

## NATURAL SCIENCES AND TECHNOLOGY: GRADE 5

GRADE 5 TERM 1				
STRANDS: NATURAL SCIENCES: LIFE & LIVING TECHNOLOGY: STRUCTURES				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
2 ½ weeks (8 ¾ hours)	Plants and animals on Earth	<p><b>Many different plants and animals</b></p> <ul style="list-style-type: none"> <li>there are many different plants and animals living in different habitats on Earth* (South Africa has a wide variety of indigenous plants and animals and their habitats)</li> </ul> <p><b>Inter-dependence</b></p> <ul style="list-style-type: none"> <li>plants and animals depend on each other</li> <li>they also depend on the resources available (such as air, water, soil, food, and places to hide) in their own habitats</li> </ul> <p><b>Animal types</b></p> <ul style="list-style-type: none"> <li>there are many different kinds of animals,               <ul style="list-style-type: none"> <li>some do not have bones, and some have hard outer 'skins' or shells (invertebrates)</li> <li>some have bones (vertebrates)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>counting the number of plants in a given area and distinguishing them apart by looking at the shapes and colours of their leaves or flowers or fruits</li> <li>describing               <ul style="list-style-type: none"> <li>animals without bones, such as worms, millipedes, insects, spiders, scorpions, crabs</li> <li>animals with bones, such as fish, frogs, reptiles, birds, mammals</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Pictures of plants and animals</li> </ul>
<b>Notes:</b> * Plants and animals, and their habitats make up the total biodiversity of the Earth				

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STRANDS: NATURAL SCIENCES: LIFE & LIVING TECHNOLOGY: STRUCTURES				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
1 ½ weeks (5 ¼ hours)	<b>Animal skeletons</b>	<p><b>Skeletons of vertebrates</b></p> <ul style="list-style-type: none"> <li>• a vertebrate skeleton consists of bones and joints, and is inside the body</li> <li>• bones are hard and form a strong frame structure</li> <li>• a skeleton provides support for an animal's body and protection for its organs;               <ul style="list-style-type: none"> <li>- skull - protects the brain</li> <li>- backbone with vertebrae - protects the spinal cord</li> <li>- ribs - protect the lungs and heart</li> <li>- shoulder blades, arms, legs, hip bones – for movement</li> </ul> </li> </ul> <p><b>Movement</b></p> <ul style="list-style-type: none"> <li>• vertebrate animals can move because there are               <ul style="list-style-type: none"> <li>- muscles attached to the skeleton</li> <li>- joints between the bones***</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• looking at examples of skeletons including - fish, frogs, birds, reptiles, mammals (including humans), and identifying the following parts:               <ul style="list-style-type: none"> <li>- the skull</li> <li>- the backbone</li> <li>- ribs</li> <li>- limbs</li> <li>- shoulder and hip girdles**</li> </ul> </li> <li>• describing how different vertebrate animals move (including humans)</li> </ul>	<ul style="list-style-type: none"> <li>• Pictures and examples of animal skeletons / bones</li> </ul>
<p><b>Notes:</b> ** Not all animals have shoulder and hip girdles or limbs (such as fish and snakes)</p> <p>*** In this grade, details about how muscles are attached, and the structure of joints are not required</p>				

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Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
2 ½ weeks (8 ¾ hours)	Skeletons as structures	<b>Frame and shell structures</b> <ul style="list-style-type: none"> <li>a vertebrate skeleton is a frame structure (<i>also refer to grade 4 Matter &amp; Materials</i>)</li> <li>some invertebrate skeletons are shell structures such as that of a crab</li> </ul>	<ul style="list-style-type: none"> <li>making a model* of a vertebrate skeleton using struts made from rolled paper or drinking straws [<i>This can be used as a possible project</i>]</li> </ul>	<ul style="list-style-type: none"> <li>Paper, drinking straws, wooden dowels or sticks (30cm X 10mm), sticky tape, metal paper fasteners</li> </ul>
1 ½ week (5 ¼ hours)	Food chains	<b>Food and feeding</b> <ul style="list-style-type: none"> <li>green plants make their own food** and build their branches and stems using water and carbon dioxide from the air, and energy from sunlight. Plants use carbon dioxide from the air and release oxygen into the air</li> <li>animals need food to carry out their life processes (to move, feed, grow, sense the environment, excrete, breathe and reproduce)</li> <li>all animals depend on plants as their primary source of food (herbivores, carnivores and omnivores)</li> <li>a food chain describes the feeding relationships between plants and animals.</li> <li>a food chain               <ul style="list-style-type: none"> <li>starts with a plant, (produces foods)</li> <li>then follows with an animal that eats the plant</li> <li>after that with an animal that eats that animal</li> <li>includes the transfer of energy which flows from the plant through to the last animal in the chain</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>sequencing pictures and drawing plants and animals which form food chains with up to four organisms each, describing their relationships</li> </ul>	<ul style="list-style-type: none"> <li>Pictures of various plants and animals</li> </ul>

**Notes:** \* This is a problem solving activity, where learners have to work out how a skeleton fits together

\*\* This important process is called “photosynthesis.” However no further detail is required in this grade, learners will deal with it in detail only in higher grades

GRADE 5 TERM 1				
STRANDS: NATURAL SCIENCES: LIFE & LIVING TECHNOLOGY: STRUCTURES				Equipment and Resources:
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
2 weeks (7 hours)	Life Cycles	<p><b>Growth and development</b></p> <ul style="list-style-type: none"> <li>plants and animals grow and develop throughout their lives</li> <li>a life cycle describes the stages and processes that take place as a plant or animal grows and develops</li> <li>a life cycle describes how one generation of a plant or animal gives rise to the next generation through reproduction</li> <li>death can occur at any stage of the life cycle</li> <li>many animals care for their young in order for them to grow and develop</li> </ul>	<ul style="list-style-type: none"> <li>sequencing pictures and drawings of the stages of development in life cycles of               <ul style="list-style-type: none"> <li>a plant – identifying and labelling the stages (including seed, seedling, adult plant, flowering plant, fruiting plant) and some of the processes that occur (including germinating, growing, maturing, flowering, being pollinated and dispersing seeds)</li> <li>a vertebrate animal - identifying and labelling the stages [including baby, young animal, mature adults (male &amp; female)] and some of the processes that occur including growing, maturing, mating, producing eggs and babies</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Pictures of different stages in the development of various plants and animals</li> </ul>
<b>Assessment guidelines</b>		<p>This content and the associated concepts must be integrated with the aims and skills for Natural Sciences and Technology (<i>refer to Section 2</i>).</p> <ul style="list-style-type: none"> <li>Learners should read, write, draw and do practical tasks regularly</li> <li>Evidence of learner's work, including assessments, should be kept in the learner's notebook</li> </ul> <p>School-based assessment (including practical tasks and class tests), checking for correctness, and providing constructive feedback should be done regularly.</p> <p>Allow for a maximum of 7 hours to be used for assessment throughout the term. For more detailed guidelines on assessment, <i>refer to Section 4</i>.</p>	<p><b>Check the learner's knowledge and that they can:</b></p> <ul style="list-style-type: none"> <li>demonstrate an understanding of the variety of plants and animals on Earth and their inter-dependence</li> <li>identify animals with and without bones</li> <li>identify and describe different bones and their functions in a vertebrate skeleton</li> <li>use struts to make a model of a vertebrate animal skeleton</li> <li>show the links and relationships in different food chains</li> <li>show the stages and processes in the life cycle of a plant and an animal</li> </ul>	

## GRADE 5 TERM 2

**STRANDS: NATURAL SCIENCES: MATTER & MATERIALS**  
**TECHNOLOGY: PROCESSING**

**Equipment and  
Resources**

Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	Equipment and Resources
2 weeks (7 hours)	<b>Metals and non-metals</b>	<p><b>Properties of metals</b></p> <ul style="list-style-type: none"> <li>• metals are used to make things because they have certain properties</li> <li>• some properties of metals               <ul style="list-style-type: none"> <li>- shiny</li> <li>- hard</li> <li>- strong</li> <li>- can be hammered, shaped (malleable) and made into thin wires without breaking (ductile)</li> <li>- melt at high temperatures</li> </ul> </li> <li>• metals are mined from the Earth*</li> </ul> <p><b>Properties of non-metals</b></p> <ul style="list-style-type: none"> <li>• non-metals are used to make things because they have certain properties</li> <li>• some properties** of solid non-metals               <ul style="list-style-type: none"> <li>- dull</li> <li>- can break easily (brittle)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Investigating, comparing and recording</b> the properties of some metal objects (such as copper wire, coins, nails, cooking pots, knives and forks) and some non-metal objects (such as a piece of chalk, a stone, a pile of sand, a piece of coal)</li> <li>• <b>Investigating</b> ways to make old and dull metal objects shiny again</li> </ul>	<ul style="list-style-type: none"> <li>• Examples of metal objects such as copper wire, coins, nails, cooking pots, knives and forks</li> <li>• Examples of non-metal objects such as a piece of chalk, a pile of sand, a piece of coal</li> </ul>

**Notes:** \* How and where metals are mined is covered in Social Sciences

\*\* There are many different non-metals and they have a variety of different properties. Here the focus is only on two of the most general properties

GRADE 5 TERM 2				
STRANDS: NATURAL SCIENCES: MATTER & MATERIALS TECHNOLOGY: PROCESSING				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
2 ½ weeks (8 ¾ hours)	Uses of metals	<p><b>Other properties of metals</b></p> <ul style="list-style-type: none"> <li>metals are useful because of their special properties               <ul style="list-style-type: none"> <li>metals conduct heat</li> <li>some metals are magnetic and some are not</li> <li>only iron rusts (some metals tarnish or become dull)</li> </ul> </li> </ul> <p><b>Uses of metals</b></p> <ul style="list-style-type: none"> <li>metals are used to make things such as coins, wire, jewellery, furniture, buildings and bridges, motor cars, kitchen utensils, roofs</li> </ul>	<ul style="list-style-type: none"> <li>testing different metal objects (such as coins, iron filings, nails, drawing pins, paper clips, wire) to see if they are attracted by a magnet</li> <li>placing different objects in water (such as coins, iron filings, nails, drawing pins, paper clips, wire) to see if they rust***</li> <li><b>researching</b> and writing about the uses of metals and giving reasons for their use**** <i>[This can be used as a possible project]</i></li> </ul>	<ul style="list-style-type: none"> <li>Magnets and objects such as coins, iron filings, nails, drawing pins, paper clips, wire</li> </ul>
<p><b>Notes:</b> *** Rusting is a slow process; learners carry on with other work while waiting for the results</p> <p>**** Focus on uses of metals in daily life</p>				

## GRADE 5 TERM 2

**STRANDS: NATURAL SCIENCES: MATTER & MATERIALS**  
**TECHNOLOGY: PROCESSING**

**Equipment and  
Resources**

Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	Equipment and Resources
3 ½ weeks (12 ¼ hours)	<b>Processing materials</b>	<p><b>Combining materials</b></p> <ul style="list-style-type: none"> <li>• materials can be processed to make new materials/ products, such as               <ul style="list-style-type: none"> <li>- mixing and setting (such as plaster of Paris (or Polyfilla) and water to make plaster)</li> <li>- mixing and setting (such as sand, gravel, cement and water to make concrete)</li> <li>- mixing (such as flour and water to make a sticky paste that can be used as glue)</li> <li>- mixing and cooking (such as making dough)</li> <li>- mixing and cooling (such as jelly powder and water to make jelly)</li> <li>- mixing, drying and/or firing (such as wet clay and straw to make clay bricks)</li> </ul> </li> <li>• the properties of the new materials/products may be different from the properties of the materials we started with</li> </ul>	<ul style="list-style-type: none"> <li>• processing selected* different materials, recording and comparing their properties before and after</li> <li>• writing about the uses of these processed materials/ products</li> </ul>	<ul style="list-style-type: none"> <li>• Materials and substances such as: plaster of Paris(or Polyfilla), sand,gravel, cement, flour, ingredients to make dough, jelly powder, wet clay and straw</li> </ul>

**Notes:** \* Learners need not carry out all these examples, but should experience at least two of them.

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STRANDS: NATURAL SCIENCES: MATTER & MATERIALS TECHNOLOGY: PROCESSING				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
2 weeks (7 hours)	Processed materials	<p><b>Properties and uses</b></p> <ul style="list-style-type: none"> <li>materials such as plaster of Paris, concrete, fabrics, ceramics and glass, plastics and paints, have their own special properties</li> <li>processed materials are useful because of their special properties. They can be strong, durable, waterproof, fire resistant, have interesting colours or textures</li> </ul> <p><b>Traditional processing</b></p> <ul style="list-style-type: none"> <li>in Africa people have processed materials for hundreds of years to make               <ul style="list-style-type: none"> <li>clay pots and bricks</li> <li>baskets, hats, mats, thatched roofs made from plant fibre such as grasses and reeds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>finding examples of where and how different non-metal materials are used at home, school and in the community and explaining the properties that make them useful               <ul style="list-style-type: none"> <li>presenting findings through writing, drawing and pictures <i>[This can be used as a possible project]</i></li> </ul> </li> <li>making an object from clay (modelling)</li> <li>finding examples of objects made from plant fibre (by weaving and stitching)</li> </ul>	<ul style="list-style-type: none"> <li>Clay</li> <li>Pictures and examples of objects made by weaving plant material</li> </ul>
<b>Assessment guidelines</b>		<p>This content and the associated concepts must be integrated with the aims and skills for Natural Sciences and Technology (<i>refer to Section 2</i>).</p> <ul style="list-style-type: none"> <li>Learners should read, write, draw and do practical tasks regularly</li> <li>Evidence of learner's work, including assessments, should be kept in the learner's notebook</li> </ul> <p>School-based assessment (including practical tasks and class tests), checking for correctness, and providing constructive feedback should be done regularly.</p> <p>Allow for a maximum of 7 hours to be used for assessment throughout the term. For more detailed guidelines on assessment, <i>refer to Section 4</i>.</p>	<p><b>Check the learner's knowledge and that they can:</b></p> <ul style="list-style-type: none"> <li>compare the properties of some metal and some non-metal objects</li> <li>identify objects that are attracted by magnets</li> <li>identify objects that can rust in water</li> <li>process selected materials by mixing them and describe their properties before and after mixing</li> <li>describe the usefulness of different materials at home, school or community</li> </ul>	



## GRADE 5 TERM 3

STRANDS: NATURAL SCIENCES: ENERGY & CHANGE  
TECHNOLOGY: SYSTEMS & CONTROL

Equipment and  
Resources

Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	Equipment and Resources
3 weeks (10 ½ hours)	Stored energy in fuels	<p><b>Fuels</b></p> <ul style="list-style-type: none"> <li>energy is stored in fuels (including food*)</li> <li>we use fuels as sources of useful energy</li> <li>everyday fuels that we use include coal, wood, petrol, paraffin, gas and candle wax</li> <li>when we burn these fuels we get useful output energy such as heat and light</li> </ul> <p><b>Burning fuels</b></p> <ul style="list-style-type: none"> <li>fuels need heat to set them alight, and air (oxygen) to keep on burning</li> </ul> <p><b>Safety with fire</b></p> <ul style="list-style-type: none"> <li>fires can be a threat in our communities</li> </ul>	<ul style="list-style-type: none"> <li>examining various fuels including wood, coal, candle (wax), paraffin, peanut, a biscuit. Burning three different fuels from above, and comparing and describing the           <ul style="list-style-type: none"> <li>input energy needed to make them burn</li> <li>output energy obtained from the fuel</li> </ul> </li> <li><b>Investigating</b> how long a candle will burn when covered with different sized glass containers (the candles will stop burning when all the oxygen is used up)</li> <li>writing and drawing about fires in our communities including causes, prevention and act out what action to take during a fire [<i>This can be used as a possible project</i>]</li> </ul>	<ul style="list-style-type: none"> <li>Examples of substances including wood, coal, candle (wax), paraffin, peanut, a biscuit.</li> <li>Candles and different sized glass containers</li> </ul>

**Notes:** \* Food is often described as fuel for the body. Oxygen is required to release energy from food. This process is called respiration and is not a focus for grade 5

GRADE 5 TERM 3				
STRANDS: NATURAL SCIENCES: ENERGY & CHANGE TECHNOLOGY: SYSTEMS & CONTROL				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
3 weeks (10 ½ hours)	Energy and electricity	<p><b>Cells and batteries</b></p> <ul style="list-style-type: none"> <li>energy can be stored in torch cells and batteries</li> <li>a circuit is a system that transfers electrical energy to where it is needed</li> </ul> <p><b>Mains electricity</b></p> <ul style="list-style-type: none"> <li>electricity from the power station is transferred in a circuit to our homes and back to the power station</li> <li>a power station needs a source of energy</li> <li>the source of energy in a power station can be a fuel such as coal**</li> </ul> <p><b>Safety with electricity</b></p> <ul style="list-style-type: none"> <li>safety precautions should be taken when using electricity</li> </ul>	<ul style="list-style-type: none"> <li>connecting up a cell, wires, and a light bulb to make a simple circuit</li> <li>drawing and writing to trace how the electricity comes from the power station to our homes/schools, including power station, pylons, substation, electricity boxes, wall sockets, plugs and appliances</li> </ul>	<ul style="list-style-type: none"> <li>Cells (batteries), lengths of wire, light bulbs</li> </ul>
<p><b>Notes:</b> ** The focus here is on coal-fired power stations. There are also other power stations such as hydro-electric and nuclear power stations</p>				

## GRADE 5 TERM 3

**STRANDS: NATURAL SCIENCES: ENERGY & CHANGE**  
**TECHNOLOGY: SYSTEMS & CONTROL**

**Equipment and  
Resources**

Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	Equipment and Resources
1 week (3 ½ hours)	Energy and movement	<p><b>Elastic and springs</b></p> <ul style="list-style-type: none"> <li>we can make things move using stretched or twisted elastic and compressed springs</li> <li>when we stretch or twist elastic or compress a spring, we store energy in it</li> <li>when we release the elastic or spring again, we get movement energy</li> </ul>	<ul style="list-style-type: none"> <li>describing how things work that use stretched elastic bands and compressed springs in order to move, including a catapult*, elastic powered aeroplanes, 'jack-in-a-box'</li> </ul>	<ul style="list-style-type: none"> <li>Elastic bands and compressed springs, a catapult, elastic powered aeroplanes, 'jack-in-a-box'</li> </ul>
3 weeks (10 ½ hours)	Systems for moving things	<p><b>Wheels and axles</b></p> <ul style="list-style-type: none"> <li>many vehicles are systems that use wheels and axles</li> <li>wheels and axles help vehicles to move more easily</li> </ul>	<ul style="list-style-type: none"> <li>identifying different vehicles that have wheels and axles including prams, bicycles, motor bikes, cars, trucks</li> <li>making wheels and axles and evaluating whether they move easily (use materials such as bottle tops, round tins or cardboard circles for the wheels, sosatie sticks or dowels and straws for the axles)</li> </ul>	<ul style="list-style-type: none"> <li>Apparatus including cardboard, bottle tops, round tins or cardboard circles for the wheels, sosatie sticks or dowels and straws for the axles</li> </ul>
<b>Assessment guidelines</b>		<p>This content and the associated concepts must be integrated with the aims and skills for Natural Sciences and Technology (<i>refer to Section 2</i>).</p> <ul style="list-style-type: none"> <li>Learners should read, write, draw and do practical tasks regularly</li> <li>Evidence of learner's work, including assessments, should be kept in the learner's notebook</li> </ul> <p>School-based assessment (including practical tasks and class tests), checking for correctness, and providing constructive feedback should be done regularly.</p> <p>Allow for a maximum of 7 hours to be used for assessment throughout the term. For more detailed guidelines on assessment, <i>refer to Section 4</i>.</p>	<p><b>Check the learner's knowledge and that they can:</b></p> <ul style="list-style-type: none"> <li>describe the output energy we get from burning most fuels</li> <li>explain what a fire needs to start and continue burning (fuel, heat, oxygen)</li> <li>demonstrate an understanding of the causes of fire, along with methods of prevention and what actions to take during a fire</li> <li>draw and label the components of a simple circuit correctly</li> <li>trace the electricity from the power station to our homes/schools</li> <li>describe the output energy (movement) obtained from a stretched elastic band or compressed spring</li> <li>make and evaluate sets of wheels and axles</li> </ul>	

**Notes:** \* A catapult can be extremely dangerous – Teacher demonstration only

GRADE 5 TERM 4				
STRANDS: NATURAL SCIENCES: PLANET EARTH & BEYOND TECHNOLOGY: SYSTEMS & CONTROL				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
1 week (3 ½ hours)	Planet Earth	<b>The Earth moves</b> <ul style="list-style-type: none"> <li>the Earth travels in an orbit (pathway) around the Sun</li> <li>the Earth takes about 365 days to travel once around the Sun, this is called a year</li> <li>the Earth spins on its own axis</li> <li>the Earth takes about 24 hours to spin once, this is called a day</li> </ul>	<ul style="list-style-type: none"> <li>interpreting pictures and models of the solar system</li> <li>making drawings and writing about the Earth and its orbit around the Sun</li> </ul>	<ul style="list-style-type: none"> <li>Pictures and models of Earth, Moon, Sun and planets.</li> <li>Light source such as torch, lamp, or candle</li> <li>Samples of different types of soil</li> <li>Measuring cylinders, funnels and filter paper, beakers</li> <li>Seeds and rulers to measure length</li> </ul>

## GRADE 5 TERM 4

**STRANDS: NATURAL SCIENCES: PLANET EARTH & BEYOND**  
**TECHNOLOGY: SYSTEMS & CONTROL**

**Equipment and  
Resources**

Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
<p><b>2 ½ weeks</b> <b>(8 ¾ hours)</b></p>	<p><b>Surface of the Earth</b></p>	<p><b>Rocks</b></p> <ul style="list-style-type: none"> <li>• the surface of the Earth is called the crust, and consists of rocks (even under the oceans), and soil</li> <li>• soil, air, water and sunlight support life on Earth</li> </ul> <p><b>Soil comes from rocks</b></p> <ul style="list-style-type: none"> <li>• the land is made up of rocks, subsoil and top soil</li> <li>• soil supports life on Earth</li> <li>• top soil lies on the surface               <ul style="list-style-type: none"> <li>- top soil is formed when rocks break into small grains over time</li> </ul> </li> </ul> <p><b>Soil types</b></p> <ul style="list-style-type: none"> <li>• soil is usually a mixture of different types of soil grains in different proportions               <ul style="list-style-type: none"> <li>- sandy soil – has a high proportion of coarse sand grains</li> <li>- clayey soil – has a high proportion of fine grains of clay</li> <li>- loamy soil – has a mixture of sand, clay and other soil grains. Loamy soil also contains humus (decomposed compost)</li> </ul> </li> <li>• the soil also has air, water, remains of dead organisms and very small living organisms in it</li> <li>• soil forms very slowly in nature – once topsoil is lost, it cannot be replaced, and thus we need to conserve it</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Investigating</b> – different soil types               <ul style="list-style-type: none"> <li>- writing and drawing about the colour, smell and texture of the soil</li> <li>- measuring and recording on a table how much water different soils can hold*</li> <li>- using the results to draw bar graphs</li> </ul> </li> </ul> <p style="text-align: center;"><b>and / or</b></p> <ul style="list-style-type: none"> <li>• <b>Investigating</b> – growing seedlings in different soil types** <i>(Integrating with Life &amp; Living)</i> <ul style="list-style-type: none"> <li>- measuring, recording and comparing the heights of the seedlings</li> <li>- using the results to draw bar graphs <i>[This can be used as a possible project]</i></li> </ul> </li> </ul>	
<p><b>Notes:</b> * The same volumes of soil and water must be used to make it a fair test            ** This investigation can be done while continuing with other work</p>				

GRADE 5 TERM 4				
STRANDS: NATURAL SCIENCES: PLANET EARTH & BEYOND TECHNOLOGY: SYSTEMS & CONTROL				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
2 weeks (7 hours)	<b>Sedimentary rocks</b>	<p><b>Formation of sedimentary rock</b></p> <ul style="list-style-type: none"> <li>• sedimentary rocks are formed over a very long time in the following way:               <ul style="list-style-type: none"> <li>- first, rocks break down into small grains</li> <li>- then, mud and sand is moved by wind and water</li> <li>- after that, mud and sand gets deposited in low lying areas</li> <li>- over time, new layers of mud and sand are deposited on top of existing layers</li> <li>- after a very long time, these layers become compacted and hardened and form sedimentary rock</li> </ul> </li> <li>• sedimentary rocks always have visible layers within the rock</li> <li>• examples of sedimentary rock are shale, sandstone and limestone</li> </ul> <p><b>Uses of sedimentary rock</b></p> <ul style="list-style-type: none"> <li>• limestone is used to make cement</li> <li>• sandstone and shale are used in buildings</li> </ul>	<ul style="list-style-type: none"> <li>• making a series of drawings to show a rock breaking down into smaller grains over time</li> <li>• drawing and explaining how sedimentary rocks are formed</li> <li>• interpreting pictures showing the layers in sedimentary rocks</li> <li>• looking at specimens/pictures of sedimentary rock including shale, sandstone and limestone</li> </ul>	<ul style="list-style-type: none"> <li>• Pictures and or samples of sedimentary rocks such as limestone and sandstone</li> </ul>

## GRADE 5 TERM 4

**STRANDS: NATURAL SCIENCES: PLANET EARTH & BEYOND  
TECHNOLOGY: SYSTEMS & CONTROL**

**Equipment and Resources**

Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	Equipment and Resources
2 ½ weeks (8 ¾ hours)	<b>Fossils</b>	<p><b>Fossils in rock</b></p> <ul style="list-style-type: none"> <li>• fossils are the remains of ancient plants and animals preserved in rock               <ul style="list-style-type: none"> <li>- fossils are found in some layers of sedimentary rock</li> <li>- fossils are evidence/a record of the history of life on Earth</li> </ul> </li> <li>• there are two main types of fossils; body and trace fossils</li> </ul> <p><b>Body and trace fossils</b></p> <ul style="list-style-type: none"> <li>• body fossils form from the hard parts of plant and animal bodies including teeth, bones, shells, stems, leaves and seeds</li> <li>• trace fossils form from traces left by animals including footprints, nests, eggs and droppings</li> <li>• some features of fossils resemble the features of plants and animals living today</li> </ul> <p><b>Importance of South African fossils</b></p> <ul style="list-style-type: none"> <li>• South Africa has a particularly rich fossil record of plants, animals and early humans</li> <li>• important fossils found in South Africa include the Coelacanth and African dinosaurs</li> <li>• the “Cradle of humankind” is one of the sites where important fossils of humankind have been found in South Africa</li> </ul>	<ul style="list-style-type: none"> <li>• making a model to show the layers of sedimentary rocks with fossils embedded in them (using a medium such as play dough, clay, plaster of Paris, and remains of living things such as leaves, shells and bones)</li> <li>• interpreting pictures of fossils and comparing them to plants and animals living today</li> <li>• reading about fossils including the Coelacanth and African dinosaurs</li> </ul>	<ul style="list-style-type: none"> <li>• Pictures and or samples of sedimentary rocks</li> <li>• Play dough, clay, plaster of Paris, variety of parts of plants and animals</li> <li>• Pictures of fossils</li> <li>• Information texts about South African fossils</li> </ul>

GRADE 5 TERM 4				
STRANDS: NATURAL SCIENCES: PLANET EARTH & BEYOND TECHNOLOGY: SYSTEMS & CONTROL				Equipment and Resources
Time	Topic	Content & Concepts	Suggested Activities: Investigations, practical work, and demonstrations	
<b>Assessment guidelines</b>		<p>This content and the associated concepts must be integrated with the aims and skills for Natural Sciences and Technology (<i>refer to Section 2</i>).</p> <ul style="list-style-type: none"> <li>• Learners should read, write, draw and do practical tasks regularly</li> <li>• Evidence of learner's work, including assessments, should be kept in the learner's notebook</li> </ul> <p>School-based assessment (including practical tasks and class tests), checking for correctness, and providing constructive feedback should be done regularly.</p> <p>As this is the exam term, the final two weeks may be required for revision of the year's work and for examinations.</p> <p>For more detailed guidelines on assessment, <i>refer to Section 4</i>.</p>	<p><b>Check the learner's knowledge and that they can:</b></p> <ul style="list-style-type: none"> <li>• demonstrate the Earth's movement in its orbit around the Sun</li> <li>• describe the Earth's movement on its own axis</li> <li>• identify the main elements (soil, air, water, sunlight) that support life on Earth</li> <li>• identify and describe different soil types correctly</li> <li>• explain the formation of sedimentary rock</li> <li>• distinguish between body and trace fossils</li> <li>• explain aspects of South Africa's fossil record</li> </ul>	