"What goes up, must come down."

Isaac Newton

NATURAL SCIENCES & TECHNOLOGY

LESSON PLAN GRADE 4

TERM 1

A MESSAGE FROM THE NECT

NATIONAL EDUCATION COLLABORATION TRUST (NECT)

Dear Teachers

This learning programme and training is provided by the National Education Collaboration Trust (NECT) on behalf of the Department of Basic Education (DBE)! We hope that this programme provides you with additional skills, methodologies and content knowledge that you can use to teach your learners more effectively.

What is NECT?

In 2012 our government launched the National Development Plan (NDP) as a way to eliminate poverty and reduce inequality by the year 2030. Improving education is an important goal in the NDP which states that **90% of learners will pass Maths, Science and languages with at least 50% by 2030**. This is a very ambitious goal for the DBE to achieve on its own, so the NECT was established in 2015 to assist in improving education.

The NECT has successfully brought together groups of people interested in education to work together to improve education. These groups include the teacher unions, businesses, religious groups, trusts, foundations and NGOs.

What are the learning programmes?

One of the programmes that the NECT implements on behalf of the DBE is the 'District Development Programme'. This programme works directly with district officials, principals, teachers, parents and learners; you are all part of this programme!

The programme began in 2015 with a small group of schools called the **Fresh Start Schools (FSS)**. Curriculum **learning programmes** were developed for **Maths, Science and Language** teachers in FSS who received training and support on their implementation. The FSS teachers remain part of the programme, and we encourage them to mentor and share their experience with other teachers.

The FSS helped the DBE trial the NECT learning programmes so that they could be improved and used by many more teachers. NECT has already begun this scale-up process. NECT has already begun this scale-up process in its Universalisation Programme and in its Provincialisation Programme.

Everyone using the learning programmes comes from one of these groups; but you are now brought together in the spirit of collaboration that defines the manner in which the NECT works. Teachers with more experience using the learning programmes will deepen their knowledge and understanding, while some teachers will be experiencing the learning programmes for the first time.

Let's work together constructively in the spirit of collaboration so that we can help South Africa eliminate poverty and improve education!

www.nect.org.za

COVID – 19 INFORMATION:

What is COVID-19?
COVID-19 is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCoV.'
The COVID-19 virus is a new virus linked to the same family of viruses as Severe Acute Respiratory Syndrome (SARS) and some types of common cold.

What are the symptoms of COVID-19?

Symptoms can include fever, cough and shortness of breath. In more severe cases, infection can cause pneumonia or breathing difficulties. More rarely, the disease can be fatal. These symptoms are similar to the flu (influenza) or the common cold, which are a lot more common than COVID-19. This is why testing is required to confirm if someone has COVID-19.

COVID 19 Talk

1. How can we see if we have been infected with COVID -19?

   Fever, Cough, shortness of breath, loss of sense of taste or smell, body aches and Tiredness
2. Which three things should we do to protect ourselves and loved ones from COVID 19?

   Wearing protective clothes like masks, washing and sanitising hands and surfaces regularly and social distancing

PSYCHOSOCIAL SUPPORT

It is natural for children to feel stress, anxiety, grief, and worry during an ongoing pandemic like COVID-19. Fear and anxiety about their own health and the health of loved ones can be overwhelming and cause strong emotions. In today's digital world, children also access different kinds of information and news through social media and digital platforms, some of them may not be factually true, causing further stress and anxiety. It is enhanced when children are not able to go out, play, attend school or interact freely. For those children and families who are subjected to quarantine or isolation there may be an increased risk of violence and abuse. When stress levels go up for adults and children, there is a greater risk of gender based violence and other forms of violence against children.
Role as parent or caregiver:
• To promote an environment where children can grow up and develop their full potential having fun and being safe and healthy.
• To facilitate a space where children are listened to, they can express their thoughts and feelings, and are free to ask any question and are answered honestly.

COVID-19 Talk – Taking good care of ourselves

It is important that we are in good and stable health to prevent infections. Here are some ways to take good care of our bodies

- Eat well and have enough rest
- Exercise regularly
- Talk to friends and family openly about your feelings
- Get accurate and reliable information about COVID-19

COVID-19 Talk - Stigma

A stigma is a negative attitude or feeling towards a person because of a condition or illness. Many people have suffered due to stigmas. Some have lost their friends, family, and jobs and loved ones due to this stigma.

As young Scientists we should understand that anyone can be infected or affected by a disease. We need to show care and love for our loved ones at a time of difficulty by encouraging them to open up and feel free about their health and conditions.

COVID - 19 Talk – Vaccination

A vaccine is a substance that is introduced into our bodies so that we have a stronger immune system. A strong immune system fights against diseases and infection that invade our bodies. Sometimes our own immune systems are weak and cannot fight diseases like COVID-19 on their own. When a vaccine is introduced it helps our bodies to fight. We have been vaccinated before for diseases such as Polio, Chicken pox.

The South African government has procured vaccines to be used to vaccinate the population. This will most likely help in fighting the COVID -19 pandemic

CONTENTS

Welcome to the NECT Natural Sciences & Technology learning programme! This CAPS compliant programme consists of:

- A full set of lesson plans for the term (3 lessons per week)
- A resource pack with images to support the lesson plans
- A full colour poster for one topic
- An outline of the assessment requirements for the term
- A tracker to help you monitor your progress

Lesson Plan Structure

1. The Term 1 lesson plan is structured to run for 9 weeks.
2. Each week, there are three lessons, of the following notional time:

   1 x 1 hour 30 minutes

   2 x 1 hour

   This time allocation of 3.5 hours per week is CAPS aligned.

Lesson Plan Contents

1. The lesson plan starts with a **CONTENTS PAGE** that lists all the topics for the term, together with a breakdown of the lessons for that topic. You will notice that lessons are named by the week and lesson number, for example, Week 8 Lesson 8C.

2. Every topic begins with a 2 - 4 pages **TOPIC OVERVIEW**. The topic overview pages are grey, making them easy to identify. The topic overview can be used to introduce the topic to learners. The topic overview includes:

a. A ***general introduction*** to the topic that states how long the topic runs for, the value of the topic in the final exam and the number of lessons in the topic.

b. A table showing the ***position of the topic*** in the term.

c. A ***sequential table*** that shows the prior knowledge required for this topic, the current knowledge and skills that will be covered, and how this topic will be built on in future years. Use this table to give learners an informal quiz to test their prior knowledge. If learners are clearly lacking in the knowledge and skills required, you may need to take a lesson to cover some of the essential content and skills. It is also useful to see what you are preparing learners for next, by closely examining the 'looking forward' column.

d. A glossary of ***scientific and technological vocabulary***, together with an explanation of each word or phrase. It is a good idea to display these words and their definitions somewhere in the classroom, for the duration of the topic. It is also a good idea to allow learners some time to copy down these words into their personal dictionaries or science exercise books. You must explicitly teach the words and their meanings as and when you encounter these words in the topic. A good way to teach learners new vocabulary is to use 'PATS':

   - POINT – if the word is a noun, point at the object or at a picture of the object as you say the word.

- ACT – if the word is a verb, try to act out or gesture to explain the meaning of the word, as you say it.
- TELL – if the word has a more abstract meaning, then tell the learners the meaning of the word. You may need to code switch at this point, but also try to provide a simple English explanation.
- SAY – say the word in a sentence to reinforce the meaning.

e. ***Understanding the uses / value of natural sciences & technology****.* It is very important to give learners a sense of how science applies to their daily lives, and of the value that science adds to their lives. Hold a brief discussion on this point when introducing the topic and invite learners to elaborate on the uses and value that this topic will have to their lives.

f. ***Personal reflection****.* At the end of every topic, come back to the topic overview, and complete this table. In particular, it is important to note your challenges and ideas for future improvement, so that you can improve your teaching the next year.

3. After the topic overview, you will find the **INDIVIDUAL LESSONS.** Every lesson is structured in exactly the same way. This helps you and the learners to anticipate what is coming next, so that you can focus on the content and skills. Together with the title, each lesson plan includes the following:

a. ***Policy and Outcomes****.* This provides you with the CAPS reference, and an overview of the skills that will be covered in the lesson. You can immediately see the SCIENCE PROCESS AND DESIGN SKILLS that will be covered, and whether they are lower or higher order skills.

b. ***Possible Resources****.* Here, you will see the resources that you should ideally have for the lesson. If you need to use the poster or pages from the resource pack, this will be listed here. There is also a space for improvised resources, and you are invited to add your own ideas here.

c. ***Classroom Management****.* Every lesson starts in the same way. Before the lesson, you must write a question that relates to the previous lesson on the chalkboard. Train your learners to come into the classroom, to take out their exercise books, and to immediately try to answer this question. This links your lesson to the previous lesson, and it effectively settles your learners.

Once learners have had a few minutes to answer, read the question and discuss the answer. You may want to offer a small reward to the learner who answers first, or best. Get your learners used to this routine.

Next, make sure that you are ready to begin your lesson, have all your resources ready, have notes written up on the chalkboard, and be fully prepared to start. Remember, learners will get restless and misbehave if you do not keep them busy and focussed.

d. ***Accessing Information****.* This section contains the key content that you need to share with learners. Generally, it involves sharing some new information that is written on the chalkboard, explaining this information, and allowing learners some time to copy the information into their exercise books. Train learners to do this quickly and efficiently. Learners must anticipate this part of the lesson, and must have their books, pens, pencils and rulers ready.

Explain to learners that this is an important resource for them, because these are the notes they will revise when preparing for tests and exams.

Checkpoint 1*.* Straight after 'Accessing Information', you will find two checkpoint questions. These questions help you to check that learners understand the new content thus far.

e. ***Conceptual Development****.* At this point, learners will have to complete an activity to think about and apply their new knowledge, or to learn a new skill. This is the most challenging part

of the lesson. Make sure that you fully understand what is required, and give learners clear instructions.

Checkpoint 2*.* Straight after 'Conceptual Development, you will find two checkpoint questions. These questions help you to check that learners understand the new concepts and skills that they have engaged with.

f. ***Reference Points for Further Development****.* This is a useful table that lists the relevant sections in each approved textbook. You may choose to do a textbook activity with learners in addition to the lesson plan activity, or even in place of the lesson plan activity. You may also want to give learners an additional activity to do for homework.

g. ***Additional Activities / Reading****.* This is the final section of the lesson plan. This section provides you with web links related to the topic. Try to get into the habit of visiting these links as part of your lesson preparation. As a teacher, it is always a good idea to be more informed than your learners.

4. At the end of the week, make sure that you turn to the **TRACKER,** and make note of your progress. This helps you to monitor your pacing and curriculum coverage. If you fall behind, make a plan to catch up.

5. **POSTER AND RESOURCE PACK.** You will have seen that the *Possible Resource* section in the lesson plan will let you know which poster or reference pages you will need to use in a lesson.

Please note that you will only be given these resources once. It is important for you to manage and store these resources properly. Do this by:

- Writing your name on all resources
- Sticking Resource onto cardboard or paper
- Laminating all resources, or covering them in contact paper
- Filing the resource papers in plastic sleeves once you have completed a topic

Have a dedicated wall or notice board in your classroom for Natural Science and Technology.

- Use this space to display the resources for the topic
- Display the vocabulary words and meaning here, as well as the resources
- Try to make this an attractive and interesting space
- Display learners' work on this wall – this gives learners a sense of ownership and pride

6. **ASSESSMENT.** At the end of the lesson plans, you will find the CAPS assessment requirements for the term.

Lesson Plan Routine

Train your learners to know and anticipate the routine of Natural Science and Technology lessons. You will soon see that a good knowledge of this routine will improve time-on-task and general classroom discipline and that you will manage to work at a quicker pace.

Remember, every Natural Science and Technology lesson follows this routine:

1. **Classroom Management**: settle learners by having two questions written on the chalkboard. Learners take out their exercise books and pens, and immediately answer the questions. Discuss the answers to the questions and reward the successful learner.
2. **Accessing Information:** have key information written on the chalkboard. Explain this to learners. Allow learners to copy this information into their books.
3. **Checkpoint 1:** ask learners two questions to check their understanding.
4. **Conceptual Development:** complete an activity to apply new knowledge or skills.
5. **Checkpoint 2:** ask learners two questions to check their understanding.
6. **Reference Points for Further Development:** links to textbook activities – you may choose to use these activities as additional classwork activities, or as homework activities.
7. **Tracker:** fill in your tracker at the end of the week to track your progress.

A vehicle to implement CAPS

Teaching Natural Sciences & Technology can be exciting and rewarding. These lesson plans have been designed to guide you to implement the CAPS policy in a way that makes the teaching and learning experience rewarding for both the teacher and the learners.

To support the policy's fundamentals of teaching Natural Sciences & Technology, these lesson plans use the CAPS content as a basis and:

- provide a variety of teaching techniques and approaches
- promote enjoyment and curiosity
- highlight the relationship between Natural Science and Technology and other subjects
- where appropriate, draw on and emphasise cultural contexts and indigenous knowledge systems
- show the relationship between science, learners, their societies and their environments
- aim to prepare learners for economic activity and self-expression

Content and Time Allocation

These lessons plans have been developed to comply with CAPS in respect of both content and time allocation. In developing these lesson plans, we took into consideration the realities of teachers and to this end, we made some simple adjustments, without deviating from policy, to make the teaching of these lesson plans more achievable. The kinds of adjustments made include using some of the practical tasks in the lesson plans for assessment purposes; and building in time for revision and exams during terms 2 and 4.

CAPS assigns one knowledge strand to form the basis of content in each term. These strands are as follows:

- Term 1: ***Life and Living***
- Term 2: ***Matter and Materials***
- Term 3: ***Energy and Change***
- Term 4: ***Planet Earth and Beyond***

In most terms, there are Technology knowledge strands that complement the Natural Sciences strands. There are three Technology strands, they are:

- ***Structures***
- ***Systems and Control***
- ***Processing***

The distribution of these strands across the year is summarised in the table below:

Grade 4						
Term 1		**Term 2**		**Term 3**		**Term 4**
Strands NS & Tech		**Strands NS & Tech**		**Strands NS & Tech**		**Strands NS & Tech**
Structures	**Matter and Materials**	**Structures**	**Energy and Change**	**Systems and Control**	**Planet Earth and Beyond**	**Systems and Control**
Structures for animal shelters	Materials around us Solid materials	Strengthening materials Strong frame structures	Energy and Energy transfer Energy around us Energy and sound	Movement energy in a system	Planet Earth The Sun The Earth & the Sun The Moon	Rocket Systems

Life and Living
Living and non-living things Structures of plants and animals What plants need to grow Habitats of animals

These lesson plans have been designed against the stipulated CAPS requirements with topics being allocated for the time prescribed by CAPS.

Remember that some slight changes have been incorporated to accommodate time for revision, tests and examinations

These lesson plans have been designed against the stipulated CAPS requirements with topics being allocated for the time prescribed by CAPS. (Remember that some slight changes have been incorporated to accommodate time for revision, tests and examinations).

The time allocation by topic is summarised in the table below.

Remember that one week equates to 3,5 hours or three lessons: two lessons of 1 hour each; and one lesson of 1½ hours.

	GRADE 4		GRADE 5		GRADE 6	
TERM	**Topic**	**Time in weeks**	**Topic**	**Time in weeks**	**Topic**	**Time in weeks**
Term 1: Life and Living	• Living and non-living things • Structures of plants and animals • What plants need to grow • Habitats of animals • Structures for animal shelters	2 2½ 1 2 2½ (10 wks)	• Plants and animals on Earth • Animal Skeletons • Skeletons and Structures • Food Chains • Life cycles	2½ 1½ 2½ 1½ 2 (10 wks)	• Photosynthesis • Nutrients in Food • Nutrition • Food Processing • Eco Systems and food webs	2½ 1½ 1½ 2½ 2 (10 wks)
Term 2: Matter and Materials	• Materials around us • Solid materials • Strengthening materials • Strong frame structures	3½ 2 2 2½ (10 wks)	• Metals and non-metals • Uses of metals • Processing materials • Processed materials	2 2½ 3½ 2 (10 wks)	• Solids, liquids and gases • Mixtures • Solutions as special mixtures • Dissolving • Mixtures and water resources • Processes to purify water	½ 2½ 1 1 2½ 2½ (10 wks)

Term 3: Energy and Change	• Energy and Energy transfer • Energy around us • Movement energy in a system • Energy and sound	2½ 2½ 2½ 2½ (10 wks)	• Stored energy in fuels • Energy and electricity • Energy and movement • Systems for moving things	3 3 1 3 (10 wks)	• Electric circuits • Electrical conductors and insulators • Systems to solve problems • Mains electricity	2½ 2 2½ 3 (10 wks)
Term 4: Planet Earth and Beyond	• Planet Earth • The Sun • The Earth & the Sun • The Moon • Rocket Systems	2 1 1 2 2 (8 wks)	• Planet Earth • Surface of the Earth • Sedimentary Rocks • Fossils	1 2½ 2 2½ (8 wks)	• The solar system • Movements of the earth and planets • The movement of the Moon • Systems looking into space • Systems to explore the Moon and Mars	2½ 1 1 1 2½ (8 wks)
TOTALS	38 weeks		38 weeks		38 weeks	

REFLECTING ON THE LESSONS THAT YOU TEACH

It is important to reflect on your teaching. Through reflection, we become aware of what is working and what is not, what we need to change and what we do not. Reflecting on your use of these lesson plans will also help you use them more effectively and efficiently.

These lesson plans have been designed to help you deliver the content and skills associated with CAPS. For this reason, it is very important that you stick to the format and flow of the lessons. CAPS requires a lot of content and skills to be covered – this makes preparation and following the lesson structure very important.

Use the tool below to help you reflect on the lessons that you teach. You do not need to use this for every lesson that you teach – but it is a good idea to use it a few times when you start to use these lessons. This way, you can make sure that you are on track and that you and your learners are getting the most out of the lessons.

LESSON REFLECTION TOOL			
Preparation			
1.	What preparation was done?		
2.	Was preparation sufficient?		
3.	What could have been done better?		
4.	Were all of the necessary resources available?		
Classroom Management			
		Yes	**No**
5.	Was there a question written in the board?		
6.	Was there an answer written on the board?		
7.	Was the answer discussed with the learners in a meaningful way?		
8.	Overall reflection on this part of the lesson: What was done well? What could have been done better?		

Accessing Information

		Yes	No
9.	Was the text and/ or diagrams written on the chalkboard before the lesson started?		
10.	Was the work on the board neat and easy for the learners to read?		
11.	Was the explanation on the content easy to follow?		
12.	Was the information on the board used effectively to help with the explanations?		
13.	Was any new vocabulary taught effectively? (in context and using strategies like PATS)		
14.	Were the learners actively engaged? (asked questions, asked for their opinions and to give ideas or suggestions)		
15.	Were the checkpoint questions used effectively?		
16.	Overall reflection on this part of the lesson: What was done well? What could have been done better?		

Conceptual Development			
		Yes	**No**
17.	Was the information taught in the 'Accessing Information' part of the lesson used to foreground the activity?		
18.	Were clear instructions given for the conceptual development activity?		
19.	Were the outcomes/answers to the activities explained to the learners?		
20.	Could the learners ask questions and were explanations given?		
21.	Was a model answer supplied to the learners? (written or drawn on the board)		
22.	Were the checkpoint questions used effectively?		
23.	At the end of the lesson, were the learners asked if they had questions or if they needed any explanations?		
24.	Overall reflection on this part of the lesson: What was done well? What could have been done better?		

TOPIC OVERVIEW: **Living and Non-Living Things** Term 1, Weeks 1A – 2B

A. TOPIC OVERVIEW

Term 1, Weeks 1a – 2b

- This topic runs for 1½ weeks.
- It is presented over 5 lessons.
- This topic's position in the term is as follows:

LESSOI	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

LESSOI	WEEK 6			WEEK 7			WEEK 8			WEEK 9			WEEK 10		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

B. SEQUENTIAL TABLE

GRADE 1 & 3	GRADE 4	GRADE 5
LOOKING BACK	CURRENT	LOOKING FORWARD

• Farm Animals and Wild Animals • Characteristics of insects • Life cycles of animals	• There are many different kinds of living things • Living plants and animals can carry out all seven life processes – feeding, growing, reproducing, breathing, excreting, sensing, moving • Some things appear not to be living, but carry on 'living' given the right conditions • Non-living things cannot carry out all seven life processes • Some things were living and are now dead: dead wood, dry leaves	• There are many different plants and animals living in different habitats on earth • Plants and animals depend on each other • They also depend on the resources available • Life Cycles • Plants and animals grow and develop throughout their lives

C. SCIENTIFIC AND TECHNOLOGICAL VOCABULARY

Ensure that you teach the following vocabulary at the appropriate place in the topic:

	TERM	EXPLANATION
1.	magnifying glass	A device used to look at small objects to see them in more detail
2.	microscope	A device with lenses used to look at tiny objects that you cannot normally see with the naked eye
3.	mould	Fungus that can grow on stale bread
4.	life processes	Vital processes that living things do in order to stay alive
5.	feeding	To eat
6.	growing	To grow taller or bigger
7.	reproducing	To have or give birth to young or babies
8.	breathing	To take in oxygen and give out carbon dioxide
9.	oxygen	A gas that humans and animals need to survive
10.	carbon dioxide	A gas that humans and animals breathe out.
11.	excreting	Process of getting rid of waste from our bodies
12.	sensing	When living plants and animals react to, or sense, things around them
13.	moving	To get from one place to another
14.	waste	Substance that is no longer needed
15.	dormant	To be inactive as if asleep. In a state of rest
16.	fertilization	The joining of male and female cells to form a zygote (a fertilised egg)
17.	hibernate	To be in a very deep sleep; the animal's body temperature drops and its breathing slows down

D. UNDERSTANDING THE USES / VALUE OF SCIENCE

The value of knowing that there are living and non-living things on the earth, and how to characterise and categorise them. There is a value to knowing that some things are living, even though they seem dead. Some things which were once living, can now be classified as non-living as they lose the ability to perform all seven life processes.

E. PERSONAL REFLECTION

Reflect on your teaching at the end of each topic:

Date completed:	
Lesson successes:	
Lesson challenges:	
Notes for future improvement:	

1 A

Term 1, Week 1, Lesson A
Lesson Title: Living things
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Living and non-living things
CAPS Page Number	16

Lesson Objectives

By the end of the lesson, learners will be able to:

- give examples of what living thing are
- explain what actions and changes in plants and animals that help them to live are called.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	✓

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing	✓	8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 1: Living things.	

CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What are the two main types of living things?

3. Learners should enter the classroom, then discuss the seven life processes with the teacher and then answer the question in their workbooks.
4. Discuss their answers with the learners.
5. Write the model answer onto the chalkboard.

C

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

LIVING THINGS:

1. Living things are mainly animals and plants.
2. There are things that do not look alive but are.
3. Life comes in many different shapes and sizes. There are many different kinds of living things.
4. Some examples of living things are dogs, cats, and other animals, people, spiders, birds, fish.
5. Some living things are so small, we need to use a **magnifying glass** or **microscope** to see them.

D

The two main types of living things are animals and plants.

2. Explain this to the learners as follows:
   a. We need to know that there are many different living things. Using Resource 1, show learners the examples of everyday living things.
   b. Ask learners if they can think of other things that are living.
   c. Explain that a magnifying glass is something we can look through to make things look a lot bigger than they normally are.
3. Ask learners to draw a picture of one of the living things in their books.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. Is a bird a living or a non-living thing? Give reason for your answer.
b. What is a magnifying glass?

Answers to the checkpoint questions are as follows:

a. A bird is a living thing. It breathes, moves and reproduces.
b. A magnifying glass makes things look a lot bigger than they really are.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

LIFE PROCESSES

1. Some things do not seem to be alive, but they are.
2. The **mould** on old bread or in a damp room does not look alive but is.
3. All living things do seven things that are the same.
4. These are called **life processes**.
5. Life processes are actions and changes in plants and animals that help them to live.

2. Read the information on the board to the learners.
   a. Explain that if something is alive, it does all seven life processes.
   b. Tell the learners that they will be learning the seven life processes in the next two lessons.
3. Ask the learners if they have any questions. Provide answers where necessary.
4. After looking at the pictures on Resource 1, tell the learners to copy these questions down into their book and answer them:
   1. Name three animals from Resource 1.
   2. Give one example of a living thing that does not look alive.
5. Give learners some time to complete this task in their exercise books.

MODEL ANSWER

1. *Any three from the page*
2. *Mould is a living thing that does not look alive.*

Checkpoint 2

Ask learners the following questions to check their understanding at this point:

a. What are life processes?

b. How many life processes are there?

Answers to the checkpoint questions are as follows:

a. Life processes are actions and changes in plants and animals that help them to live. b. There are seven life processes.

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Living and non-living things	2-3
Study & Master	Living things	10
Day by Day	Living things	1-2
Platinum	Living things	2
Viva	Living things	1
Spot On	Living things	2
Oxford Successful	Living things	10-11
Shuter & Shooter	Living and non-living things	1-2
Sasol Inzalo Bk A	Living things	4-6

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=BEz7RPvQCAI (3min 36sec) [Living and non-living things]

1 B

Term 1, Week 1, Lesson B
Lesson Title: Life processes
Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	Living and non-living things
CAPS Page Number	16

Lesson Objectives

By the end of the lesson, learners will be able to:

- Describe the first four life processes
- Explain how each of these life processes works in plants and animals.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information			

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 2: Feeling, growing & reproducing	

CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is a living thing?

3. Learners should enter the classroom, then discuss the seven life processes with the teacher and then answer the question in their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. How does an animal ake in food?
b. What is it called when a living thing gets bigger and older?

Answers to the checkpoint questions are as follows:

a. An animal akes in food through its mouth.
b. When a living thing gets bigger and older, it is growing.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

FOUR LIFE PROCESSES

1. Living things need to feed to get energy.
2. Animals eat plants or other animals. Plants take in sunlight.
3. The energy from food or sunlight helps living things grow.
4. Plants produce seeds which grow and become adult plants.
5. Animals produce young ones that become adults.

2. Read the information on the board to the learners.
   a. Explain that these are the first four life processes that all living things do.
   b. Remind the learners that there are three more life processes to come.
3. Ask the learners if they have any questions. Provide answers where necessary.

After looking at the pictures on Resource 2, tell the learners to copy this table into their book:

C

Life Process	Animals	Plants
Feeding	Animals eat plants or other animals.	Plants make their own food using sunlight.
Growing	Young animals develop into adults.	Seedlings grow and develop into plants.
Reproducing	Animals have young animals.	Plants have seeds which grow.
Breathing	Use oxygen to help turn food into energy	Use carbon dioxide to help turn food into energy

5. Give learners some time to complete this task in their exercise books.

4. Discuss their answers with the learners.
5. Write the model answer onto the chalkboard.

A living thing is something that carries out all seven life processes.

ACCESSING INFORMATION

D

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

THE LIFE PROCESSES

1. **Feeding** - when the animal or plant takes in food to be used for energy
2. **Growing** - when the animal or plant gets bigger and older
3. **Reproducing** - when an animal has babies or when new plants grow from seeds
4. **Breathing** - when animals use the **oxygen** from the air to help them turn food into energy
5. Breathing - when plants use **carbon dioxide** from the air to help them turn food into energy

2. Explain this to the learners as follows:
   a. We need to understand how living things carry out the life processes. The first four are feeding, growing, reproducing and breathing.
   b. Using Resource 2, show the learners the examples of feeding, growing, reproducing and breathing.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. How do plants reproduce?

b. What ives living things energy to live?

Answers to the checkpoint questions are as follows:

a. Plants produce seeds which grow when planted.

b. Food and sunlight

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Life Processes	5-6
Study & Master	Life Processes	11- 2
Day by Day	Life Processes	3
Platinum	Life Processes	3
Viva	Life Processes	1-4
Spot On	Life Processes	2-3
Oxford Successful	Life Processes	12-13
Shuter & Shooter	Living things	3-6
Sasol Inzalo Bk A	Living things	7-11

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. http://www.passmyexams.co.uk/GCSE/biology/life-processes.html [Life processes]

1 C

Term 1, Week 1, Lesson C
Lesson Title: Investigating life processes
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Living and non-living things
CAPS Page Number	16

Lesson Objectives

By the end of the lesson, learners will be able to:

- Describe the last three life processes
- Explain how each of these life processes works in plants and animals.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 3: Excreting, sensing, moving.	

CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What do living things need to move?
b. What is it called when animals get rid of waste from their bodies?

Answers to the checkpoint questions are as follows:

a. Living things need energy to move.
b. It is called excreting.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

LAST THREE LIFE PROCESSES

1. Living things need to get rid of things in our bodies that we do not need.
2. People use the toilet to excrete waste. Sweating is another way of getting rid of waste substances.
3. Plants release oxygen as a waste substance.
4. Animals use their nose to smell, their eyes to see, their ears to hear, tongues to taste, and their skin to feel.
5. Animals move to get from one place to another.

2. Read the information on the board to the learners.
   a. Explain that these are the last three life processes that all living things carry out.
   b. Explain to the learners that all living things on earth do all seven of these processes.
3. Ask the learners if they have any questions. Provide answers where necessary.
4. After looking at the pictures on Resource 3, tell the learners to copy this table into their book:

Life Process	Animals	Plants
Excreting	Go to the toilet, sweat	Release oxygen as a waste product
Sensing	React to smells, sounds, sights, taste and touch	Grow towards the light
Moving	Use arms, legs, fins, tails or wings to move	Roots grow down into the soil and stems and leaves grow toward the light

5. Give learners some time to complete this task in their exercise books.

C

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What do animals use to touch with?
b. What do fish use to move with?

Answers to the checkpoint questions are as follows:

a. Animals touch with their skin.
b. Fish use their fins and tails to move.

Why do living things need to feed?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Living things need to feed because they get their energy from food.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

THE LIFE PROCESSES

1. **Excreting** – when the animal or plant gets rid of **waste**
2. **Sensing** – when plants and animals react to what is happening around them
3. **Moving** – when animals go from one place to another
4. **Moving** – when plants send their roots down into the ground and their stems and leaves grow toward the light

2. Explain this to the learners as follows:
   a. We need to understand how living things carry out the life processes. The last three are excreting, sensing and moving.
   b. Using Resource 3, show the learners the examples of excreting, sensing and moving.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

4. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Life Processes	5-6
Study & Master	Life Processes	11-12
Day by Day	Life Processes	3
Platinum	Life Processes	3
Viva	Life Processes	1-4
Spot On	Life Processes	2-3
Oxford Successful	Life Processes	12-3
Shuter & Shooter	Living things	3-6
Sasol Inzalo Bk A	Living things	7-11

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://ebiology.in/introduction-to-life-processes/ [Life processes]

Term 1, Week 2, Lesson A
Lesson Title: Being dormant
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Living and non-living things
CAPS Page Number	16

Lesson Objectives

By the end of the lesson, learners will be able to:

- Explain what dormant means
- Explain how things can seem dead when in fact they are dormant.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing	✓	8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing		15. Making/ constructing	
[illegible]	✓	10. Planning Investigations		16. Evaluating and improving products	
[illegible]ying		11. Doing Investigations	✓	17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

2 A

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 4	Bean seeds, containers, cotton wool

CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What do animals use to sense with?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Animals use their eyes, ears, nose, tongue and skin to sense.

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

BEING DORMANT

1. Some things look like they are not alive, but they are. They are **dormant**.
2. Seeds that are not planted are not dead. When they get what they need to grow, they will start growing.
3. When they feed, they will have the energy to grow and the seven life processes will start.
4. Eggs do not look like they are living things, but inside a **fertilised** egg, the baby is growing until it hatches.
5. Some animals **hibernate** over winter. They are not dormant, but their life processes slow down.

C

2. Explain this to the learners as follows:
   a. We need to know that some things are alive even though they do not seem to be.
   b. Using Resource 4, show the learners the examples of things that are dormant.
   c. Explain that nothing will happen to these things until the right conditions occur. They need food and water, and sometimes heat to start growing and living.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

D

Day	Date	Height in centimetres	Diagram	What do you see?
1				

7				

TOPIC: Living and Non-Living Things

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. When is something dormant?
b. At what stage of life is a plant dormant?

Answers to the checkpoint questions are as follows:

a. Something is dormant when it is not dead, but waiting for the right conditions for the life processes to begin.
b. When it is a seed.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

GROWING A BEAN SEED

1. You need bean seeds, piece of cotton wool, and a container
2. Slightly wet the cotton wool and put into the container.
3. Put a pre-soaked bean seed into the cotton wool and cover with cotton wool.
4. Wet the cotton wool and place the container in a sunny place.
5. Wet the cotton wool a little every day and watch the bean grow.

2. Make sure you have pre-soaked the beans overnight before the lesson.
3. Read the instructions on the board to the learners.
   a. Explain that these instructions need to be carried out during this lesson, but that they need to come and water their beans during the week.
   b. Give each learner a pre-soaked bean seed. Show them how to place it in the cotton wool in their container.
4. Ask the learners if they have any questions. Provide answers where necessary.
5. After looking at the pictures on Resource 3, tell the learners to copy this table into their book:

6. Ask the learners to complete the first row of the table.
7. After seven days ask learners to complete the second row of the table.
8. Give learners some time to complete this task in their exercise books.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What does a seed need to start growing?
b. Why do you need to put your seed in wet cotton wool?

Answers to the checkpoint questions are as follows:

a. A seed needs water and sunlight to grow.
b. The cotton wool provides protection and water.
   You need to put your seed in cotton wool so that it gets water and does not dry out.

9. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Living things that appear to be non-living	7-11
Study & Master	'Dead' or 'Alive'	13-14
Day by Day	Some things appear not to be living	4-6
Platinum	Things that seem non-living can be alive	4-6
Viva	Living things that seem not to be living	5-6
Spot On	Some things appear not to be living	4
Oxford Successful	Living things that come to life	14-15
Shuter & Shooter	Living and non-living things	6-9
Sasol Inzalo Bk A	Some things seem to be non-living, but they are not!	15-17

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=JRc7FAHiNOo (1 min 24 sec) [Seed Dormancy]
2. https://www.youtube.com/watch?v=jmdtLfC1Gjk (2min 37 sec) [What is hibernation?]

2 B

Term 1, Week 2, Lesson B
Lesson Title: Non-living things
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Living and non-living things
CAPS Page Number	16

Lesson Objectives

By the end of the lesson, learners will be able to:

- Explain what a non-living thing is
- Compare the differences between living and non-living things.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting	✓	14. Designing	
3. Comparing		9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 5: Non-living things.	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.

2. Write the following question onto the chalkboard before the lesson starts:

What does a plant need to grow?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A plant needs soil, water and sunlight.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

NON-LIVING THINGS

1. Some things are not alive. They are non-living.
2. Examples of non-living things are: rocks, pencils, cars, hats.
3. They cannot carry out ALL of the seven life processes.
4. Some things used to be alive, but they have died and are now non-living.
5. Examples are logs and leaves on the floor. They used to be part of a tree.

2. Explain this to the learners as follows:
   a. We need to know that things that are not alive are called non-living.
   b. Using Resource 5, show the learners the examples of things that are non-living.
   c. Explain that none of these things will ever be alive. They cannot carry out all of the seven life processes.
   d. Show them that there are some things that used to be alive but are now dead.
   e. Explain that although a fire might look alive, and grow, move and breathe, it is non-living; it cannot carry out all seven life processes.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What is a non-living thing?

b. Why is a leaf from a tree a non-living thing?

Answers to the checkpoint questions are as follows:

a. A non-living thing is something that cannot do all seven life processes.

b. A leaf from a tree is a non-living thing because it cannot do all seven life processes.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

IDENTIFYING LIVING AND NON-LIVING THINGS

Object	Living	Non-Living	Reason
Rubbish Bin			
Fence			
Donkey			
Car			
Spider			
Rabbit			
River			

1. Copy the table into your books.
2. Put a tick in the correct column to show whether the object is living or non-living.
3. Discuss with a classmate the reason you made your choice. Write down your reason for your choice in the right-hand column.
4. Are all non-living things made by humans? Give two examples to explain your answer.

2. Ask the learners to copy the table into their books.
3. Read the instructions on the board to the learners.
   a. Explain how to draw and complete the table.
   b. Allocate learners into pairs to discuss their answers.
4. Ask the learners if they have any questions. Provide answers where necessary.

MODEL ANSWER:

IDENTIFYING LIVING AND NON-LIVING THINGS

Object	Living	Non-Living	Reason
Rubbish Bin		✓	Cannot do all of the life processes
Fence		✓	Cannot do all of the life processes
Donkey	✓		Performs all of the life processes
Car		✓	Cannot do all of the life processes
Spider	✓		Performs all of the life processes
Rabbit	✓		Performs all of the life processes
River		✓	Cannot do all of the life processes

Not all non-living things are made by humans. Rocks and rivers occur naturally.

5. Give learners some time to complete this task in their exercise books.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Why is a river a non-living thing?
b. An egg a non-living thing?

Answers to the checkpoint questions are as follows:

a. A river is a non-living thing because it does not do all seven life processes.
b. No, an egg is a living thing as a creature is growing inside.

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Non-living things	11-13
Study & Master	Non-living things	15-16

Day by Day	Non-living things	7-8
Platinum	Non-living things	8-9
Viva	Non-living things	6-10
Spot On	Non-living things	5
Oxford Successful	Non-living things	16-17
Shuter & Shooter	Non-living things	9
Sasol Inzalo Bk A	Non-living things	21-22

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=u_ImJJjjduU (2 min 17 sec) [Differences between living and non-living things]

TOPIC OVERVIEW:
Structure of Plants and Animals
Term 1, Weeks 2C – 4C

A. TOPIC OVERVIEW

Term 1, Weeks 2c – 4c

- This topic runs for 2 weeks.
- It is presented over 7 lessons.
- This topic's position in the term is as follows:

LESSON	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

LESSON	WEEK 6			WEEK 7			WEEK 8			WEEK 9			WEEK 10		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

B. SEQUENTIAL TABLE

GRADE 1 & 3	GRADE 4	GRADE 5
LOOKING BACK	**CURRENT**	**LOOKING FORWARD**
• Farm Animals and Wild Animals • Characteristics of insects • Life cycles of animals	• Basic structure of plants: roots, stems, leaves, flowers, fruits, seeds • Visible differences between plants: such as size, shape and colour of roots, stems, leaves, flowers, fruits and seeds • Basic structure of animals: head, tail, body, limbs, sense organs • Visible differences between animals: such as size, shape, body covering and sense organs	• There are many different plants and animals living in different habitats on earth • Plants and animals depend on each other • They also depend on the resources available • Life Cycles • Plants and animals grow and develop throughout their lives

C. SCIENTIFIC AND TECHNOLOGICAL VOCABULARY

Ensure that you teach the following vocabulary at the appropriate place in the topic:

	TERM	EXPLANATION
1.	structure	An arrangement of parts in a particular way
2.	anchored	To be held in place firmly
3.	absorb	To take in and be able to use something
4.	nutrients	Any substance that nourishes or feeds a living thing
5.	energy	Something that living things need in order to do what they need to do
6.	developing	growing
7.	conditions	Things like warmth, water, sunlight. What is needed for the living thing
8.	creeper	A plant that grows along the ground
9.	texture	How a surface feels and looks
10.	serrated	Having a notched edge like a knife
11.	organs	A structure in the body that does a certain job to keep the living thing alive
12.	skeleton	The bones of a living thing that form its shape
13.	visible	Something that can be seen with the eye
14.	body covering	The outer layers on the body of an animal

D. UNDERSTANDING THE USES / VALUE OF SCIENCE

The value of knowing that the basic structure of plants and animals. There is a value to being able to classify the differences between different types of plants, and between different types of animals.

E. PERSONAL REFLECTION

Reflect on your teaching at the end of each topic:

Date completed:	
Lesson successes:	
Lesson challenges:	
Notes for future improvement:	

2 C

Term 1, Week 2, Lesson C
Lesson Title: The basic structure of plants
Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	Structure of plants and animals
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain the basic structure of plants
- identify the various parts of plants, including roots, stems, leaves, flowers, fruits and seeds

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing	✓	8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing	✓	15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	✓
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 5: Hollow log	
Poster showing structure of plants	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Is the piece of wood on Resource 5 a living thing?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

No. It is no longer alive. It has no roots or leaves.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

STRUCTURE OF PLANTS

1. There are many different types of plants.
2. They come in many different shapes and sizes.
3. They have the same basic **structure**.
4. All plants have roots, stems and leaves.
5. Some plants also have flowers and fruits.

2. Explain and discuss the following with the learners:
   a. We need to know that there are many different types of plants on earth. They come in many different shapes and sizes but they have the same basic structure. Using Resource 6 and the poster for Term 1, show the learners the picture of the structure of a plant.
   b. Ask the learners to think about the flowers they have seen growing.
   c. Ask the learners about the features of the plants they have seen.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. Are all plants exactly the same?
b. Do all plants have the same basic structure?

Answers to the checkpoint questions are as follows:

a. No, there are many different types of plants.
b. Yes, all plants have the same basic structure.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

THE FUNCTION OF EACH PART OF THE PLANT

1. The roots grow under the ground and keep the plant **anchored**.
2. Roots **absorb** water and **nutrients** from the soil for the plant.
3. The stem grows above the ground and supports all of the leaves and buds.
4. Stems carry the nutrients and water from the roots to the rest of the plant.
5. Leaves use sunlight to provide the plant with **energy**.

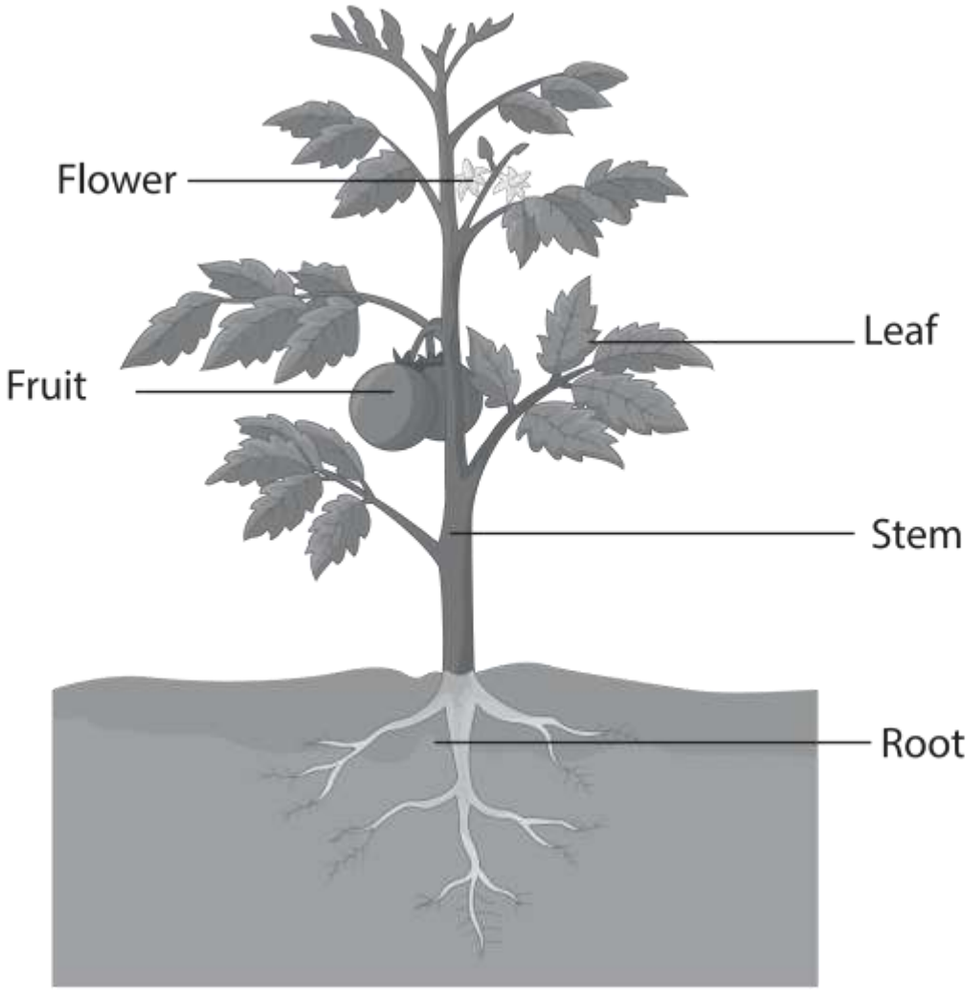
2. Read the information on the board to the learners.
   a. Explain that the basic part of every plant are the roots, stem and leaves.
   b. Explain that each part of the plant has a specific job to do for the plant.
3. Write the following onto the chalkboard (always try to do this before the lesson starts):

EXERCISE:

1. Draw a simple plant with a root, stem, leaves, a flower and a fruit.
2. Fill in the correct labels. 3. Give your picture a title.

4. Give learners some time to copy the above information from the chalkboard into their workbooks.

MODEL ANSWER:



5. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What parts of the plant do we find above ground?
b. What part of the plant do we find underground?

Answers to the checkpoint questions are as follows:

a. The stem, leaves, flowers and fruit are found above ground.
b. The roots of the plant are found underground.

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Structure of plants	17-18
Study & Master	Structure of plants	19-20
Day by Day	Structure of plants	11-12
Platinum	Structure of plants	12
Viva	Structure of plants	11
Spot On	Structure of plants	6
Oxford Successful	Structure of plants	18-19
Shuter & Shooter	Structure of plants	11
Sasol Inzalo Bk A	Structure of plants	30-34

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=s2r5LLy9Qaw (1 min 26sec) [The four parts of a plant]

3 A

Term 1, Week 3, Lesson A
Lesson Title: Other plant structures
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Structure of plants and animals
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain the purpose of the different parts of a plant
- explain why some plants have flowers and fruits.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 6: Plants	
Poster showing structure of plants	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What does the stem of a plant do?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

The stem of a plant supports everything of the plant above the ground and transfers water and nutrients from the roots to the rest of the plant.

2. Explain this to the learners as follows:

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

STRUCTURE OF PLANTS

1. Some plants produce flowers and fruit. The fruit contains seeds.
2. The fruit forms around the seeds and helps to protect and scatter them.
3. Fruit can be fleshy like an orange, or hard like a nut.
4. Inside the seed is a very small **developing** plant.
5. Once they are planted, in the right **conditions** they will grow.

a. We need to know that there are many different types of plants on earth. They come in many different shapes and sizes but they have the same basic structure. Using Resource 6, show the learners the picture of the structure of a plant.

b. Show the learners the flowers, fruits and seeds.

c. Tell the learners that in order for the plant to carry out the life process of reproduction, it needs to produce seeds that will grow into more plants.

3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What is the purpose of the fruit on a plant?
b. How does a plant reproduce?

Answers to the checkpoint questions are as follows:

a. Fruit grows around the seeds to protect them and helps them to be scattered.
b. A plant reproduces by making seeds. These can then be planted.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

QUESTIONS:

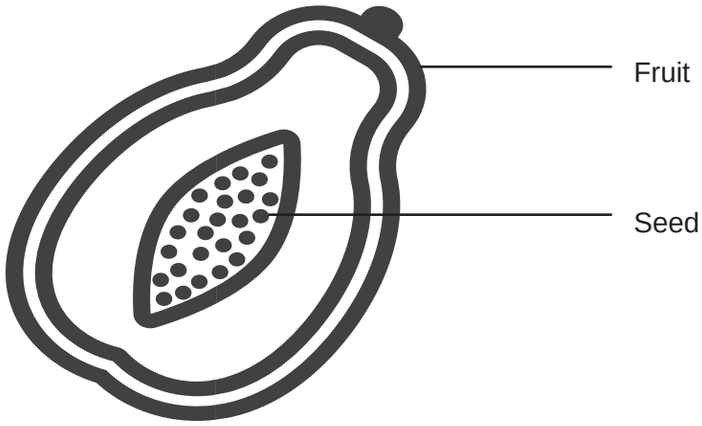
1. The _____ of a plant produces seeds that form new plants.
2. The _____ absorb sunlight and make food for the plant.
3. The _____ supports the plant and holds the leaves and the flowers upright. It also takes water and nutrients to the rest of the plant.
4. The _____ take in water and nutrients from the soil and hold the plant firmly in the ground.
5. Draw a picture of the inside of a fruit, including the seeds. Label it carefully.

2. Read the exercise on the board to the learners.
   a. Explain that the learners should copy down the exercise in their work books and then complete it.
   b. Explain that the learners should choose one word to complete each sentence.
   c. Ask the learners to draw a picture of the inside of a fruit. The learners should be reminded to label their drawing correctly and give it a title.
3. Ask the learners if they have any questions. Provide answers where necessary.
4. The model answer is:

ANSWERS

1. The flower of a plant produces seeds that form new plants.
2. The leaves absorb sunlight and make food for the plant.
3. The stem supports the plant and holds the leaves and the flowers upright. It also takes water and nutrients to the rest of the plant.

4. The roots take in water and nutrients from the soil and hold the plant firmly in the ground.
5.



Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Where are the seeds on a strawberry? (Look at the caption of the picture on the Resource.)
b. How does this make them different to other fruits?

Answers to the checkpoint questions are as follows:

a. The seeds on a strawberry are on the outside of the fruit.
b. Other fruits have their seeds inside the fleshy part.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Structure of plants	17-18
Study & Master	Structure of plants	19-20
Day by Day	Structure of plants	11-12
Platinum	Structure of plants	12
Viva	Structure of plants	11

Spot On	Structure of plants	6
Oxford Successful	Structure of plants	18-19
Shuter & Shooter	Structure of plants	11
Sasol Inzalo Bk A	Structure of plants	30-34

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=dJjNh2pMSB8 (2min 12sec) [From a seed to a flower]

3 B

Term 1, Week 3, Lesson B
Lesson Title: Differences in plants
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Structure of plants and animals	
CAPS Page Number	17	
Lesson Objectives By the end of the lesson, learners will be able to: • explain how to differentiate between different plants • explain why there are differences between plants.		
Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS					
1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	

5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 7: Plants	
Poster showing structure of plants	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is needed for a seed to start growing?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A seed needs water, light and soil.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

DIFFERENCES IN PLANTS

1. There are many different types of plants.
2. Not all plants look the same.
3. We can compare plants by size, shape and colour.
4. The roots, stems, leaves, flowers, fruits and seeds can also be different.

2. Explain this to the learners as follows:
   a. We need to know that there are many different types of plants on Earth. They can have different sizes, shapes and colours.
   b. The different parts of a plant can also have different sizes, shapes and colours.
   c. Using Resource 7, show the learners the pictures of different plants.
   d. Show the learners the roots, stems, leaves, flowers, fruits and seeds.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. Do all plants look the same?

b. How can a plant look different to another plant?

Answers to the checkpoint questions are as follows:

a. No, all plants look different.

b. A plant can look different to another plant because of its size, shape and colour.

E CONCEPTUAL DEVELOPMENT

1. Draw the following onto the chalkboard (always try to do this before the lesson starts):

COMPARING PLANTS

Plants	**1**	**2**	**3**	**4**
Is the stem big or small?				
Are the leaves big or small?				
What shape are the leaves?				
Are the flowers big or small?				
What colour are the flowers?				
Does the plant have fruit?				
Is the fruit big or small?				
What colour is the fruit?				

1. Look carefully at the plants in Resource 7.
2. Fill in the table which will help you find the differences between the plants.

2. Show the learners the pictures on Resource 7. Highlight the different parts of each of the plants.
3. Read through the exercise on the board to the learners.
   a. Explain that the learners should copy down the exercise in their workbooks and then complete it, using the pictures in Resource 7.
   b. Explain to the learners that they should pay special attention to the size, shape and colour of the plants and its parts.

4. Ask the learners if they have any questions. Provide answers where necessary.

5. A model answer is:

TABLE

Plants	1	2	3	4
Is the stem big or small?	small	big	small	big
Are the leaves big or small?	big	big	small	Big
What shape are the leaves?	long and narrow	arrows	long and slim	oval
Are the flowers big or small?	small	big	small	small
Does the plant have fruit?	no	no	no	yes
Is the fruit big or small?	-	-	-	big

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Do all plants have the same size roots?
b. What other differences can there be between plants?

Answers to the checkpoint questions are as follows:

a. No, all plants have different roots.
b. There are many things that can differ including leaves, flowers, fruits and size.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Visible differences between different plants	21-23
Study & Master	Visible differences between plants	20-21
Day by Day	Visible differences between plants	13-14
Platinum	Differences between plants	14-15
Viva	Structure of plants	12-14
Spot On	Differences in plants	7

Oxford Successful	Visible differences between plants	20-21
Shuter & Shooter	Comparing plants	14-15
Sasol Inzalo Bk A	Structure of plants	40-43

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=PwwmxCZjFdQ (2min 09sec) [Comparing plants]

3 C

Term 1, Week 3, Lesson C
Lesson Title: Plants are not the same
Time for lesson: 1½ hours

POLICY AND OUTCOMES

opic	Structure of plants and animals
Page Number	17

n Objectives

end of the lesson, learners will be able to:

identify the differences between three plants

explain why the plants are different according to their parts.

ic	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

NCE PROCESS + DESIGN SKILLS

essing & Recalling ormation	✓	7. Raising Questions		13. Interpreting Information	✓
serving		8. Predicting		14. Designing	
mparing	✓	9. Hypothesizing		15. Making/ constructing	
asuring		10. Planning Investigations		16. Evaluating and improving products	
ting & Classifying		11. Doing Investigations	✓	17. Communicating	
ntifying problems & ues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 8: Different parts of plants	Different leaves and flowers

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

How can you tell the difference between plants?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

All plants have different sizes, shapes and colours.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

VISIBLE DIFFERENCES IN PLANTS

1. Trees have stems that are thick and hard. They are called trunks.
2. Some stems do not grow upright but crawl along the ground like a **creeper**.
3. Some plants have one thick straight root. Other plants have thin roots that spread out.
4. Some plants have lots of very small flowers. Some plants only have one big flower at a time. Flowers attract living things to the plant to help spread seeds.
5. Leaves can have a smooth or rough **texture**. The edges can be **serrated** or uneven.
6. Flowers and seeds have different sizes, shapes and colours.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. How can leaves be different from one plant to another?
b. What is the stem of a tree called?

Answers to the checkpoint questions are as follows:

a. Leaves can have different shapes, sizes and colours.
b. The stem of a tree is called a trunk.

E CONCEPTUAL DEVELOPMENT

1. Write the following on the onto the chalkboard:

PRACTICAL TASK

Table 1

Leaf 1 drawing	Leaf 2 drawing	Leaf 3 drawing

Table 2

Leaf rubbing
Describe the texture of the leaf:

2. Explain this to the learners as follows:
   a. We need to understand that each part of the plant can be different in many ways.
   b. Stems and roots are not always the same.

c. The leaves can be different shapes and textures. The flowers also can have different shapes and colours and sizes.

d. Using Resource 8, show the learners the pictures of different plants.

3. Give learners some time to copy the above information from the chalkboard into their workbooks.

2. Tell the learners to do the following:

   Working in pairs:

   a. Go into the school yard and collect 3 DIFFERENT types of leaves.
   b. DO NOT damage the plants unnecessarily.
   c. Be back in the classroom in 2 minutes.

3. When the learners have returned to class, explain Activity 1 to them. (You can write this onto the chalkboard).

Activity 1

a. Draw table 1 from the chalkboard into your workbook.
b. Use a sharp pencil to draw each leaf as accurately as possible.
c. Draw a different leaf in each block.
d. Make sure that you show the following accurately in each drawing:
   - size
   - shape with detailed edges
   - veins
e. You will get one mark for showing each of these in each of your drawings. You will also get a mark if your drawings are neat and accurate. (4 x ½) x 3 = 6 marks

4. Then explain Activity 2. (You can write this onto the chalkboard)

Activity 2

a. Draw table 2 from the chalkboard into your workbook.
b. Choose one leaf for this activity.
c. Put the leaf underneath the page where you have drawn table 2.
d. The leaf should be vein side up.
e. Rub your pencil over the top of the paper to get a print of the leaf to show through. Make sure you show:
   - The whole shape and edges
   - The veins
f. You will also get one mark for neat and accurate work.
g. Feel the surface of the leaf. In the space provided, describe the texture of the leaf. (4 x ½) = 2 marks

5. Then explain Activity 3. (You can write this on the chalkboard).
6. The learners will go into the school yard for this activity.

Activity 3

a. Do a basic outine drawing of a tree.
b. Your drawing should be at least half a page in size.
c. Use a sharp pencil to do your drawing.
d. Include the following labels:
   - leaves
   - branch
   - roots (4 x ½) = 2 marks

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Visible differences between different plants	21-23
Study & Master	Visible differences between plants	20-21
Day by Day	Visible differences between plants	13-14
Platinum	Differences between plants	14-15
Viva	Structure of plants	12-14
Spot On	Differences in plants	7
Oxford Successful	Visible differences between plants	20-21
Shuter & Shooter	Comparing plants	14-15
Sasol Inzalo Bk A	Structure of plants	40-43

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=rKQBBrDV568 (2min 54sec) [Preserving leaves and flowers]

4 A

Term 1, Week 4, Lesson A
Lesson Title: Structure of animals
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Structure of plants and animals
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain the basic structure of an animal
- identify the basic parts of an animal including head, tail, body, limbs, sense organs.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 9: Animals head and sense organs	
Poster showing structure of animals	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What are the four main parts of all plants?

3. Learners should enter the classroom and answer the question in their workbooks.

4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

The four main parts of a plant are the roots, stem, leaves and flower.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

STRUCTURE OF ANIMALS

Many animals have:

1. A head
2. A body
3. Limbs (legs or arms)
4. Sense organs
5. Some animals also have tails.

2. Explain this to the learners as follows:
   a. We need to know that there are many different types of animals on earth. They come in many different shapes and sizes but they have the same basic structure.
   b. Using Resource 9 and the poster for Term 1, show the learners the pictures of the structure of an animal.
   c. Point out the head, body, limbs, sense organs, and tail.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What parts do all animals usually have?
b. Which one part do only some animals have?

Answers to the checkpoint questions are as follows:

a. Animals usually have a head, a body, limbs and sense organs.
b. Only some animals have tails.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

THE HEAD AND THE SENSE ORGANS

1. The brain is in the head which is protected by the skull.
2. Many of the sense organs of the animal are also in the head.
3. The sense organs are the eyes, the nose, the mouth, and the ears.
4. The skin which covers the whole body is also a sense organ.
5. The sense organs send messages to the brain about what is happening outside the body.

2. Read the information on the board to the learners.
   a. Explain that all animals have heads. These are very important to each animal. The brain which controls the animal is in the head, inside the skull.
   b. The skull is a hard, bony casing that protects the brain and shapes the structure of the head.
   c. All animals get information about what is happening around them through their sense organs.
   d. The sense organs are the eyes, the nose, the mouth, the ears, and the skin.
3. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Where is the brain in an animal?
b. What are the five sense organs on an animal?

Answers to the checkpoint questions are as follows:

a. The brain is inside the skull in the head of an animal.
b. The sense organs are the eyes, the nose, the mouth, the ears, and the skin.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Structure of animals	23-29
Study & Master	Structure of animals	23-25
Day by Day	Structure of animals	15-16
Platinum	Structure of animals	16-17

Viva	Structure of animals	16-17
Spot On	Structure of animals	8
Oxford Successful	Structure of animals	22-23
Shuter & Shooter	Structure of animals	16-17
Sasol Inzalo Bk A	Structure of animals	48-61

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. http://www.teachertube.com/video/animal-structure-and-survival-functions-240713 (2 min 57sec) [Animal structure and survival functions]

4 B

Term 1, Week 4, Lesson B
Lesson Title: The function of structure
Time for lesson: 1 hour

POLICY AND OUTCOMES	
Topic	Structure of plants and animals
S Page Number	17

on Objectives

e end of the lesson, learners will be able to:

lentify the parts of an animal

xplain the purpose of the body, limbs and tails for animals.

ic	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

NCE PROCESS + DESIGN SKILLS

essing & Recalling ormation	✓	7. Raising Questions		13. Interpreting Information	✓
serving	✓	8. Predicting		14. Designing	
mparing	✓	9. Hypothesizing		15. Making/ constructing	

4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 10: Animals: bodies, limbs and tails	
Poster showing structure of animals	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Where is the skull in an animal?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

The skull is in the head of an animal.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

PARTS OF ANIMALS

1. The body in most animals is given shape by the **skeleton**.
2. Limbs like legs or arms help the animals move around. 3. Limbs are fins on fish, wings on birds, legs on animals.
4. Tails are on the opposite end to the head.
5. Tails have many different uses. Monkeys use their tails differently to cats.

2. Explain this to the learners as follows:
   a. There are many different types of animals on earth. They come in many different shapes and sizes but they have the same basic structure.
   b. Using Resource 10 and the poster for Term 1, show the learners the pictures of the structure of an animal. Tell the learners the following:

- The body contains the organs of the animal; like the heart, lungs and stomach.
- The limbs (arms and legs) help the animal to move around.
- Not all animals have tails, and not all tails are the same.

3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What are the limbs on a fish called?
b. What gives the body of most animals its shape?

Answers to the checkpoint questions are as follows:

a. The limbs on a fish are called fins.
b. Its shape is given by the skeleton.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

THE BODY, LIMBS AND TAILS

Draw, label and describe the parts of an animal.

1. Draw a large clear picture of a fish in pencil in your workbook.
2. Label its five main parts.
3. Write one sentence to describe each part of the fish.
4. Draw a large clear picture of a lion in your workbook.
5. Label its five main parts.

2. Read the information about the task on the board to the learners.
   a. Explain that all animals have bodies, limbs and some have tails.
   b. Tails are used for different things. Birds use their tails to help them steer where they are going. Monkeys use their tails to hold on to branches. Giraffe use their tails to swish at annoying insects.
3. Show the learners the pictures on Resource 10.
   a. Show them the fish and the lion.
   b. Ask the learners to copy down the task off the board and to draw the two animals.
   c. The learners need to label the five main parts on their drawings carefully.

4. A model answer is:

THE BODY, LIMBS AND TAILS

1. The drawing will show a fish of the learner's choice.
2. Labels should show the head, the body, the fins, the tail and should show the eyes and mouth as sense organs.
3. The head is pointy to help the fish get through the water.
   The body is smooth to help water slide across it.
   The fins are shaped like scoops to help the fish swim.
   The tail is big to help the fish push through the water.
   The eyes are on the side of the head.
   The mouth is on the bottom of the head.
4. A lion will be drawn by the learners.
5. Labels should show the head, the body, the legs, the tail and should show the eyes, ears, nose and mouth as sense organs.

4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What kind of covering do birds have on their bodies?
b. What kind of covering do dogs have on their bodies?

Answers to the checkpoint questions are as follows:

a. Birds are covered in feathers.
b. Dogs are covered in fur.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Structure of animals	23-29
Study & Master	Structure of animals	23-25
Day by Day	Structure of animals	15-16
Platinum	Structure of animals	16-17
Viva	Structure of animals	16-17

Spot On	Structure of animals	8
Oxford Successful	Structure of animals	22-23
Shuter & Shooter	Structure of animals	16-17
Sasol Inzalo Bk A	Structure of animals	48-61

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=3So7OMwNgy8 (2 min 29sec) [How do birds fly?]
2. https://www.youtube.com/watch?v=yqzVI0CSKCU (2 min 49sec) [Swing through the trees with amazing spider monkeys]

4 C

Term 1, Week 4, Lesson C

Lesson Title: Visible differences between animals

Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	Structure of plants and animals
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- describe the visible differences between animals
- explain the benefits of the different parts for animals.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	

4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations	✓	17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 9: Animals head and sense organs	
Resource 10: Animals head and sense organs	
Resource 11: Size, shape, body coverings	
Poster showing structure of animals	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Why do animals have limbs?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Animals have limbs to help them move around.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

VISIBLE DIFFERENCES BETWEEN ANIMALS

1. Animals have different sizes, shapes, **body coverings**, and sense organs.
2. Some animals are big and some are small.
3. Animals have different shapes. A giraffe has a long neck and long legs, but an impala has a short neck and short legs.
4. The bodies of animals are covered with different things. Fish have scales, birds have feathers, cats have fur, elephants have a thick, tough skin.

2. Explain this to the learners as follows:
   a. There are many different types of animals on earth. They come in many different shapes and sizes.

b. Tell the learners that they need to be able to recognise the differences between animals. Using their knowledge of the basic structure of animals, they can compare sizes and shapes to identify different animals.
c. Read through the information on the board with the learners.
d. Using Resources 9, 10 and 11, show the learners the pictures of different animals. Ask the learners to identify the different parts of animals and to compare animals.

3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What is the body covering on a fish called?
b. Do a cat and an elephant have the same skin?

Answers to the checkpoint questions are as follows:

a. The body of a fish is covered in scales.
b. No, a cat and an elephant have different skin. A cat's skin is thin and covered in fur, and an elephant has a skin which is very thick and tough.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

DIFFERENT SENSE ORGANS

1. The sense organs differ from animal to animal.
2. Elephants have big ears, while birds have very small openings covered with feathers.
3. A spider's eyes are on top of its head, while animals have eyes on the side of their head.
4. A bird's **nostrils** appear on top of its beak. An elephant has a long trunk for a nose.
5. A spider uses the hairs on its body for feeling and sensing.

2. Read the information about the task on the board to the learners.
   a. Explain that all animals have differently shaped sense organs. If hearing is important, their ears will be shaped to catch a lot of sound. If seeing is important, their eyes will be able to see clearly.
   b. The sense organs can be different shapes, sizes and in different positions on an animal's head.
3. Write the following onto the chalkboard (always try to do this before the lesson starts):

VISIBLE DIFFERENCES BETWEEN ANIMALS

Animal	Size	Shape	Body covering	Sense organs
Elephant	Large	Four legs, small tail and trunk	Tough and leathery	Two eyes, two ears, nose and tongue
Bird				
Fish				
Giraffe				

4. Show the learners the pictures on Resources 9, 10 and 11.
   a. Show the learners where the sense organs are on each animal.
   b. Ask the learners to draw the table in their workbooks and complete the exercise. (The details for the elephant have been filled in already as an example.)
5. A model answer is:

VISIBLE DIFFERENCES BETWEEN ANIMALS

Animal	Size	Shape	Body covering	Sense organs
Elephant	Large	Four legs, small tail and trunk	Tough and leathery	Two eyes, two ears, nose and tongue
Bird	Very small	Two legs, two wings	Feathers	Two eyes, two ear openings, nostrils
Fish	Small	Fins and strong tail	Scales	Two eyes and mouth
Giraffe	Large	Four legs, tail and long neck	Skin with hair	Two eyes, two ears, nose and tongue

5. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Where are the eyes on a spider?
b. What are two uses for a tail on animals? (Only taught in 4B. Can knowledge from previous lessons be questioned?)

Answers to the checkpoint questions are as follows:

a. The eyes on a spider are on top of its head.
b. The tail could be used for balance, holding on, or swatting away annoying insects. (Should balance have been taught previously?)

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Visible differences between animals	24-29
Study & Master	Visible differences between animals	25
Day by Day	Visible differences between animals	17-18
Platinum	Differences between animals	18-20
Viva	More visible differences between animals	18-20
Spot On	Differences in animals	9-10
Oxford Successful	Visible differences between animals	24-25
Shuter & Shooter	Comparing animals	17-18
Sasol Inzalo Bk A	Structure of animals	48–61

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=dN_au2KHffk (2min) [Animal similarities and differences]

TOPIC OVERVIEW:
What plants need to grow
Term 1, Weeks 5A – 5C

A. TOPIC OVERVIEW

Term 1, Weeks 5a – 5c

- This topic runs for 1 week.
- It is presented over 3 lessons.
- This topic's position in the term is as follows:

LESSON	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

LESSON	WEEK 6			WEEK 7			WEEK 8			WEEK 9			WEEK 10		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

B. SEQUENTIAL TABLE

GRADE 1 & 3	GRADE 4	GRADE 5
LOOKING BACK	**CURRENT**	**LOOKING FORWARD**
• What plants look like – roots, stems, leaves, flowers • What plants need to grow • Growing a plant from a seed – bean or lentil • How seasons affect growing things – sowing, growing and harvesting • Soil for the growth of plants; the value of growing vegetables	• Plants need light, water and air to grow • New plants can grow from cuttings and seeds • Seeds need water and warmth to grow (germination of seeds)	• There are many different plants and animals living in different habitats on earth • They also depend on the resources available • Life Cycles • Plants and animals grow and develop throughout their lives

C. SCIENTIFIC AND TECHNOLOGICAL VOCABULARY

Ensure that you teach the following vocabulary at the appropriate place in the topic:

	TERM	EXPLANATION
1.	wilt	To become limp and hang from lack of water
2.	droop	To sag or hang down from lack of support
3.	germination	The process by which a seed turns into a plant
4.	cutting	A piece cut from a parent plant that will grow into a new plant
5.	succulents	A plant that has fleshy, juicy leaves or stems
6.	node	A joint in a stem, which normally produces a leaf

D. UNDERSTANDING THE USES / VALUE OF SCIENCE

The value of knowing what the right conditions are required for plants to grow. There is a value to being able to identify the correct seasons for planting, and the correct way to plant seeds or to grow cuttings, and to have knowledge of the transformation of a seed to a plant.

E. PERSONAL REFLECTION

Reflect on your teaching at the end of each topic:

Date completed:	
Lesson successes:	
Lesson challenges:	
Notes for future improvement:	

5 A

Term 1, Week 5, Lesson A
Lesson Title: Conditions for growth
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	What plants need to grow
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- identify the best conditions for plant growth
- explain what a plant needs to grow.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions	✓	13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing	✓	15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information			

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 12: Plant health	

CLASSROOM MANAGEMENT

C

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What are the four main parts that make up the structure of a plant?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

The four main parts of a plant are the roots, the stem, the leaves and the flowers.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

WHAT PLANTS NEED TO GROW

1. A healthy plant that has everything it needs will have green leaves.
2. Plants get what they need from the places in which they live.
3. When plants do not get enough water, their leaves **wilt** or **droop**. They absorb the water through their roots.
4. Plants take in carbon dioxide from the air around them. They give off oxygen.
5. Plants need light from the sun to turn the water and nutrients from the soil into food which helps it to grow.

2. Explain and discuss the following with the learners:
   a. We need to know that there are certain things that all plants need to be healthy: warmth, light, water and air.
   b. If it is too cold plants will not grow. Plants use the light from the sun to turn the water and nutrients into food so that they can grow.
   c. Plants use the carbon dioxide in the air to make food, and give off oxygen which animals and people need to live.
3. Show the learners Resource 12. Ask them to compare the differences between the two plants.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What gas do plants need from the air to grow?
b. What gas do plants give off that animals need to live?

Answers to the checkpoint questions are as follows:

a. Plants need carbon dioxide from the air to grow.
b. Plants give off oxygen which is vital for animals.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

CONDITIONS FOR GROWTH

Copy and complete these sentences about what plants need to grow:

1. Plants that do not get enough ____ will have weak stems and dried leaves.
2. Plants need _____ so they can make food to help them grow.
3. Plants grow best when it is not too hot or too _____.
4. Plants need _____ because they are living things.
5. What are the best conditions for most plants to grow?

2. Read the questions on the board to the learners.
   a. Explain to the learners that they need to copy the sentences into their workbooks and to fill in the missing words in the sentences.
   b. Tell the learners they should consider the answers carefully.
   c. Answer question 5 in their own words.
3. Give learners some time to copy the above information from the chalkboard into their workbooks and do the exercise.

MODEL ANSWER:

1. Plants that do not get enough water will have weak stems and dried leaves.
2. Plants need sunlight so they can make food to help them grow.
3. Plants grow best when it is not too hot or too cold.
4. Plants need air because they are living things.
5. The best conditions for most plants to grow is where it is not too cold, there is plenty of sunlight and air flow, and where the right amount of water in the soil is present.

4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What do plants need to grow?
b. What happens if plants do not get enough warmth?

Answers to the checkpoint questions are as follows:

a. Plants need sunlight, warmth, water and air to grow.
b. Plants that do not get enough warmth do not grow properly.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Conditions for growth	33-34
Study & Master	Conditions for growth	26
Day by Day	Conditions for growth	21-22
Platinum	Conditions for growth	24-25
Viva	Conditions for growth	21-23
Spot On	Conditions for growth	11
Oxford Successful	Conditions for growth	26
Shuter & Shooter	Conditions for growth	20
Sasol Inzalo Bk A	Conditions for growth	66-68

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=cwwlm3CrRjY (2 min 59sec) [What do plants need to grow?]

5 B

Term 1, Week 5, Lesson B
Lesson Title: New Plants
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	What plants need to grow
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain how plants grow from cuttings and seeds
- identify the right conditions to grow cutting and seeds.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing	✓	8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 13: Germination	
Real examples of plants	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Why does a plant need sunlight?

3. Learners should enter the classroom and answer the question in their workbooks.

4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A plant needs sunlight to convert water and nutrients into food which they use to grow.

ACCESSING INFORMATION

D

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

NEW PLANTS

1. Seeds are dormant new plants in a little package waiting to grow.
2. Once planted, seeds use water and warmth to start growing.
3. The coat of the seed splits open and a little root grows out.
4. A stem grows upwards and leaves begin to grow and open.
5. **Germination** is the process in which a seed comes to life.

2. Explain this to the learners as follows:
   a. We need to know that we can grow plants from seeds.
   b. Show the learners Resource 13, containing the picture of the germination of a seed.
   c. Show the learners the different stages of the growing seed by referring to the notes on the chalkboard.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What is germination?
b. What does a seed need to germinate?

Answers to the checkpoint questions are as follows:

a. Germination is the process in which a seed comes to life.
b. A seed needs water and warmth to germinate.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

CUTTINGS

1. If you cut a piece of a geranium or a rose plant and put it in soil, it will grow new roots.
2. The piece of stem that is cut is called a stem **cutting**.
3. **Succulents**, shrubs and plants with woody stems can grow from cuttings.
4. You need to cut just below the **node** (a bump on the stem). This contains a substance that will help the plant grow new roots.

2. Read the information on the board to the learners.
   a. Explain that if we want to grow a plant from a stem cutting, we need to cut off a piece of stem just below a node. Roots will grow from here to form a new plant.
   b. The cutting can be planted into damp soil, or put into a container of water. Once the roots have grown, the plant can be transferred into the ground.
3. Ask the learners if they have any questions. Provide answers where necessary.
4. Write the following onto the chalkboard (always try to do this before the lesson starts):

EXERCISE:

Using your notes, complete the table showing the stages of growth of a seed.

	Seed:
Stage 1	plant seed in damp soil
Stage 2	
Stage 3	
Stage 4	
Stage 5	leaves begin to grow and open

5. Give learners some time to write the information on the chalkboard into their workbooks.

MODEL ANSWER

Using your notes, complete the table showing the stages of growth of a seed.

	Seed:
Stage 1	plant seed in damp soil
Stage 2	seed skin splits
Stage 3	root grows out
Stage 4	stem begins to grow upwards
Stage 5	leaves begin to grow and open

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What is a stem cutting?

b. Can you give one example of a plant that will grow from a cutting?

Answers to the checkpoint questions are as follows:

a. A stem cutting is a piece of the stem of a plant that will grow if planted.

b. Any one from: succulents, shrubs, geraniums, roses, rosemary, lavender.

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	New plants can grow from seeds	35-40
Study & Master	New plants can grow from cuttings and seeds	27-30
Day by Day	New plants can grow from cuttings	23-25
Platinum	Plants grow from cuttings	26-27
Viva	Conditions for growth	21-24
Spot On	New plants can grow from seeds	12-13
Oxford Successful	New plants can grow from cuttings	26-27
Shuter & Shooter	New plants can grow from seeds	21-23
Sasol Inzalo Bk A	Growing new plants	68-70

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=XRxoSDbpv-g (3min 30sec) [Plants you can grow from cuttings and leaves]
2. https://www.youtube.com/watch?v=eKo5F87A8a0 (2min 15sec) [Sunflower seeds germination and growth time lapse]

5 C

Term 1, Week 5, Lesson C Lesson
Title: Germination
Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	What plants need to grow
CAPS Page Number	17

Lesson Objectives

By the end of the lesson, learners will be able to:

- grow a plant from a seed and a cutting
- describe the process of germination in a seed.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations	✓	16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations	✓	17. Communicating	✓
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Bean seedlings from Topic 1	
Pre-soaked bean seeds	
Stem cutting from a geranium plant or similar	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is germination?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Germination is the process of a seed becoming a plant.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

INVESTIGATING HOW SEEDS GROW

1. You will need: a small clear plastic bag (zip lock) or an empty container, soil to almost fill the bag or container, seedlings from topic one, water, a ruler.
2. Put one handful of soil in the clear plastic bag and then fill the container halfway with this soil.
3. Plant the seedling in the soil.
4. Water lightly.
5. Tape the plastic bag to a window in the classroom. Or place the container in a sunny spot.
6. Water lightly each day.
7. Copy this table below into your workbooks. Write down what you see each day in this table.

Day	Observations	Length of stem	Number of leaves
1	Seedlings planted		
2			
3			
4			

2. Make sure to have bean seedlings from Topic 1 in class, or soak bean seeds in water for 24 hours before this lesson.
3. Explain this to the learners as follows:
   a. Earlier in the term we investigated seeds when we grew a bean seed. Now we are going to continue our investigation into how the bean seed grows.

a. Those learners who do not have a seedling can start again with new, soaked bean seeds.

4. Ask the learners to copy the information from the board into their workbooks. Their table needs to have at least 14 spaces for information to be entered.
5. Give learners some time to copy the above information from the chalkboard into their workbooks.
6. Tell the learners to follow the steps they have just written down and plant their seedlings or seeds. Once the seeds are planted, place the containers in a sunny or bright place in the classroom, or tape the plastic bags on the window.
7. Importantly, you as the teacher need to remind the learners to lightly water their seedlings every day. The learners should also measure and write down the changes in the table in their books.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What does a plant need to live?
b. Where is the best place for the containers with the seedlings to be placed?

Answers to the checkpoint questions are as follows:

a. A plant needs sunlight, warmth, water and air.
b. The best place for the containers to be placed is in a spot where the plants have sunlight and air.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

GROWING A PLANT FROM A CUTTING

1. You will need: scissors, a stem cutting from a parent plant, e.g. a rose, geranium or nasturtium, a plastic bottle, water.
2. Carefully cut the plastic bottle in half.
3. Fill the bottom half of the bottle with water.
4. Take a cutting from the parent plant, remove the leaves near the bottom of the cutting.
5. Place the cutting in the water.
6. Put it in a bright airy spot in the classroom.
7. Keep adding fresh water each week.
8. Watch for the roots to grow from the bottom.

2. Read the information on the board to the learners.
   a. Explain that if we want to grow a plant from a stem cutting, we need to cut off a piece of stem just below a node. Roots will grow from there to form a new plant.
   b. The cutting can be planted into damp soil, or put into a container of water. Once the roots have grown the plant can be transferred into the ground.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Tell the learners to follow the steps they have just written down and place their cuttings in their containers.
5. Importantly, you as the teacher need to remind the pupils to lightly water their cuttings every day. Once they have grown roots, encourage the learners to plant their cuttings in the ground at home.
6. Write the following onto the chalkboard (always try to do this before the lesson starts):

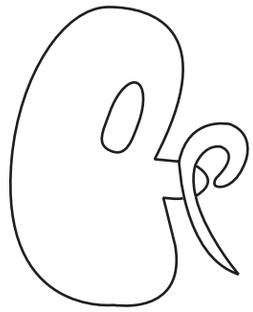
EXERCISE

1. Draw four clear stages of the germination process.
2. Use the following headings as your guide: seed skin splits, small root grows out, stem grows upwards, leaves grow and open.
3. Write a label for each drawing.

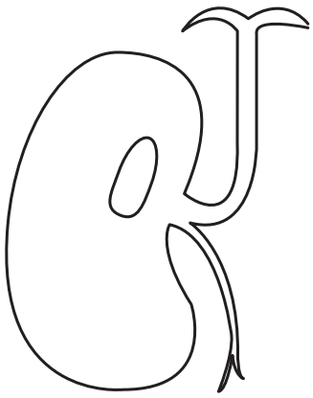
7. Give learners some time to copy the above information from the chalkboard into their workbooks, and complete the exercise.

MODEL ANSWER

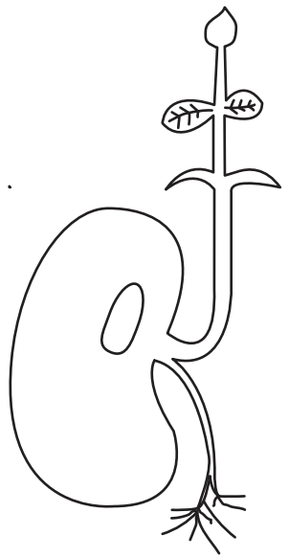
Seed skin splits



Small root grows out



Stem grows upwards



Leaves grow and open

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Where should you cut the stem for a cutting?
b. What are the little white bumps that will grow from the bottom of the cutting?

Answers to the checkpoint questions are as follows:

a. You should cut the stem just below a node for a cutting.
b. The little white bumps that will grow from the bottom of the cutting are new roots.

8. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	New plants can grow from seeds	35-40
Study & Master	New plants can grow from cuttings and seeds	27-30
Day by Day	New plants can grow from cuttings	23-25
Platinum	Plants grow from cuttings	26-27
Viva	Conditions for growth	21-24
Spot On	New plants can grow from seeds	12-13
Oxford Successful	New plants can grow from cuttings	26-27
Shuter & Shooter	New plants can grow from seeds	21-23
Sasol Inzalo Bk A	Growing new plants	68-70

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=Z-iPp6yn0hw (2 min 23sec) [Time-lapse of sunflower from seed to flower]
2. https://www.youtube.com/watch?v=oDBX2gCXxYw (1 min 34sec) [Germination of a seed]

TOPIC OVERVIEW:
Habitats of animals
Term 1, Weeks 6A – 7C

A. TOPIC OVERVIEW

Term 1, Weeks 6a – 7c

- This topic runs for 2 weeks.
- It is presented over 6 lessons.
- This topic's position in the term is as follows:

LESSON	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

LESSON	WEEK 6			WEEK 7			WEEK 8			WEEK 9			WEEK 10		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

B. SEQUENTIAL TABLE

GRADE 1 & 3	GRADE 4	GRADE 5
LOOKING BACK	**CURRENT**	**LOOKING FORWARD**
• Animals and creatures that live in water • Fresh water – river, e.g. fish, crocodile; ponds and dams, e.g. frog, dragonfly • Salt water – sea, e.g. shark, crayfish; rock pools, e.g. starfish, crab	• A habitat is where a plant or animal lives • There are different habitats such as grassland, forest, river, sea. • Animals need a habitat for food, water, a place to shelter, have babies and escape from dangers.	• There are many different plants and animals living in different habitats on earth. • They also depend on the resources available. • Life Cycles

C. SCIENTIFIC AND TECHNOLOGICAL VOCABULARY

Ensure that you teach the following vocabulary at the appropriate place in the topic:

	TERM	EXPLANATION
1.	habitat	A place where a plant or an animal lives
2.	predator	An animal that hunts and eats other animals
3.	mate	To pair up with another animal to have babies
4.	vegetation	All the plants and plant life in a place
5.	grassland	An area where the plants are almost all grasses
6.	grazer	An animal that eats grass
7.	camouflaged	To be hidden because it (an animal, etc) makes it look the same as the things around it
8.	prey	An animal that is being hunted for food
9.	forest	A large area of land mostly covered with trees
10.	barbel	A type of catfish that eats small animals
11.	adapted	Special structures or features which help a living thing to live in a habitat
12.	ambush	Hide from and then catch prey by surprise

D. UNDERSTANDING THE USES / VALUE OF SCIENCE

The value of knowing that each animal and plant requires a set of specific circumstances, e.g. the weather, in order to live and survive. The plants that grow in a habitat will determine which animals are found there. There is a value to being able to identify the different sets of conditions and areas in the world that are suitable for certain types of animals and plants.

E. PERSONAL REFLECTION

Reflect on your teaching at the end of each topic:

Date completed:	
Lesson successes:	
Lesson challenges:	
Notes for future improvement:	

6 A

Term 1, Week 6, Lesson A
Lesson Title: Habitats
Time for lesson: 1½ hours

A	POLICY AND OUTCOMES

Sub-Topic	Habitats of Animals
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain what a habitat is
- explain the need for habitats.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting	✓	14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 14: Habitats	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What do living things need to survive?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Living things need water, sunlight, warmth and food to survive.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

HABITATS

1. The place where a plant or an animal lives is called its **habitat**.
2. Plants and animals are suited to live and survive in certain habitats.
3. Animals and plants need water, food, shelter, and space to live.
4. Plants will grow in habitats that suit their needs best.
5. In a habitat, plants and animals all depend on each other to survive.

2. Explain this to the learners as follows:
   a. We need to know that there are places in the world that are best suited for certain animals. For example: a polar bear needs the cold as it cannot survive in a hot place. A rhino needs a warm place and would not be able to survive in a place where there is snow and ice; there would be no food.
   b. How hot or cold it is in a habitat determines what sort of plants will grow there. The plants that do grow provide food only for animals that like to eat those plants.
3. Show the learners Resource 14. Ask them to compare the differences between the two habitats. Look at the trees and plants. Discuss which animals might prefer each habitat.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point: a. What is a habitat?

b. What do animals need in their habitats?

Answers to the checkpoint questions are as follows:

a. A habitat is the place where an animal or plant lives.
b. Animals need water, food, shelter and space.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

DIFFERENT HABITATS

1. Different animals need different habitats.
2. Most animals can only live in one or two different habitats. Some habitats are too cold or too hot for certain animals.
3. Animals must be able to find food and water in their habitat.
4. Animals must be able to find protection in their habitat from **predators**.
5. Animals must be able **mate** with another animal to have babies.

2. Read the information on the board to the learners.
   a. Explain to the learners that animals need to be comfortable and safe in their habitats. If the weather is too hot and their coat is too thick, the animal will overheat. If the weather is too cold and their coat is too thin, the animal will freeze to death.
   b. Animals must be able to find a mate to have babies. The conditions must be right for the babies to grow up.
   c. Animals need certain things to survive; you would not be able to find a shark in a grassy habitat.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Will an animal from a hot habitat find a mate in a cold habitat?
b. Why would you not find a shark in a grassy habitat?

Answers to the checkpoint questions are as follows:

a. No, animals will stay in the habitats that suit them.
b. A shark needs to be in sea water to survive.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Different Habitats	43-44
Study & Master	Different Habitats	35-36
Day by Day	Different Habitats	29
Platinum	Different habitats	32
Viva	Different Habitats	25
Spot On	Different Habitats	14
Oxford Successful	Different Habitats	30-31
Shuter & Shooter	Different Habitats	25-26
Sasol Inzalo Bk A	Habitats of animals and plants	82

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=p15IrEuhYmo (4min 41sec) [Home sweet habitat]

6 B

Term 1, Week 6, Lesson B

Lesson Title: Grassland habitat

Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Habitats of Animals
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain what a grassland habitat is
- explain which plants and animals live in a grassland habitat.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 15: Grassland habitat	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is a habitat?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.

5. Write the model answer onto the chalkboard.

A habitat is the place where a plant or an animal lives.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

GRASSLAND HABITAT

1. **Grasslands** are large open areas that have a lot of **vegetation**, especially grass.
2. Many animals that live there are called **grazers**.
3. Grazers eat plants that grow on the ground, like grass and small shoots.
4. Impala, white rhino, zebra, and wildebeest are examples of animals that live in grassland habitats.
5. The weather is mostly hot with summer rain. There is not enough rain for trees to grow properly.

2. Explain this to the learners as follows:
   a. We need to know that one of the habitats that occurs often in South Africa is the grassland habitat.
   b. These are often wide, open spaces with very few tall trees, as there is not enough water for them.
   c. When there are fires, the grass burns down to the ground, but the grass roots have adapted and can survive fire. The grass regrows after a fire.
3. Show the learners Resource 15. Look carefully at the picture of the habitat. Look at the pictures and point out and discuss some of the animals that live in the grassland habitat.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What does a grassland habitat look like?

b. Can you name two animals that live in grassland habitats.

Answers to the checkpoint questions are as follows:

a. A grassland habitat has wide, open spaces covered with grasses, and few trees.

b. Any two from: white rhino, impala, wildebeest, zebra. (There are others, so check learners' answers.)

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

BIRDS AND OTHER ANIMALS IN A GRASSLAND HABITAT

1. There are lots of insects and birds in a grassland habitat.
2. Examples of bigger birds are: blue crane, secretary birds, guinea fowl.
3. Predators also live in the grasslands because there is food for them.
4. Cheetahs and lions have coats and fur that allow them to be **camouflaged** in the long grass.
5. The animals that lions and cheetahs eat are called their **prey**.

2. Read the information on the board to the learners.
   a. Explain to the learners that the some of the birds that live in the grassland have long legs to help them walk over the long grass. Some birds have strong claws which let them scratch through the ground looking for insects, and small animals which they eat.
   b. Predators, like lions and cheetahs, live in the grassland habitat because the food they eat, known as their prey, live there.
   c. These predators have coats and fur that allow them to be camouflaged in the long grass so that other animals cannot see them.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point: a. What are predators?

b. Which two predators live in the grassland habitat?

Answers to the checkpoint questions are as follows:

a. Predators are animals that eat other animals.
b. Lions and cheetahs live in the grassland habitat.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Grassland Habitat	43-44
Study & Master	Grassland Habitat	37
Day by Day	Grassland Habitat	29
Platinum	Grassland Habitat	33
Viva	Grassland Habitat	29
Spot On	Grassland Habitat	15
Oxford Successful	Grassland Habitat	32
Shuter & Shooter	Habitats	25-26
Sasol Inzalo Bk A	Grassland Habitat	83

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=9bQNRVyI4I0 (5 min 03sec) [Life on the African savannah]

6 C

Term 1, Week 6, Lesson C
Lesson Title: Forest habitat
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Habitats of Animals
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain what a forest habitat is
- explain which plants and animals live in a forest habitat.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 16: Forest habitat	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

FOREST HABITAT

1. **Forests** have lots of tall trees and small plants like ferns.
2. Forests normally get rain all year round, so there is enough water for the trees to grow.
3. Many smaller animals like monkeys, duiker, bushbuck, and bush pig live in forests.
4. These animals eat leaves, fruits and seeds that fall from the trees.
5. Forests provide plenty of hiding places from predators.

What plant is found most in the grassland habitat?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Grass is found most in the grassland habitat.

2. Explain this to the learners as follows:
   a. We need to know that one of the habitat that occurs often in South Africa is the forest habitat.
   b. These have many tall trees and small plants like ferns which like the cool temperatures and damp soils. Because the sun does not reach the ground, there is little or no grass.
3. Show the learners Resource 16. Look carefully at the picture of the habitat. Look at the pictures and point out and discuss some of the animals that live in the forest habitat.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What does a forest habitat look like?
b. Name two animals that live in forest habitats.

Answers to the checkpoint questions are as follows:

a. A grassland habitat has lots of tall trees with small plants like ferns.
b. Any two from: monkeys, bushbuck, duiker, bush pig. (There are others, so check the learners' answers.)

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

BIRDS AND OTHER ANIMALS IN A FOREST HABITAT

1. There are lots of birds in a forest habitat.
2. Examples of birds are pigeons and loeries.
3. Big animals, like elephants, also live in forests because there is food for them.
4. Predators such as leopards like forests, as they climb trees from which they can **ambush** prey.
5. The pattern on a leopard's coat helps it to hide from its prey.

2. Read the information on the board to the learners.
   a. Explain to the learners that the birds that live in the forests mostly eat fruit and seeds from the trees.
   b. Predators, like leopards, live in the forest habitat because their food is there and they can hide easily in trees.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Write the following onto the chalkboard (always try to do this before the lesson starts):

EXERCISE:

1. Draw a scene from a forest in your book.
2. Make sure to draw the trees and small plants.
3. Draw in three animals found in forests, include one forest predator.
4. Add labels to your drawing to identify the animals.

5. Give learners some time to copy the above information from the chalkboard into their workbooks and complete the exercise.

MODEL ANSWER:

The picture drawn should be of a forest with many trees and small plants on the ground. The learners should include three animals from bushbuck, bushpig, duiker, monkeys and must include a leopard.

All animals should be labelled.

6. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What do the birds in a forest eat?
b. Why does little or no grass grow in forests?

Answers to the checkpoint questions are as follows:

a. The birds in a forest eat fruits and seeds.
b. Little or no grass grows in a forest because the sunlight does not often reach the forest floor. Grass needs sunlight to grow.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Forest Habitat	44-45
Study & Master	Forest Habitat	37
Day by Day	Forest Habitat	30
Platinum	Forest Habitat	33
Viva	Forest Habitat	31-32
Spot On	Forest Habitat	15
Oxford Successful	Forest Habitat	32
Shuter & Shooter	Habitats	25-26
Sasol Inzalo Bk A	Forest Habitat	83

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.worldwildlife.org/ecoregions/at0115 [Website: WWF: Southern Africa Forests]

7 A

Term 1, Week 7, Lesson A
Lesson Title: River habitat
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Habitats of Animals
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain what a river habitat is
- explain which plants and animals live in a river habitat.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 17: River habitat	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Why are there no grass eating animals in forest habitats?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

There are no grass eating animals in the forest habitat because grass does not grow there.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

RIVER HABITAT

1. Animals that live in river habitats can live in water.
2. They eat plants and other animals that live in the water, or animals that drink at the edge of the water.
3. Otters, **barbel** (fish that eat meat), crocodiles and hippo live in river habitats.
4. Rivers have fresh water and can be different in depths and width.
5. There can be strong currents when there is lots of water. When there has been no rain, a river can dry to a trickle (a very small amount).

2. Explain this to the learners as follows:
   a. We need to know that one of the habitats that occurs often in South Africa is the river habitat.
   b. These are full of plants that grow in water, fish and some animals. These animals swim in the river looking for food.
   c. They are more agile and comfortable in the water than they are on land. This means they can move faster in the water.
3. Show the learners Resource 17. Look carefully at the picture of the habitat. Look at the pictures and point out and discuss some of the animals that live in the river habitat.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. Name two big animals that live in river habitats.
b. Why is a crocodile more comfortable in water?

Answers to the checkpoint questions are as follows:

a. Crocodiles and hippos live in river habitats.
b. A crocodile is more comfortable in water because the water supports its weight and using its tail makes it a powerful swimmer.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

BIRDS AND OTHER ANIMALS IN WATER HABITAT

1. There are birds in a river habitat. The birds nest on the banks and look for their food in the river.
2. Examples of birds are ducks, kingfishers, herons.
3. Other animals such as waterbuck live near rivers. They eat plants very close to the water's edge.
4. Hippos live in the water during the day, but get out to eat grass on the river banks at night.
5. Hippos are extremely dangerous animals.

2. Read the information on the board to the learners:
   a. Explain to the learners that the birds that live on the banks of the rivers, spend their time looking for food on the river. Some birds eat fish and some eat plants in the water.
   b. Waterbuck are often found in the rivers, and eat the plants that grow in the river and on the banks.
   c. Hippos eat plants that grow along the river banks. They are very possessive of their space and will chase off any other animals and people who come close. They are very fast runners.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point: a. What do hippos eat?

b. Why are hippos so dangerous?

Answers to the checkpoint questions are as follows:

a. Hippos eat grass on the river banks.

b. Hippos are dangerous because they are possessive of their space and can run very quickly.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	River Habitat	45-46
Study & Master	River Habitat	37
Day by Day	River Habitat	30-31
Platinum	River Habitat	34
Viva	River Habitat	31
Spot On	River Habitat	16
Oxford Successful	River Habitat	32
Shuter & Shooter	Habitats	25-26
Sasol Inzalo Bk A	River Habitat	83

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=f0gE1ca_hhg (3 min) [Underwater croc cams]

7 B

Term 1, Week 7, Lesson B
Lesson Title: Sea habitat
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Habitats of Animals
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain what a sea habitat is
- explain which plants and animals live in a sea habitat.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 18: Sea habitat	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.

2. Write the following question onto the chalkboard before the lesson starts:

What type of water occurs in a river habitat?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Fresh water is normally found in a river habitat.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

SEA HABITAT

1. Oceans and seas are salt water. They cover almost 75% of the earth's surface.
2. There are two types of animals that live in a sea habitat:
   Those that live completely in the water – fish
   Those that live in the water, and a bit on land – turtles.
3. Turtles lay their eggs on beaches, the eggs hatch and the baby turtles then have to get back to the sea.
4. Fish, sharks, whales and dolphins live in the sea habitat.
5. Near the shore there are lots of little animals that live in the shallow waters around the rocks, like crabs, lobsters and octopus.
6. Seagulls rely on the sea for food.

2. Explain this to the learners as follows:
   a. We need to know that the biggest habitat that occurs is the sea habitat. Ocean and seas cover almost 75% of the earth's surface.
   b. These are full of plants that grow in water where fish, sharks, whales and dolphins live. These animals get their food from the ocean.
   c. Along the shoreline, where the seas meet the land, there are lots of little animals which live in the rocks. Crabs, lobsters, sea snails all live there.
3. Show the learners Resource 18. Look carefully at the picture of the habitat. Look at, point out and discuss the pictures of some of the animals that live in the sea habitat.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point: a. Where do fish get their food?

b. Where do turtles lay their eggs?

Answers to the checkpoint questions are as follows:

a. Fish get their food in the sea.
b. Turtles lay their eggs on the beach.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

COMPARING HABITATS

Complete this table:

Habitats	Grassland	Forest	River	Sea
Plants				
Animals				
Predators				
Birds				
Weather or type of water				

2. Show the table on the board to the learners. Tell them to copy the table into their workbooks.
   a. Explain to the learners that they need to use the information they have gathered in the previous lessons to complete the summary table.
   b. Complete the table by giving a basic description of the plant life; name some of the animals; name the predators in that habitat; name some birds; and say what sort of weather is expected or what sort of water is there.
3. Give learners some time to copy the above table from the chalkboard into their workbooks and complete it.

MODEL ANSWER

COMPARING HABITATS

Habitats	Grassland	Forest	River	Sea
Plants	grass	trees, small plants	trees, small plants	seaweed
Animals	impala, zebra, wildebeest	duiker, bushbuck, elephant	duiker, bushbuck, elephant	fish, whales, dolphins
Predators	lion, cheetah	leopard	leopard	sharks, octopus
Birds	secretary bird, guinea fowl, blue crane	pigeons, loeries	pigeons, loeries	seagulls
Weather or type of water	hot	cool	cool	salt water

4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What animals live on the rocks near the shoreline?
b. What is a predator?

Answers to the checkpoint questions are as follows:

a. Crabs, lobsters and octopus live on the rocks near the shoreline.
b. A predator eats other animals.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Sea Habitat	46-47
Study & Master	Sea Habitat	37
Day by Day	Sea Habitat	31
Platinum	Sea Habitat	35

Viva	Habitats	31
Spot On	Sea Habitat	16
Oxford Successful	Sea Habitat	32
Shuter & Shooter	Habitats	25-26
Sasol Inzalo Bk A	Sea Habitat	83

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=RjZR3S9-IVI (4 min 13 sec) [Open Ocean Habitats]

7 C

Term 1, Week 7, Lesson C
Lesson Title: The need for a habitat
Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	Habitats of Animals
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- explain why there is a need for a habitat
- identify the correct habitat for animals based on their requirements.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying	✓	11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 19: The correct habitat	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What are the four types of habitats we studied?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Grassland, forest, river and sea habitats.

2. Explain this to the learners as follows:
   a. We need to know that animals need a habitat where they can find food and water, have a place to shelter, have their young and can escape from danger.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

NEED FOR A HABITAT

1. All animals are **adapted** to their habitats – which means they have developed special features that help them to live there.
2. White rhinos live in grasslands, because they are grazers. Their upper lip is flat which helps them to eat grass.
3. Rhinos can drink a lot of water at a time. This helps them to survive because water might not be available soon.
4. When it is hot, rhinos shelter under the trees, or roll in mud to coat their skin to protect it from sunburn.
5. Rhinos in South Africa are in great danger from poachers who want to sell their horns. People are the rhinos' only danger.

   b. The adaptations of the rhino help it to live in the grassland habitat. It has a thick skin to protect it, it can drink a lot of water at a time, and its upper lip is flat to help it to eat the grass.
3. Show the learners Resource 19. Look carefully at the picture of the rhino and pont out its adaptations.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What adaptation helps the rhino eat grass?

b. How does a rhino protect itself from the sun?

Answers to the checkpoint questions are as follows:

a. The rhino has a flat upper lip to help it eat grass.

b. A rhino will rest in the shade of a tree, or it will have a mud bath to coat its skin in mud.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

TWO MORE ANIMALS

Crocodile	**Lion**
River Habitat	Grassland Habitat
Webbed feet to help it swim	Strong jaws for holding onto its prey
Lies hidden underwater to surprise its prey	Camouflaged in long grass
Rests on the bank to warm its body	Rests in the shade to cool its body
Very good eyesight and can smell blood in the water	Very good eyesight, hearing and sense of smell
Can swim very fast with its strong tail	Can run very far and very fast
Individual hunter	Very good hunter in a team

2. Show the table on the board to the learners.

   a. Explain to the learners that they need to be able to use this information to describe why the crocodile and lion are suited to the habitat they live in.

3. Give learners some time to copy the above table from the chalkboard into their workbooks.

4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Where does a crocodile wait for its prey?
b. How can a lion kill prey bigger than itself?

Answers to the checkpoint questions are as follows:

a. A crocodile waits for its prey under the water.
b. Lions hunt in packs. With team work they kill animals bigger than themselves.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Need for a habitat	49-51
Study & Master	Need for a habitat	39-40
Day by Day	Need for a habitat	33-34
Platinum	Need for a habitat	38-39
Viva	Need for a habitat	28-32
Spot On	African Wild Animals	19
Oxford Successful	Need for a habitat	34-35
Shuter & Shooter	Need for a habitat	28-30
Sasol Inzalo Bk A	Why do animals need a habitat?	87-94

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. http://www.arkive.org/african-wild-dog/lycaon-pictus/video-09b.html (50 sec) [African Wild Dog] Look at the whole website for more information.
2. https://www.youtube.com/watch?v=fnR9s2JOxdQ (45 min 30sec) [National Geographic: African Wild Dog]
3. https://www.youtube.com/watch?v=CN_EKvQ9FiM (52sec) [White rhino feeding]
4. https://www.youtube.com/watch?v=4h9re1bHt40 (2 min 57sec) [Croc Attack]

TOPIC OVERVIEW:
Animal shelters
Term 1, Weeks 8A – 9C

A. TOPIC OVERVIEW

Term 1, Weeks 8a – 9c

- This topic runs for 2 weeks.
- It is presented over 6 lessons.
- This topic's position in the term is as follows:

LESSON	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

LESSON	WEEK 6			WEEK 7			WEEK 8			WEEK 9			WEEK 10		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

B. SEQUENTIAL TABLE

GRADE 1 & 3	GRADE 4	GRADE 5
LOOKING BACK	**CURRENT**	**LOOKING FORWARD**
• Animal homes • Animal and creatures that make their homes – such as birds, some bees, ants • Animals and creatures that find a home – such as baboons, snakes, squirrels • Animals and creatures that carry their homes – such as snails, tortoises	• Animal shelters can be natural including nests, shells, hollow trees, wasp nests or human- made, including dog kennels, cages, kraals, stables • Animal shelters can be shell or frame structures, can have different shapes and sizes, and can be made from different materials	• Animal types • Some animals have hard outer skins or shells • A vertebrate skeleton consists of bones and joints and is inside the body • Bones are hard and form a strong frame structure • A skeleton provides support for an animal's body and protection for its organs

C. SCIENTIFIC AND TECHNOLOGICAL VOCABULARY

Ensure that you teach the following vocabulary at the appropriate place in the topic:

	TERM	EXPLANATION
1.	natural	Something that is formed by nature
2.	burrow	A hole or tunnel in the ground made by an animal for shelter
3.	frame structure	A structure made up of many parts joined together
4.	shell structure	A hollow or solid structure that holds or protects
5.	materials	The things that will be used to make something
6.	woven	To have made something by interlacing materials together
7.	design brief	A sentence saying what is to be designed and made
8.	specification	Tells you what your proposed design must have, look like, and what it must be able to do
9.	constraints	Limits; what you should do within these limits
10.	lip	A raised edge which is higher than the floor
11.	pallet	A large wooden frame used for storing objects
12.	2D drawing	A drawing that has height and width

D. UNDERSTANDING THE USES / VALUE OF SCIENCE

There is a value in knowing what shelters are suitable for specific animals. There is a value in being able to design and make an effective shelter for animals based on prior knowledge of shell and frame structures.

E. PERSONAL REFLECTION

Reflect on your teaching at the end of each topic:

Date completed:	
Lesson successes:	
Lesson challenges:	
Notes for future improvement:	

8 A

Term 1, Week 8, Lesson A

Lesson Title: Natural and human made animal shelters

Time for lesson: 1 hour

A	POLICY AND OUTCOMES	
Sub-Topic	Structures for animal shelters	
CAPS Page Number	18	
Lesson Objectives By the end of the lesson, learners will be able to: • explain that animal shelters are comprised of different kinds of structures • compare natural and human-made structures.		
Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	✓

SCIENCE PROCESS + DESIGN SKILLS					
1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing	✓	8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information	✓		

C

D

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 20: Different shelters	

CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

Why do animals need shelter?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Animals need shelter to protect them from the weather, or to have a home.

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

NATURAL SHELTERS

1. Animals need homes to shelter them just as people do.
2. They need to keep warm and safe from predators.
3. Some animals store food in their homes.
4. There are many different types of **natural** shelters: **burrows**, hollow logs, nests.
5. Some animals carry their homes around with them, e.g. tortoises and snails.
6. All of these shelters are natural structures as they occur in nature.

2. Explain this to the learners as follows:
   a. We need to know that in nature certain animals have shelters that are naturally made. These animals have either made the shelters themselves (burrows and nests), they use something that is suitable (a hollow log or tree), or they have been formed naturally (shells on their backs).
   b. Some animals use the burrows of others as shelter. Warthogs will often use old burrows of other animals if they have been abandoned.
3. Show the learners the pictures of shelters on Resource 20. Ask them to compare the differences between the shelters.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What animals use a burrow?
b. Can you name three types of natural shelters?

Answers to the checkpoint questions are as follows:

a. A warthog uses a burrow as do rabbits and hyenas.
b. Burrows, nest, hollow logs or trees

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

HUMAN MADE SHELTERS

1. Farm animals and pets need to have shelters made for them.
2. Built by people, they are called 'human made'
3. Dogs have kennels, birds have cages, rabbits have hutches, chickens have coops, and horses have stables.
4. These structures have been built to protect the animals from predators and the weather.
5. Often people will get ideas to build other structures from natural shelters.

2. Read the information on the board to the learners.
   a. Explain to the learners that any farm or zoo animal or pet has a structure built for them by people.
   b. The structures are designed to care for the animal.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Write the following onto the chalkboard (always try to do this before the lesson starts).

   Tell the students to copy this table into their workbooks and to write down whether the shelters in column 1 are natural or human made in column 2.

COMPLETE THE TABLE

Shelter	**Natural or Human Made**
dog kennel	
bird's nest	
bird's cage	
warthog burrow	
spider's web	
horses stable	

5. Give learners some time to copy the above information from the chalkboard into their workbooks and do the exercise.

MODEL ANSWER:

Shelter	Natural or Human Made
dog kennel	human made
bird's nest	natural
bird's cage	human made
warthog burrow	natural
spider's web	natural
horses stable	human made

6. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Why do people make shelters for their animals?
b. Why can't farm animals or pets make their own shelters?

Answers to the checkpoint questions are as follows:

a. People make shelters for their animals to protect them from predators and the weather.
b. Farm animals and pets do not have the ability to make their own shelters.

7. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Animal Shelters: Natural or human made	55-56
Study & Master	Animal Shelters	41-42
Day by Day	Animal Shelters: Natural or human made	37-38
Platinum	Animal Shelters: Natural or human made	42-43
Viva	Animal Shelters: Natural or human made	35-38
Spot On	Animal Shelters: Natural or human made	20-21
Oxford Successful	Why do animals need shelter?	36-38

8 B

Shuter & Shooter	Animal Shelters: Natural or human made	31-33
Sasol Inzalo Bk A	Natural and man-made shelters	96-99

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=DnbaXiOW4T4 (1hr 20 min 54sec) [Amazing animal homes]

Term 1, Week 8, Lesson B
Lesson Title: Shell or frame structures
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Structures for animal shelters	
CAPS Page Number	18	
Lesson Objectives By the end of the lesson, learners will be able to: • explain the differences between frame and shell structures • explain which structures would be best for certain animals.		
Specific	1. DOING SCIENCE + TECHNOLOGY	✓

Aims	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	✓

SCIENCE PROCESS + DESIGN SKILLS					
1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	
6. Identifying problems & issues		12. Recording Information			

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 20: Different shelters	

CLASSROOM MANAGEMENT

C

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What type of shelter is a stable?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A stable is a human-made shelter.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

FRAME AND SHELL STRUCTURES

1. A **frame structure** is one that is made up of many parts joined together.
2. Examples are: a bird cage, a spider's web, or a fence.
3. A **shell structure** is hollow, has a strong outer layer and usually holds or protects something.
4. Examples are: an egg, a tortoise shell, a dog kennel.
5. Some shelters are a combination of both frame and shell structures.
6. Example are: a chicken coop with a house on the end.

2. Explain this to the learners as follows:
   a. We need to know the two different forms of structures that are used to make shelters for animals.
   b. Frame structures are made from many parts joined together to make a structure.
   c. Shell structures are solid and strong and usually protect something.
3. Show the learners the pictures of shelters on Resource 20. Ask the learners to identify which of the shelters are frame structures and which are shell structures.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What structure is an egg box?
b. Can you name two examples of frame structures?

Answers to the checkpoint questions are as follows:

a. An egg box is a shell structure.
b. Frame structures: a bird cage, a spider's web

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

ACTIVITY

1. Explain what a structure is.
2. What is a natural structure?
3. What is a human-made structure?
4. Give an example of a human-made shell structure.
5. Give an example of a natural shell structure.
6. Give an example of a human-made frame structure.
7. Give an example of a natural frame structure.

2. Read the exercise on the board to the learners.
   a. Explain to the learners that they need to copy the questions into their books and answer them.
   b. Show the learners the pictures on Resource 20 to help them look at examples of various shelters.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. See the model answer below:

1. A structure is something that is built or made up of parts. It protects or holds something.
2. A natural structure is one that occurs in nature, or on its own.
3. A human-made shelter is one that is made by humans.
4. A dog kennel (there could be other answers)
5. A shell (there could be other answers)
6. The fence around a kraal (there could be other answers)
7. A bird's nest (there could be other answers)

5. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What is a shell structure?

b. What is a frame structure?

Answers to the checkpoint questions are as follows:

a. A shell structure is a strong solid structure that usually holds or protects something.

b. A frame structure is made up of many parts joined together.

6. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Shell and Frame Structures	56-57
Study & Master	Shell and Frame Structures	43
Day by Day	Animal shelters can be shell or frame structures	39-40
Platinum	Shell Structures and Frame Structures	44
Viva	Shell and Frame Structures	39-42
Spot On	Shell and Frame Structures	22-23
Oxford Successful	Animal shelters are Structures	39
Shuter & Shooter	Shell and Frame Structures	34-35
Sasol Inzalo Bk A	Shell and Frame Structures	103

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=DnbaXiOW4T4&t=68s (1hr 20 min 34sec) [National Geographic Documentary: Amazing Animal Homes]

8 C

Term 1, Week 8, Lesson C
Lesson Title: Materials for shelters
Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	Structures for animal shelters
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- discuss the best materials to use for shelters
- identify the needs of animals when designing a shelter.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	✓

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing	✓	8. Predicting	✓	14. Designing	
3. Comparing	✓	9. Hypothesizing		15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	
5. Sorting & Classifying		11. Doing Investigations	✓	17. Communicating	
6. Identifying problems & issues		12. Recording Information			

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
Resource 20: Different shelters	

CLASSROOM MANAGEMENT

C

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is the difference between frame and shell structures?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A frame structure is made up of many parts joined together to make a frame, and a shell structure has a strong outer layer that protects what is inside..

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

MATERIALS FOR MAKING SHELTERS

1. Shelters can be made in many different ways.
2. Many different **materials** can be used to make shelters.
3. Natural shelters are made from natural materials: mud, grass and sticks.
4. Human-made shelters can be made from any materials, but they will be built by a person.
5. Material examples are: wood, clay, metal, plastic, glass

2. Explain this to the learners as follows:
   a. We need to know the various materials that can be used to make a shelter.
   b. If the shelter is natural, animals make it; it is likely to be made with mud, grass and sticks.
   c. If people make structures, they are able to access many different materials. These could be natural materials, and they could be materials made by humans. Examples are bricks, metal, plastic and glass.
3. Show the learners the pictures of shelters on Resource 20. Ask the learners to decide which materials the shelters are made of.
4. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point: a. What are natural materials?

b. Can animals use human-made materials?

Answers to the checkpoint questions are as follows:

a. Natural materials are found in nature and exist without a human's influence.
b. Yes, if they are made specially for them, e.g. a kennel, a cage.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

THE USE OF MATERIALS

1. Different materials can be used in different ways to make a shelter.
2. Sticks can be **woven** together to make a nest or a screen.
3. Wood and wire mesh can be nailed together to make a fence.
4. Shelters are often the size and shape of the animal that needs to use it.
5. They should not be too big and heavy for a small animal, or too small or fragile for a large animal. If shelters are too large, predators might be able to get into them.

2. Read the information on the board to the learners.
   a. Explain to the learners that there are many ways to combine materials to make shelters. They do not have to only be made with one material.
   b. Birds weave sticks together to make nests. People use wood and wire to make coops and hutches.
   c. Show the learners the pictures on Resource 20 to help them understand combinations of materials in the building of structures.
3. Give learners some time to copy the above information from the chalkboard into their workbooks.
4. Write the following onto the chalkboard (always try to do this before the lesson starts):

EXERCISE:

1. Draw a picture of a shelter for a dog. Think about the materials that will be needed to make it and how they will be joined. Label the picture.
2. Draw a bird's nest. Think about the materials that a bird will use to make it, and how they are connected together.
3. Write a sentence comparing the size and shape of each shelter.

5. Give learners some time to copy the above information from the chalkboard into their workbooks and to do the exercise.

MODEL ANSWER

1. Draw a picture of a shelter for a dog. Think about the materials that will be needed to make it and how they will be joined. Label the picture.

   The learners should draw a type of a kennel for a dog. They will use wood to make this shelter. Label is a kennel.

2. Draw a bird's nest. Think about the materials that a bird will use to make it, and how they are connected together.

   The learners should draw a nest. The sticks or plant material the bird uses to make it's nest will be woven together.

3. Write a sentence comparing the size of each shelter.

   The dog's shelter is much bigger than the bird's nest, because a dog is much bigger than a bird.

6. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What materials do animals use to build their shelters?
b. Why should a shelter not be too big for an animal?

Answers to the checkpoint questions are as follows:

a. Animals use mud, grass and sticks to build their shelters.
b. A shelter should not be too big for an animal because a predator could get into it.

7. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	-	-
Study & Master	Shelters made from different materials	44
Day by Day	Materials for making shelters	41
Platinum	Animal shelters can be made from many different materials	45
Viva	-	-

Spot On	Animal shelters can be made from different materials	24-25
Oxford Successful	Different materials	40
Shuter & Shooter	Animal Structures	35
Sasol Inzalo Bk A	-	-

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=fURAGnAz_V0 (6 min 38sec) [Our goat shelter using free pallets]

9 A

Term 1, Week 9, Lesson A
Lesson Title: Shelters for animals
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Structures for animal shelters
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- formulate the best design to use for an animal shelter
- identify the needs of animals when designing a shelter.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

C

ICE PROCESS + DESIGN SKILLS					
essing & Recalling ormation	✓	7. Raising Questions	✓	13. Interpreting Information	✓
erving		8. Predicting		14. Designing	✓
nparing		9. Hypothesizing		15. Making/ constructing	
asuring		10. Planning Investigations		16. Evaluating and improving products	
ing & Classifying		11. Doing Investigations		17. Communicating	
ntifying problems & ues	✓	12. Recording Information	✓		

POSSIBLE RESOURCES

For this lesson, you will need:

DEAL RESOURCES	IMPROVISED RESOURCES

SSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What two things should be considered when designing a shelter for an animal?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

Safety from predators and shelter from weather should be considered.

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

MY RABBIT HUTCH DESIGN

DESIGN BRIEF:

I will design and make a _____ that will be able to protect _____ rabbits from predators and the weather.

SPECIFICATIONS:

The hutch must be able to protect the rabbits from the rain.

The structure needs a step for the rabbits to use to get into their box.

The structure should have a lip on the front to make sure the straw bedding does not fall out.

The structure should have a sloped roof to prevent the rabbits from sitting on their roof and making a mess.

The structure should be made from old packing pallets with chicken mesh.

There needs to be an enclosed run in front of the structure where the rabbits can stretch their legs, if they are not inside.

As rabbits are expert diggers, the floor of the hutch needs to be wooden.

CONSTRAINTS:

The hutch must be built at home.

2. Read the following case study to the class:

D

Your school needs new sports uniforms, but there is not enough money in the school sports budget to pay for this. Your coach has asked everyone in the team to come up with an idea to raise money.

Your friend, Njabulo, lives on a farm. His father said he will lend your team two female rabbits and one male, so that your class will be able to sell the baby rabbits to raise money. Your coach has convinced the school that this is a great idea, and an old shed behind the school has been offered to keep the rabbits.

Njabulo's father says that rabbits need a structure to protect them from the rain. The structure needs a step for the rabbits to use to get into their box.

The structure should have a lip on the front to make sure the straw bedding does not fall out. The structure should have a sloped roof to prevent the rabbits from sitting on their roof and making a mess. The structure should be made from old packing pallets and chicken mesh. There needs to be an enclosed run in front of the structure where the rabbits can stretch their legs, if they are not inside. As rabbits are expert diggers, the floor of the hutch needs to be wooden.

3. Explain this to the learners as follows:

a. A design brief is a sentence saying what you are going to design and make.
b. Learners must complete the sentence above.
c. Specifications tell you what the rabbit hutch requires.
d. Constraints are the limitations within which you need to work.

4. The learners need to consider the following:
   a. What shape will the rabbit hutch be?
   b. What materials will you need to make the rabbit hutch?
5. Give learners some time to copy the above information from the chalkboard into their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. What materials can be used?
b. What does the hutch protect the rabbits from?

Answers to the checkpoint questions are as follows:

a. Old packing pallets and chicken mesh.
b. The hutch protects the rabbits from predators and the weather.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

INVESTIGATION

1. Establish the brief.
2. Find more information to help you design the hutch.
3. Do research on other rabbit hutches
4. Read in books, do research on the internet if you can, or talk to someone who knows.
5. Make notes on what you find.

2. Read the information on the board to the learners.
   a. Explain to the learners that before they can do their design, they need to do some research to investigate rabbit hutches and the common mistakes people have made in the past.
   b. Tell the learners to make notes while they carry out their investigation and bring them to the next class.
3. Give learners some time to copy the above information from the chalkboard into their workbooks to guide their investigation.
4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What is a design brief?

b. What are specifications?

Answers to the checkpoint questions are as follows:

a. A brief is a sentence saying what you need to do.

b. Specifications are a detailed description of the design and materials needed to make something.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Design, draw and evaluate an animal shelter	62-69
Study & Master	Design your own animal shelter	48-50
Day by Day	Design an animal shelter	43-46
Platinum	Design and draw to solve a problem	47-51
Viva	Design and draw an animal shelter	46-48
Spot On	Case study: Need for an animal shelter	26-29
Oxford Successful	Design, draw and evaluate an animal shelter	41
Shuter & Shooter	Case Study: Design an animal shelter for Mrs Sibeko's chickens	35-39
Sasol Inzalo Bk A	Designing an animal shelter	103-109

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=ditcx67FQyM (3 min 35sec) [The most stylish dog shelter ever]

9 B

Term 1, Week 9, Lesson B
Lesson Title: Habitats
Time for lesson: 1½ hours

A POLICY AND OUTCOMES

Sub-Topic	Structures for animal shelters
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- formulate the best design to use for an animal shelter
- identify the needs of animals when designing a shelter.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions		13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	✓
3. Comparing		9. Hypothesizing		15. Making/ constructing	
4. Measuring	✓	10. Planning Investigations		16. Evaluating and improving products	✓
5. Sorting & Classifying		11. Doing Investigations	✓	17. Communicating	
6. Identifying problems & issues		12. Recording Information			

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
-	

C CLASSROOM MANAGEMENT

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is a design constraint?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A design constraint is a limitation on the design.

D ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

1. Draw a 2D drawing that includes:
   a. The rabbit hutch that you will make
   b. Labels of the specifications you have included
   c. One sketch showing the front view and one sketch showing a side view
   d. A title for your rabbit hutch design.
2. On your drawing label the materials you will use to make your rabbit hutch.

1. Explain this task to the learners as follows:
   a. Each learner must make a 2D drawing of their idea for a rabbit hutch. A 2D drawing has height and depth.
   b. This drawing must include:
   c. Labels to explain the specifications given regarding the rabbit hutch
   d. A front view and a side view
   e. A title for the rabbit hutch design.
   f. Each learner must label the materials that they will need to make the rabbit hutch.
2. Give learners some time to copy the above information and to complete these drawings and the list of materials in their workbooks.

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. How big should the rabbit hutch be?
b. Why does the hutch need a wooden floor?

Answers to the checkpoint questions are as follows:

a. The rabbit hutch should be big enough for three adult rabbits and their babies.
b. The hutch needs a wooden floor so rabbits cannot dig tunnels and escape.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

DRAWINGS

1. Get together with a partner to do the following:
2. Use your drawings to explain your idea to your partner.
3. Explain why you have chosen your particular materials.
4. Explain the reasons for the different sizes of the different parts of the hutch.
5. Ask your partner if he or she has any ideas to improve your design.
6. Write these suggestions down.

2. Read the information on the board to the learners.
   a. Explain to the learners that before they build something, they should go over their design with another person. This will allow them to get a fresh view of their ideas, and they can then adjust their design, if necessary.
   b. Possible mistakes can be eliminated.
3. Give learners some time to copy the above information from the chalkboard into their workbooks to guide their conversation.
4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. Why should you discuss your design with a partner?
b. Are you allowed to adjust your design?

Answers to the checkpoint questions are as follows:

a. A fresh view might highlight possible mistakes and suggest solutions.
b. Yes, of course you are allowed to adjust your design.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Design, draw and evaluate an animal shelter	62-69
Study & Master	Design your own animal shelter	48-50
Day by Day	Design an animal shelter	43-46

Platinum	Design and draw to solve a problem	47-51
Viva	Design and draw an animal shelter	46-48
Spot On	Case study: Need for an animal shelter	26-29
Oxford Successful	Design, draw and evaluate an animal shelter	41
Shuter & Shooter	Case Study: Design an animal shelter for Mrs Sibeko's chickens	35-39
Sasol Inzalo Bk A	Designing an animal shelter	103-109

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=jmLsp_UREQk (5 min 18sec) [Good vs bad rabbit cages]

9 C

Term 1, Week 9, Lesson C
Lesson Title: Evaluating the design
Time for lesson: 1 hour

A POLICY AND OUTCOMES

Sub-Topic	Structures for animal shelters
CAPS Page Number	18

Lesson Objectives

By the end of the lesson, learners will be able to:

- evaluate their rabbit hutch design
- identify weaknesses in the design which should be adjusted before making it.

Specific Aims	1. DOING SCIENCE + TECHNOLOGY	✓
	2. UNDERSTANDING + CONNECTING IDEAS	✓
	3. SCIENCE, TECHNOLOGY + SOCIETY	

SCIENCE PROCESS + DESIGN SKILLS

1. Accessing & Recalling Information	✓	7. Raising Questions	✓	13. Interpreting Information	✓
2. Observing		8. Predicting		14. Designing	
3. Comparing		9. Hypothesizing	✓	15. Making/ constructing	
4. Measuring		10. Planning Investigations		16. Evaluating and improving products	✓
5. Sorting & Classifying		11. Doing Investigations		17. Communicating	✓
6. Identifying problems & issues		12. Recording Information			

B POSSIBLE RESOURCES

For this lesson, you will need:

IDEAL RESOURCES	IMPROVISED RESOURCES
2D designs	

CLASSROOM MANAGEMENT

C

1. Make sure that you are ready and prepared.
2. Write the following question onto the chalkboard before the lesson starts:

What is a 2D drawing?

3. Learners should enter the classroom and answer the question in their workbooks.
4. Discuss the answer with the learners.
5. Write the model answer onto the chalkboard.

A 2D drawing is one that has two dimensions, height and width.

D

ACCESSING INFORMATION

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

EVALUATING MY DESIGN

1. Is there enough space for the rabbits to move around, get fresh air and exercise?
2. Will my hutch protect the rabbits from predators?
3. Will my hutch protect the rabbits from the weather?
4. Will my rabbits be able to get to the food and water provided?
5. Is there a place for mother rabbits to look after their babies?

Checkpoint 1

Ask the learners the following questions to check their understanding at this point:

a. Why do we evaluate our designs?
b. Why should you be critical when evaluating your design?

Answers to the checkpoint questions are as follows:

a. We evaluate our designs to make sure we make the best possible design.
b. You should be critical when evaluating your design, because you will be open to other ideas and be able to fix design problems.

E CONCEPTUAL DEVELOPMENT

1. Write the following onto the chalkboard (always try to do this before the lesson starts):

IMPROVEMENTS

1. I think that the materials being used on my design are _____.
2. I think that the size of my hutch is _____.
3. What I like best about my design is _____.
4. I could improve my design by _____.
5. It is important that my hutch is built well so that _____.

2. Read the statements on the board to the learners.
   a. Explain to the learners that before they build something, they should see if they can make improvements to the design.
   b. Tell the learners to copy the statements down in their workbooks. They should give detailed responses to complete the sentences.
3. Give learners some time to copy the statements from the chalkboard into their workbooks and complete them.
4. Ask the learners if they have any questions. Provide answers where necessary.

Checkpoint 2

Ask the learners the following questions to check their understanding at this point:

a. What does evaluating a design allow you to make?
b. Will the first design always be perfect?

Answers to the checkpoint questions are as follows:

a. Evaluating a design allows you to make improvements.
b. No, the first design is often not perfect.

2. Explain this task to the learners as follows:
   a. Learners must copy these questions into their books and answer them by looking critically at their designs.
   b. These questions require 'Yes' or 'No' answers.

3. Give learners some time to copy the above information and to complete the answers to the questions in their workbooks.

5. Ask the learners if they have any questions and provide answers and explanations.

F REFERENCE POINTS FOR FURTHER DEVELOPMENT

If you need additional information or activities on this topic, you can find these in your textbook on the following pages:

NAME OF TEXTBOOK	TOPIC	PAGE NUMBER
Solutions for All	Design, draw and evaluate an animal shelter	62-69
Study & Master	Design your own animal shelter	48-50
Day by Day	Design an animal shelter	43-46
Platinum	Design and draw to solve a problem	47-51
Viva	Design and draw an animal shelter	46-48
Spot On	Case study: Need for an animal shelter	26-29
Oxford Successful	Design, draw and evaluate an animal shelter	41
Shuter & Shooter	Case Study: Design an animal shelter for Mrs Sibeko's chickens	35-39
Sasol Inzalo Bk A	Designing an animal shelter	103-109

G ADDITIONAL ACTIVITIES/ READING

In addition, further reading, listening or viewing activities related to this sub-topic are available through the following web links:

1. https://www.youtube.com/watch?v=jmLsp_UREQk (5 min 18sec) [Good vs bad rabbit cages]

NATURAL SCIENCES & TECHNOLOGY

ASSESSMENT

GRADE 4 TERM 1

- This section presents the CAPS assessment requirements for this grade for this term.
- See your prescribed textbooks for examples of the required assessments.
- A example of a practical task and test has been included.

CAPS Assessment

Assessment is a continuous planned process that involves identifying, gathering, interpreting and diagnosing information about the performance of learners.

Assessment involves generating and collecting evidence of learner achievement and progress, and using this information to understand and provide assistance to the learner during the process of teaching and learning.

Assessment should be both *formal* and *informal*:

a. ***Informal Assessment*** involves regular checking of learners' class work and practical tasks; asking questions; discussions; informal classroom interactions; and giving constructive feedback. Informal assessment marks do not need to be recorded, but the teacher can make notes for future reference.

b. ***Formal Assessment*** provides teachers with a systematic way of evaluating how well learners are progressing. Formal Assessment consists of selected assessment tasks. These tasks are stipulated by CAPS and the marks need to be recorded. These tasks are done throughout the year, and include practical / investigations, project, tests and examinations.

i. ***Tests and Examinations***

The weighting of the marks should reflect the time allocated to each section in the curriculum content. Tests and exams should consist of a range of questions that cover different cognitive levels: recall; understanding; application; evaluation; analysis; and synthesis. CAPS aligned tests and examinations, with accompanying memoranda, are provided with these lesson plans.

ii. ***Practical / investigation tasks***

Practical / investigation tasks give learners the opportunity to demonstrate knowledge, skills and understanding. They form part of the activities included in these lesson plans. Each term, one practical / investigation task has been selected for assessment. A rubric is provided to conduct the assessment.

iii. ***Project***

Projects give learners the opportunity to demonstrate knowledge, skills, understanding and application. The project can be given in any term but must be recorded for term 4 assessment.

A minimum mark allocation is prescribed in CAPS for, practical / investigation projects, tests and examinations for each grade. These are summarised, by grade, in the table below:

Grade 4 Programme of Formal Assessment						
Formal Asessments	**Term 1**	**Term 2**	**Term 3**	**Term 4**	**Total Marks For The Year**	**Total**
School-based assessments	1 test [15 marks] 1 selected practical task [10 marks]	1 exam or test on work from terms 1 & 2 [40 marks] 1 selected practical task [10 marks]	1 test [15 marks] 1 selected practical task [15 marks]	1 selected practical task [15 marks]	120 marks	Together make up 75% of the total marks of the year
Exams **[60 minutes]**				Exam on work from terms 3 & 4 [40 marks]	40 marks	Makes up 25% of the total marks of the year
Number of formal assessments	2	2	2	2	Total 8 assessments [160 marks]	Total: 100%

PRACTICAL TASK - INTRODUCTION
NS & TECH **GRADE 4** **PRACTICAL TASK** **TERM 1** **10 MARKS**

Time allocation: 40 minutes

NOTE TO THE TEACHER

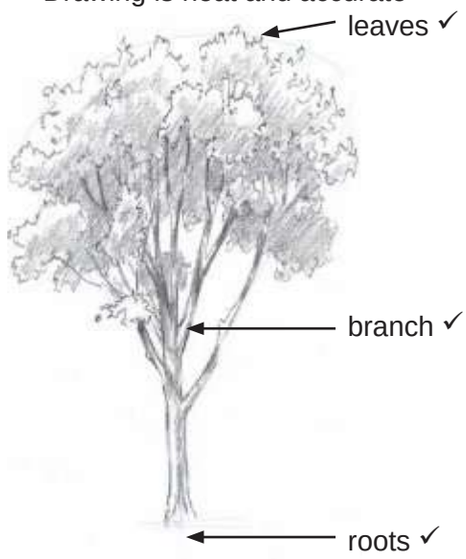
1. This practical activity will be completed as part of Section E of lesson 3C.
2. This practical will take place during the lesson after the teaching component in Section D, "Accessing Information".
3. The first 20 minutes will be used to teach section D and prepare learners for the practical task.
4. The second 20 minutes will be used to complete the practical activity as outlined in Section E.
5. The instructions and content of the practical task should be written on the chalkboard for the learners.
6. The memorandum for assessing the practical task is provided.
7. The learners will need to have 3 examples of different leaves to compare. If they are unable to collect these from the school grounds, you will need to provide examples or use Resource 8. You could also ask them to bring leaves from home.
8. The learners should complete the drawings with a sharp pencil and the written answers should be completed in pen.

PRACTICAL TASK - MEMORANDUM
NS & TECH **GRADE 4** **PRACTICAL TASK** **TERM 1** **10 MARKS**
(see Section E of Lesson 3C for instructions and questions)

Topic	Task	Expected answer/outcome	Marks
	1		
Structure of plants and animals	Leaf 1	(Half mark each) • Drawing is neat and accurate✓ • The size is clear ✓ • The shape and detailed edges are shown✓ • The veins are shown✓	**2**

Structure of plants and animals	Leaf 2	(Half mark each) • Drawing is neat and accurate✓ • The size is clear ✓ • The shape and detailed edges are shown✓ • The veins are shown✓	**2**
Structure of plants and animals	Leaf 3	(Half mark each) • Drawing is neat and accurate✓ • The size is clear ✓ • The shape and detailed edges are shown✓ • The veins are shown✓	**2**
	2		
Structure of plants and animals	Leaf rubbing	(Half mark each) • Rubbing is neat and accurate ✓  • Whole shape and edges are visible✓ • Veins are clear✓ • Texture: smooth/rough/fuzzy/furry✓	**2**

	3		

Structure of plants and animals	Drawing	(Half mark each) • Drawing is neat and accurate ✓  	**2**
		TOTAL	**10**

TERM TEST

NS & TECH
GRADE 4
TEST
TERM 1

15 MARKS
30 MINUTES

NOTE TO THE TEACHER:
If possible, photocopy this test for each learner. If this is not possible, write the test on the chalkboard.

INSTRUCTIONS TO THE LEARNERS

1. Answer all questions in blue or black ink.
2. Read each question carefully before answering it.
3. Pay attention to the mark allocations.
4. Plan your time carefully.
5. Write your answers in the spaces provided.
6. Write neatly.

Practice Question
Read the question and circle the letter that shows the correct answer.

Which of the following is not a living thing?

A. tree
B. stone
C. child
D. fish

You have answered correctly if you have circled (B)

NS & TECH
GRADE 4
TERM 1 TEST

15 MARKS

Question 1: Multiple choice **[4]**

Read each question and circle the letter that shows the correct answer.

1.1. Which of the following is not a basic part of a plant? (1)

A. root
B. wing
C. stem
D. leaf

1.2. What do seeds need to germinate? (1)

A. oxygen
B. shade
C. water
D. cold

1.3. Identify which of these is a predator: (1)

A. waterbuck
B. fly
C. shark
D. rhino

1.4. Select which of the following are three of the life processes: (1)

A. feeding, talking, breathing
B. breathing, growing, learning
C. reproducing, feeding, breathing
D. breathing, feeding, thinking

Question 2: Match the columns **[4]**

Instructions:

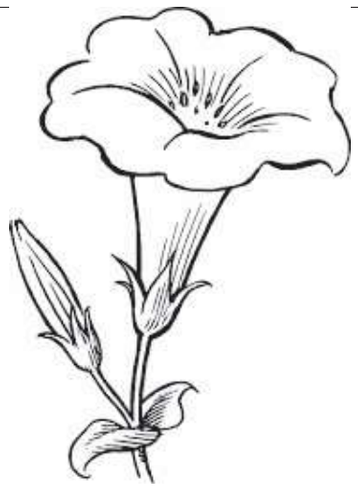
- Match the sentences in COLUMN A with the words in COLUMN B.
- Draw a line to join the sentence in COLUMN A with the correct word in COLUMN B. Do this as shown in the example below.

COLUMN A		COLUMN B
example	A fungus that can grow on bread.	A. Roots
2.1.	Things that do not look alive but are alive.	B. Predator
2.2.	Anchors and absorbs	C. Ears
2.3.	An animal that hunts and eats other animals	D. Dormant
2.4.	Sense organs	E. Mould

Question 3 **[2]**

a. Say whether the things in the pictures below are **living** or **non-living** by writing **living** or **non-living** next to each picture.

b. Give a reason for your answer

3.1		a. living or non-living: _____ (½) b. Reason: _____ (½) _____ _____ _____
3.2		a. living or non-living: _____ (½) b. Reason: _____ (½) _____ _____ _____

Question 4 **[2]**

You have learnt a lot about animals.

Using what you have learnt, explain the main difference between the habitats of a fish and an elephant. (2)

_____

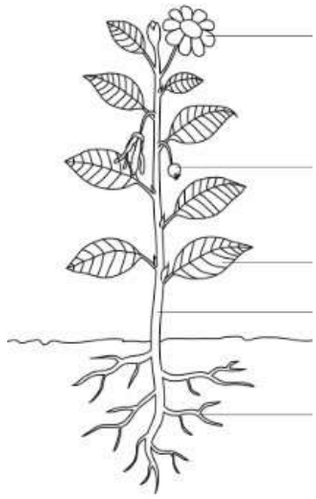
_____

_____

_____

Question 5 **[3]**

Label the following diagram of the plant using:



a

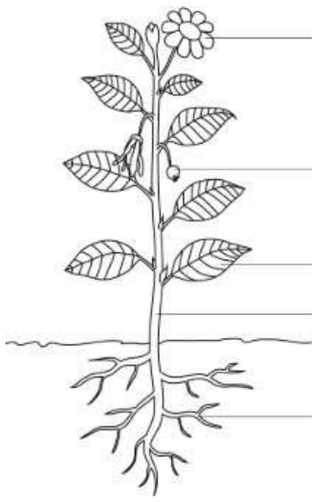
b

c

TOTAL: [15]

TERM 1 TEST – MEMORANDUM			
NS & TECH **GRADE 4** **MEMORANDUM** **TERM 1** **15 MARKS** **30 MINUTES**			
CAPS TOPIC	**Questions**	**Expected answer(s)**	**Marks**
	1		
Structure of plants and animals	1.1	B✓	1
What plants need to grow	1.2	C✓	1
Need for a habitat	1.3	C✓	1

Living and non-living things	1.4	C✓	1
	2		
Living and non-living things	2.1	D✓	1
Structure of plants and animals	2.2	A✓	1
Structure of plants and animals	2.3	B✓	1
Structure of plants and animals	2.4	C✓	1
	3		
Living and non-living things	3.1	a. Non-Living things✓ b. Cannot carry out all of the seven life processes✓	½ ½
Living and non-living things	3.2	a. Living things ✓ b. Carries out all of the seven life process✓	½ ½
	4		
Habitats of animals	4	A fish lives in water✓ An elephant lives on land✓	1 1

	5		
Structures of plants and animals	5	 a. Flower b. Seed c. Stem	3
		TOTAL	**15**