel treat wounds and help the sick or injured.

Model answers:

- I admire firefighters because they are brave and save people from burning buildings.
- I like health personnel because they help sick people feel better.

Activity 31.3: Role-playing scenarios

- a** Learners dress up as:
 - Police officer – uses hand gestures or props to control traffic.
 - Firefighter – pretends to spray water on a fire.
 - Health personnel – uses first aid kit to care for an injured person. Each group acts out an emergency rescue, for example, road accident with responders working together.

Exercise 31.1

- 1** emergency responders
- 2** police
- 3** Firefighters

Activity 31.4: Cutting and pasting

- a** Learners cut out pictures of police, firefighters, and health workers.
- b** They paste and label them:
 - Police – controls traffic
 - Firefighter – rescues people from fires.
 - Health personnel – treats injured people.

Activity 31.5: Visiting a service station

- a** Visit a local service station (police, fire station, or hospital).
- b** Learners observe and note:
 - Uniforms, tools used (for example, fire hose), duties done, emergency vehicles.
 - Share in class through drawings, oral reports, or group presentations.

Unit exercise

- 1** Firefighter
- 2** Health personnel

- 3 Match the responder to their role.
- (a) Police – (iii) Maintains safety.
 - (b) Firefighter – (i) Puts out fires.
 - (c) Health personnel – (ii) Treats injured people.

Unit 32: Emotional resilience

Unit objectives

By the end of this unit, learners should be able to:

- a identify techniques for managing fear and anxiety during emergencies.
- b explain the importance of seeking comfort from trusted adults.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, page 200-205.
- Science and Technology Infant syllabus.
- Flashcards with calming techniques.
- Puppets or dolls.
- Chart paper and crayons.
- Posters with trusted adults (parent, teacher, guardian).

Teaching notes

- **Emotional resilience** is the ability to cope with strong emotions such as fear, anxiety and sadness.
- Children can be taught to recognise these feelings and respond in healthy ways.
- Techniques like deep breathing, calming down, crying, and miming help reduce stress.
- Trusted adults (parents, teachers, guardians) play a key role in giving comfort and safety.
- Activities should encourage self-expression, sharing feelings, and confidence in seeking help.

New words

- **Fear** – a strong feeling when you are scared.
- **Anxiety** – a feeling of worry or nervousness.
- **Calm** – quiet and peaceful.
- **Comfort** – something that makes you feel better.
- **Breathing** – taking in and letting out air.

Let us start

Show learners the picture on page 200. Ask:

- 1 What do you see in the picture?
Model: Learners may say: a teacher, children sitting in a circle, talking, listening.
- 2 How do you feel when something scary happens?
Model: Scared, nervous, heart beats fast, crying.
- 3 Who do you talk to when you are sad or afraid?
Model: My parents, teacher, grandmother
- 4 What do you do to feel better when upset?
Model: I breathe, cry, talk to someone, pray.

Suggested answers

Activity 32.1: Techniques for managing fear and anxiety

- a Match flashcards of actions like “deep breathing”, “crying”, “sitting quietly”, “miming” with their names.
Model Answers:
 - Sit quietly – Calm down
 - Tears – Crying
 - Breathe in/out – Deep breathing
 - Act emotions – Miming
- b Guide learners to practice deep breathing as a class.
Model: Inhale through nose, exhale through mouth slowly.

Activity 32.2: The importance of seeking comfort

- a Let learners work in pairs and talk about times they felt better after speaking to someone.
Model: “I felt safe,” “I stopped crying,” “I was not scared anymore.”
- b Let learners draw a trusted adult comforting them.
Model: Model example – a teacher hugging a child.

Activity 32.3: Role-playing emotional support

- a Use dolls or puppets. One acts scared, the other comforts them.
Model: “It’s okay, I’m here,” “Take a deep breath.”
- b Act out calming techniques like deep breathing or sitting quietly.

Exercise 32.1

- 1 calming down
- 2 miming
- 3 secure
- 4 teachers

Activity 32.4: Drawing calming techniques

- a Learners draw themselves calming down during a scary moment (for example, thunder, dog barking).
- b Share and explain the calming method used.

Model: “I was breathing slowly.” “I was hugging my mum.”

Unit exercise

- 1 panic
- 2 By taking control of yourself.
- 3 makes you feel better
- 4 (a-ii), (b-iii), (c-i)
- 5 They guide you on what to do.

Topic revision exercise

- 1 (a-ii), (b-iii), (c-i)
- 2 Match the items.
 - Police officer → Keep people safe.
 - Firefighter → Put out fires.
 - Nurse → Help injured people.
- 3 Match the items in Column A to their correct description in Column B.
 - (a) Lightning → (ii) Bright flashes during a storm.
 - (b) Drought → (iii) A long period without rain.
 - (c) Thunder → (i) A loud sound from the sky.
- 4 List two safe behaviours during emergencies.
 - Stay calm.
 - Follow instructions or go to a safe place.
- 5 It is important to practise evacuation drills so that we **avoid injury**.
- 6 Match the items in Column A to their correct description in Column B.
 - (a) Flashlight → (ii) Used to see when it is dark.
 - (b) Water → (iii) Keeps you hydrated.
 - (c) First Aid kit → (i) Helps treat minor injuries.

7 List three emergency supplies you know:

- Flashlight
- Water
- First Aid kit

8 Draw and label a picture of your emergency kit.

Learner should draw a bag or box with labelled items such as: water bottle, flashlight, bandages, whistle and canned food.

Topic 8

Educational technology and innovation

Unit 33: Everyday technology

Unit objectives

By the end of this unit, learners should be able to:

- a** name technological devices.
- b** discuss uses of technological devices.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 207-212.
- Science and Technology Infant syllabus.
- Flashcards of digital devices (tablet, smartphone, computer, interactive board).
- Colouring sheets with pictures of devices.
- Tablets, computers, or pictures of them.
- Crayons or colouring pencils.

Teaching notes

- Digital devices are tools that help us learn, communicate and play using technology.
- Examples of digital devices:
 - **Tablet**: A small touch-screen computer used for reading, games and learning.
 - **Smartphone**: Used to call, text, play games and access learning apps.
 - **Computer**: Used to type, watch videos and search for information.
 - **Interactive board**: A large touchscreen board used by teachers to display lessons.
- Digital devices are used for:
 - **Communication** (for example, calling or texting).
 - **Entertainment** (for example, watching movies, playing games).
 - **Learning** (for example, reading e-books, accessing educational apps).

Let us start

Show learners the picture on page 207. Ask:

- 1 What digital devices do you see in the picture?
Model: Tablet, smartphone, interactive board, computer.
- 2 Which device do you use at home for learning or entertainment?
Model: Answers will vary (for example, smartphone, tablet).
- 3 How can digital devices help us learn?
Model: By showing videos, games, lessons, and reading books.

New words

Explain these new words:

- **Technology** – using machines and tools to do things better.
- **Digital** – something using computers or screens.
- **Tablet** – a small flat computer you touch to use.
- **Interactive board** – a big screen used in class to show lessons.
- **Smartphone** – a phone used to call, play or learn.

Suggested answers

Activity 33.1 : Technological devices

- a Name two technological devices.
Model: Tablet, smartphone
- b Match each device to its correct name using flashcards.
Model: Match images to words like: tablet, computer, smartphone, interactive board

Exercise 33.1

- 1 Digital devices
- 2 Tablet
- 3 Computers
- 4 Interactive boards

Activity 33.2 : Uses of digital devices

- a In groups, talk about how you use digital devices at home or school.
Model: Learners may say: watching cartoons, reading, playing learning games.
- b Share your favourite digital device and explain why you like it.
Model: “I like a tablet because I play learning games.”

Activity 33.3: Matching devices to their uses

Use flashcards of devices and uses.

- Tablet → Learning
- Smartphone → Communication
- Computer → Typing
- Interactive board → Teaching/displaying lessons

Activity 33.4: Picture reading (page 211)

- a** Draw a picture of a digital device.
Model: Learners draw a phone, tablet, or computer.
- b** Describe how the device helps people.
Model: “The tablet helps me learn.” / “The computer helps me type.”

Activity 33.5: Playing an interactive game

- a** Use educational apps on tablets to play learning games.
Model: For example spelling, puzzles, Math games.
- b** Work in pairs to solve puzzles or answer questions using digital devices.
Model: Encourage turn-taking and teamwork.

Activity 33.6: Colouring digital device pictures

- a** Colour pictures of a tablet, smartphone, computer, and interactive board.
Model: Distribute worksheets.
- b** Share your coloured pictures with the class.
Model: Display them on the classroom wall.

Unit exercise

- 1 Smartphone
- 2 Interactive board
- 3 Computer
- 4 Allow learners to read and attend online lessons
- 5 Match the digital device to its use.
 - Interactive board → Displaying educational lessons.
 - Smartphone → Making calls.
 - Computer → Typing large documents.

Unit 34: Educational technology interaction

Unit objectives

By the end of the unit, learners should be able to:

- a name technological devices.
- b interact with technological devices.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 213-217.
- Science and Technology Infant Syllabus.
- Tablets, computers or laptops.

Teaching notes

Software is a program on a device that helps us do things like drawing, typing, and playing games.

Types of software and their uses

- **Paint:** For drawing and colouring pictures.
- **Games:** For learning and playing.
- **Word Processor:** For typing words and sentences.

How children interact with technology

- Drawing and painting with software like Paint.
- Playing educational games to learn through fun.
- Typing using word processors.

Let us start

Show learners the picture. ask:

- 1 What are the children doing in the picture?
Model: They are using computers and listening to the teacher.
- 2 Have you ever used a computer or tablet to play games or draw?
Model: Let learners respond freely.
- 3 What software do you use at home or school?
Model: Paint, Word processor, Games.

New words

- **Paint** – a program for drawing and colouring pictures.

- **Game** – a program for playing fun or learning.
- **Word processor** – a program for typing words.
- **Software** – a program that helps us do things on a computer or tablet.
- **Typing** – Writing words using a keyboard.

Suggested answers

Exercise 34.1

- 1 **Software** is a program on a computer used to draw, type and play games.
- 2 We use **paint** to draw and colour pictures.
- 3 **Roblox** is used to play fun and educational games.
- 4 We type words and create documents using a **word processor**.

Activity 34.1: Interacting with technological devices

- a Draw your favourite animal using paint software
Model: Learners draw a cat, dog, elephant, etc. using paint software
- b Play an educational game and share score
Model: Learners take turns playing and telling their score
- c Type name and a short sentence
Model: For example, My name is Tino. I like cats.

Activity 34.2: Drawing and painting

- a Use digital device to paint
Model: Learners create colourful digital art
- b Share with class
Model: Show on projector, tablet or printed copy

Activity 34.3: Typing and matching words

- a Type list of colours
Model: Red, Blue, Green, Yellow
- b Match to pictures
Model: Interactive matching with digital flashcards

Unit exercise

- 1 **Paint** is used for drawing.
- 2 **Word processor** is used for typing words.
- 3 **Roblox** allows us to play educational games.
- 4 Learners' own drawing: A tablet, computer or phone with labels like screen, keyboard, mouse.

5 Matching activity

Column A (Image)	Column B (Match)
(a)	Drawing pictures
(b)	Typing words
(c)	Playing educational games

Unit 35: Robotics and coding

Unit objectives

By the end of this unit, learners should be able to:

- a guide a flow in relation to other objects on a flow map.
- b identify tasks that robots can do.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 218-223.
- Science and Technology Infant syllabus.
- Toy robot or robot picture.
- Flow map/chart with paths.
- Flashcards with new words (robot, task, coding).
- Video clip of robots in action (optional).

Teaching notes

- A **robot** is a machine that moves and performs tasks when given instructions.
- **Coding** means giving step-by-step instructions to control how the robot works.
- Robots follow instructions such as “move forward”, “turn left”, “stop”.
- A **flow map** shows where the robot can go — like roads or paths.
- Robots can be found in banks (ATMs), homes (toys), and supermarkets (stock helpers).
- **Control** means guiding the robot using coding steps.
- Encourage learners to use direction words: forward, back, left, right.

Let us start

Show learners the picture on page 218. ask:

- 1 What are the children doing with the robot in the picture?

Model: They are learning how to use or control the robot.

- 2 How do you think the robot knows where to go?
Model: It is given instructions or coded steps.
- 3 Have you seen robots in places like supermarkets or banks?
Model: Learners may mention ATMs or robot toys.

New words

- **Robot** – a machine that can do tasks.
- **Task** – a job or work to do.
- **Coding** – giving step-by-step instructions.
- **Control** – guiding movement using instructions.
- **Flow map** – a map with paths for robots.

Activity 35.1

Title: Visiting positions using robots on a flow map

- 1 Place a map on the floor or table.
- 2 Place a toy robot at the starting point.
- 3 Ask learners to guide the robot using commands like:
 - Move forward
 - Turn left/right
 - Stop
- 4 Let each learner give at least two instructions.
- 5 Allow learners to guide the robot to a new location.

Model answer

“Move forward two steps, turn right, stop.”

Exercise 35.1

- 1 A machine that can move and do tasks is a **robot**.
- 2 A **flow map** shows paths and positions where robots can move.
- 3 You can use simple **coding steps** to control a robot.
- 4 Robots can **play** games.

Activity 35.2

Title: Identifying tasks robots can do

- 1 Show a short video or images of robots doing different tasks (for example, toy robots, ATMs, robot cleaners).
- 2 Ask: Which robot task do you like the most?
- 3 Let learners talk in pairs or groups.
- 4 Help them say why they chose it.

Model answer :

- “I liked the robot that opens the door because it helps people.”
- “I liked the toy robot because it plays games.”

Activity 35.3

Title: Demonstrating how robotic toys work

- 1 Bring a toy robot or pretend using a picture.
- 2 Let learners press buttons or pretend to give commands.
- 3 Use basic commands like “Go forward”, “Stop”, “Turn left”.
- 4 Emphasise that these are coding steps.

Model answer:

- “When I press the forward button, the robot moves.”

Unit exercise

- 1 A robot can help **process money transactions** at a bank.
- 2 An automatic door **opens automatically**.
- 3 Robotic toys follow instructions by **playing games**.
- 4 Matching – Column A to Column B.
 - (a) ATM → **(ii)** Helps with money transactions.
 - (b) Automatic door → **(iii)** Opens automatically.
 - (c) Robotic toy → **(i)** Follows commands.
- 5 Matching Column A to Column B.
 - (a) Robot → **(ii)** Follows instructions to move.
 - (b) Flow map → **(iii)** Shows paths for robots.
 - (c) Automatic door → **(i)** Opens when someone approaches.

Unit 36: Technology safety

Unit objectives

By the end of this unit, learners should be able to:

- a state safety rules when using technological devices.
- b discuss the importance of safe use of technological devices.
- c demonstrate safe use of technological tools.

Suggested teaching and learning materials

- PlusOne Science and Technology Grade 1 Learner's Book, pages 224-230.
- Science and Technology Infant syllabus.
- Digital devices (tablet, computer, headphones).
- Flashcards with safety rules.
- Posters showing correct sitting posture.
- Drawing paper and crayons.

Teaching notes

- Teach learners that **technology safety** means using devices like computers and tablets in a way that does not hurt the body.
- Emphasise basic rules such as sitting properly, taking breaks, and keeping the volume low when using headphones.
- Explain why it is wrong to share passwords.
- Show correct posture using real objects or illustrations.
- Reinforce that safety keeps our body and information protected.
- Use group activities, posture demonstrations, and drawing tasks for reinforcement.

Let us start

Show learners the picture. Ask:

- 1 What do you see the children doing with the technological devices?

Model: Using computers and tablets while sitting on chairs.

- 2 How can you stay safe when using a computer or tablet?

Model: Sit properly, take breaks, use headphones safely, and do not share passwords.

- 3 Why is it important to follow rules when using digital tools?

Model: To protect our body and keep information safe.

New words

- **Safety** – being free from danger or harm.
- **Posture** – the way we sit or stand.
- **Device** – a machine like a computer or tablet.
- **Screen time** – time spent looking at a screen.
- **Volume** – loudness of sound.

Suggested answers

Activity 36.1

- a List three safety rules you follow when using a tablet or computer.

Model: Sit properly, take breaks, keep volume low.

- b** Talk about why each rule is important.

Model: It protects our back, eyes, ears, and keeps information safe.

Exercise 36.1

- 1** **Safety rules** help us to use technological devices safely.
- 2** Keep your back **straight** when using a computer.
- 3** Rest your eyes every **20 minutes** by looking away from the screen.
- 4** Keep your information private.
- 5** Not sharing **passwords** keeps your accounts secure.

Activity 36.2

Model answers:

- a** Talk about how safety rules help you:

Model: They keep us healthy and protect our body parts.

- b** One most important rule and why:

Model: “Take breaks” – because it helps protect our eyes from getting tired.

Activity 36.3

- a** Practise sitting properly:

Model: Sit upright, feet flat, screen at eye level.

- b** Hold tablet at eye level:

Model: Show how to lift the tablet up to match eye level.

- c** Adjust headphone volume:

Model: Demonstrate using the volume button and stopping when it is loud.

Unit exercise

- 1** **Sit upright** to protect your back and neck.
- 2** Take breaks to reduce **stress on eyes**.
- 3** **Reduce volume** to protect your ears.
- 4** Match the rule to benefit:

Column A	Column B
(a) Sit properly.	(ii) Protects your back and neck.
(b) Take breaks.	(iii) Keeps your eyes healthy.
(c) Keep volume low.	(i) Protects your ears.

Topic revision exercise

- 1 Match the items to descriptions.

Column A	Column B
(a) Proper posture.	(ii) Prevents back pain.
(b) Taking breaks.	(iii) Reduces eye strain.
(c) Keeping volume low.	(i) Protects your ears.

- 2 When using technological devices **keep volume low and take breaks**.

- 3 A password **protects personal information**.

- 4 Drawing task – learners to draw a robot at work.

- 5 Robots **make tasks easier to do**.

- 6 Match the items to their descriptions.

Column A	Column B
(a) Interactive board.	(ii) Used in classrooms for lessons.
(b) Smartphone.	(iii) Used for communication and entertainment.
(c) Tablet.	(i) Used for learning and reading.

- 7 Match the items to their descriptions.

Column A	Column B
(a) Paint software.	(ii) Used for drawing and colouring.
(b) Word processor.	(iii) Used for typing words.
(c) Gaming software.	(i) Used for playing fun and educational games.

- 8 Three types of software learners may list:

Model: Paint, Word, WhatsApp (or other known ones like Zoom, YouTube Kids)

- 9 Draw and label:

Model: Allow learner choice, for example, draw a tablet and label “screen”, “buttons”.