

2021 Annual Teaching Plan
Natural Sciences and Technology

Grade 4

Life and Living

Term 1 45 days	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
CAPS Topic	Living and non-living things (2 weeks)		Structure of plants and animals (2½ weeks)		What plants need to grow (1 week)	Habitats of animals (2 weeks)		Structures for animal shelters (2½ weeks)		
Core Concepts, Skills and Values	<ul style="list-style-type: none"> Living things Non-living things 		<ul style="list-style-type: none"> Structure of plants Structure of animals 		<ul style="list-style-type: none"> Conditions for growth 	<ul style="list-style-type: none"> Different habitats Need for a habitat 		<ul style="list-style-type: none"> Animal shelters 		
Resources (other than textbook) to enhance learning	<ul style="list-style-type: none"> Examples and pictures of living and non-living things, including plants, animals, bread mould Seeds Yeast Pictures of hatched eggs 		<ul style="list-style-type: none"> Pictures / examples of plant parts Pictures of animals 		<ul style="list-style-type: none"> Seeds and cuttings Rulers and measuring tape 	<ul style="list-style-type: none"> Pictures of plants and animals and their habitats 		<ul style="list-style-type: none"> Pictures and examples of animal shelters 		
Informal Assessment	<ul style="list-style-type: none"> Use pictures and read case studies to distinguishing between living and non-living things with reasons. Use everyday life experiences and examples to describe the seven life processes. Identifying the different parts of a flowering plant 		<ul style="list-style-type: none"> Compare the different parts of a plant (roots, stems and leaves) in terms of their size, colour and shape. Use various drawings and or pictures to label basic structure flowering plants and animals. Use pictures of various animals to compare their differences and similarities 		<ul style="list-style-type: none"> Do a scientific investigation to find out what seeds need to germinate and grow into new plants. Keep a diary during the investigation to record observations and the results. Make predictions of the result of your investigation. 	<ul style="list-style-type: none"> Identify, draw and describe the habitat in your school. Your drawing should have ONLY the plants and little animals that you can see in your habitat. Identify the habitats of indigenous South African plants and animals. Compare natural and man-made animal shelters. Design and draw an animal shelter, taking into account its: purpose, shape, size and materials. Evaluate the suitability of the design. 				
SBA (Formal Assessment)	<ul style="list-style-type: none"> Practical task / Investigation Test 									

Matter and Materials

Term 2 51 days	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
CAPS Topic	Materials around us (3½ weeks)			Solid materials (2 weeks)		Strengthening materials (2 weeks)		Strong Frame Structures (2½ weeks)		
Core Concepts, Skills and Values	<ul style="list-style-type: none"> Solids; Liquids & Gases Change of state The water cycle 			<ul style="list-style-type: none"> Raw and manufactured materials Properties of materials 		<ul style="list-style-type: none"> Ways to strengthen materials 		<ul style="list-style-type: none"> Struts & Frame Structures Indigenous Structures 		
Resources (other than textbook) to enhance learning	<ul style="list-style-type: none"> Examples of materials and substances including wood, stone, plastic, fabric, water, juice, tea, air, cooking oil, cooking gas Examples of different substances such as ice, butter, wax, ice cream, chocolate Video clips from internet 			<ul style="list-style-type: none"> Examples of raw and manufactured materials to examine the properties such as glass products, leather, ceramics, fabrics, wooden items, plastic products 		<ul style="list-style-type: none"> Paper, wooden dowels (30cm x 10mm) or sticks, sticky tape, paper fasteners to make struts 		<ul style="list-style-type: none"> Pictures of frame structures Paper, wooden dowels (30cmX10mm) or sticks, sticky tape, paper fasteners 		
Informal Assessment	<ul style="list-style-type: none"> Investigate and write down the properties of solids, liquids and gases. Compare the properties of solids, liquids and gases Describe and draw the stages of the water cycle. Make a model of a water cycle 			<ul style="list-style-type: none"> Explain the difference between raw and manufactured materials. Investigating materials that objects are made from. Describing the properties of raw and manufactured materials. Classifying materials into raw or manufactured. Investigate the properties of raw and manufactured materials such as; hard or soft; tough or fragile; stiff or flexible; strong in tension; etc. Investigate how tough different materials are. Investigate material that is the most flexible for a ruler Investigating the flexibility of a ruler. Record the results in the table and use them to plot a graph on graph paper. Identifying different materials that are strong in tension Link different materials with the purpose of the object 		<ul style="list-style-type: none"> Explore different ways to strengthen paper, e.g. tubing and folding. Investigate the strongest pillar and draw a table and a bar graph of the results. Discuss the results and draw conclusions. Exploring ways to make a strong structure Design and make a bridge. It must span a minimum length of 1 m. It must be able to support a load (bags of coins and books) Identify materials used in traditional homes, e.g.; Zulu hut, Xhosa rentable, etc. Compare modern and traditional structures and materials 		<ul style="list-style-type: none"> Investigate & Exploring which type of struts form strong and stable structures. (struts in triangular and square shapes) Designing, making & Evaluating a strong structure using tabular struts e.g. models of a tower; bridge; pylon; chair. 		
SBA (Formal Assessment)	<ul style="list-style-type: none"> Test 									

Energy and Change

Term 3 52 days	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
CAPS Topic	Energy and Energy transfer (2½ weeks)		Energy around us (2½ weeks)			Movement & Energy in a System (2½ weeks)		Energy and Sound (2½ weeks)		
Core Concepts, Skills and Values	<ul style="list-style-type: none"> Energy for life Energy from the Sun 		<ul style="list-style-type: none"> Energy Input and output energy 			<ul style="list-style-type: none"> Movement & Musical Instruments 		<ul style="list-style-type: none"> Vibrations and sound Making sounds Noise pollution 		
Resources (other than textbook) to enhance learning	<ul style="list-style-type: none"> Pictures and examples of a selection of machines and appliances including a kettle, stove, torch, radio, iron, fan/hair dryer, car/bicycle, drum Video clips from the internet 					<ul style="list-style-type: none"> Examples of musical instruments Materials to make musical instruments 		<ul style="list-style-type: none"> Pictures of the human ear, it's parts and how one hears Examples of musical instruments made by learners Video clips from the internet 		
Informal Assessment	<ul style="list-style-type: none"> Describe the transfer of energy from the Sun. Identify activities that people, and animals do that require energy. Draw and explain how animals get energy for life processes from the Sun Investigate the input and output energy of appliances, e.g. a kettle, stove, torch, radio, iron, fan/hair dryer, car/bicycle, drum, etc. 					<ul style="list-style-type: none"> Research about the various indigenous musical instruments and how they work. Investigate how musical instruments make music. Design and make your own musical instrument. 		<ul style="list-style-type: none"> Investigate how different types of movement causes vibration that cause different sound using elastic band. Investigate how to make sounds louder and travel further. Identify and describe sources of noise pollution. Research about the health risk of exposure to loud music and explain to your peers how best to protect their hearing. 		
SBA (Formal Assessment)	<ul style="list-style-type: none"> Test 									

Planet Earth and Beyond

Term 4 47 days	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
CAPS Topic	Planet Earth (2 weeks)		The Sun (1 week)	The Earth & Sun (1 week)	The Moon (2 weeks)		Rocket Systems (2 weeks)	
Core Concepts, Skills and Values	<ul style="list-style-type: none"> Features of The Earth Earth & Space 		<ul style="list-style-type: none"> Our Closest Star Input and output energy 	<ul style="list-style-type: none"> Moving around the Sun The Sun & Life 	<ul style="list-style-type: none"> Features of the Moon Phases of the Moon Moon Stories 		<ul style="list-style-type: none"> Modelling of a Rocket 	
Resources (other than textbook) to enhance learning	<ul style="list-style-type: none"> Pictures of Earth showing its main features Pictures of the Moon; Sun and planets Models of the Earth, Moon and Sun Video clips from the internet 				<ul style="list-style-type: none"> Calendar for recording phases of the Moon Cultural stories about the Moon Video clips from the internet 		<ul style="list-style-type: none"> Apparatus including balloons of different sizes, straws and fishing line, hooks, measuring tape 	

<p>Informal Assessment</p>	<ul style="list-style-type: none"> • Describe and Identify the main features of the Earth • Draw or make models of the Earth • Identify and describe main features of the Sun • Draw or make models of the Sun • Explain how the Earth moves around the Sun • Interpreting models and pictures of Solar System 	<ul style="list-style-type: none"> • Investigate how the changing shape of light on the moon gives different phases of the Moon • Identify the different phases of the Moon • Draw or make models of the Moon 	<ul style="list-style-type: none"> • Making a model of a balloon rocket, test it • Investigating distances travelled by different balloon rockets • Evaluating balloon rockets
<p>SBA (Formal Assessment)</p>	<ul style="list-style-type: none"> • Test • Practical/Investigation 		

Major Process and Design Skills

The teaching and learning of Natural Sciences and Technology involves the development of a range of process and design skills that may be used in everyday life, in the community and in the workplace. Learners also develop the ability to think objectively and use a variety of forms of reasoning while they use these skills. Learners can gain these skills in an environment that taps into their curiosity about the world, and that supports creativity, responsibility, and growing confidence.

The following are the cognitive and practical process and design skills that learners will be able to develop in Natural Sciences and Technology

1. *Accessing and recalling information* – being able to use a variety of sources to acquire information, and to remember relevant facts and key ideas, and to build a conceptual framework
2. *Observing* – noting in detail objects, organisms and events
3. *Comparing* – noting similarities and differences between things
4. *Measuring* – using measuring instruments such as rulers, thermometers, clocks and syringes (for volume)
5. *Sorting and classifying* – applying criteria in order to sort items into a table, mind-map, key, list or other format
6. *Identifying problems and issues* – being able to articulate the needs and wants of people in society
7. *Raising questions* – being able to think of, and articulate relevant questions about problems, issues, and natural phenomena
8. *Predicting* – stating, before an investigation, what you think the results will be for that particular investigation
9. *Hypothesizing* – putting forward a suggestion or possible explanation to account for certain facts. A hypothesis is used as a basis for further investigation which will prove or disprove the hypothesis
10. *Planning investigations* – thinking through the method for an activity or investigation in advance. Identifying the need to make an investigation a fair test by keeping some things (variables) the same whilst other things will vary
11. *Doing investigations* – this involves carrying out methods using appropriate apparatus and equipment, and collecting data by observing and comparing, measuring and estimating, sequencing, or sorting and classifying. Sometimes an investigation has to be repeated to verify the results.
12. *Recording information* – recording data from an investigation in a systematic way, including drawings, descriptions, tables and graphs
13. *Interpreting information* – explaining what the results of an activity or investigation mean (this includes reading skills)
14. *Designing* – showing (e.g. by drawing) how something is to be made taking into account the design brief, specifications and constraints
15. *Making/constructing* – building or assembling an object using appropriate materials and tools and using skills such as measuring, cutting, folding, rolling, gluing
16. *Evaluating and Improving products* – using criteria to assess a constructed object and then stating or carrying out ways to refine that object
17. *Communicating* – using written, oral, visual, graphic and other forms of communication to make information available to other people