



basic education

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CURRICULUM AND ASSESSMENT POLICY STATEMENT GRADE R-5 FOR LEARNERS WITH SEVERE INTELLECTUAL DISABILITY

NATURAL SCIENCES

GRADE 4-5

Curriculum and Assessment
Policy Statement Grade R-5
for learners with Severe
Intellectual Disability

Contents

SECTION 1: INTRODUCTION TO THE CURRICULUM AND ASSESSMENT POLICY STATEMENT GRADES R TO 5 FOR LEARNERS WITH SEVERE INTELLECTUAL DISABILITY.....	5
1.1. Background.....	5
1.2. Overview.....	7
1.3. General aims of the Curriculum and Assessment Policy Statement Grades R to 5 for learners with Severe Intellectual Disability	8
1.3.1. The aims of the Curriculum and Assessment Policy Statement Grades R to 5 for learners with severe intellectual disability.....	9
1.4. Subjects and time allocation	11
2. SECTION 2: INTRODUCTION TO NATURAL SCIENCES	14
2.1. What is Natural Sciences?	14
2.2. Topics to be studied in Natural Sciences	15
2.3. Specific Aims:	15
2.4. Requirements for Natural Sciences as a subject.....	17
2.4.1. Time Allocation	17
2.4.2. Resources	18
2.4.3. Human Resources	18
2.4.4. Resources	18
2.4.5. Infrastructure, equipment and finances	20
2.4.6. Infrastructure.....	21
2.4.7. Finances	21
2.5. Career opportunities	21
3. SECTION 3:.....	22
OVERVIEW OF TOPICS PER TERM AND ANNUAL TEACHING PLANS	22

3.1.	Content Overview	22
3.1.1.	Content overview of topics	22
3.2.	Teaching plans	24
3.3.	Grade 4: Term 1	24
3.4.	Grade 4 Term 2	33
3.5.	Grade 4 term 3.....	41
3.6.	Grade 4 term 4.....	49
3.7.	Grade 5.....	56
3.8.	Grade 5 : Term 1	56
3.9.	Grade 5 Term 2	66
3.10.	GRADE 5 TERM 3	75
3.11.	GRADE 5 TERM 4	84
4.	SECTION 4: ASSESSMENT.....	90
4.1.	Introduction.....	90
4.2.	Assessment principles	91
4.2.1.	Definition.....	91
4.2.2.	Informal Assessment or Daily Assessment	92
4.2.3.	Formal Assessment	92
4.3.	Managing assessment	97
4.3.1.	Types of Assessment.....	97
4.3.2.	Planning Assessment	98
4.3.3.	Methods of Assessment.....	98
4.3.4.	Assessment tools/instruments to execute assessment	99
4.4.	School Assessment Programme	101

4.5.	Assessment programme across the five years.....	102
4.6.	Recording and Reporting	109
4.7.	Moderation of Assessment.....	110
4.7.1.	Moderation serves five purposes:	111
4.7.2.	Internal moderation	111
4.8.	General.....	111

SECTION 1: INTRODUCTION TO THE CURRICULUM AND ASSESSMENT POLICY STATEMENT GRADES R TO 5 FOR LEARNERS WITH SEVERE INTELLECTUAL DISABILITY

1.1. Background

The South African Constitution, Act 108 of 1996, enshrines the right of every child to access quality basic education without there being any form of discrimination. The Convention on the Rights of Persons with Disabilities, ratified by the Parliament of South Africa in 2007 (Article 24) requires Government to ensure that children with disabilities are able to access an inclusive, quality primary, compulsory education and secondary education on an equal basis with others in the communities in which they live and that persons with disabilities are not excluded from the general education.

There are learners participating in the General Education and Training Band who have an aptitude and interest in applied knowledge and vocational skills for whom the National Curriculum Statement, Grades R to 12 (NCS) needs to be differentiated to make it fully accessible. This would include learners with moderate to severe intellectual disability and learning difficulties. Knowledge and skills should be presented at a more functional level and at reduced depth and breadth, whilst a number of occupational subjects are also made available. They should be given an opportunity to receive an endorsed statement of achievement that is related to learning within their interest and aptitude.

This Learning Programme has been developed to respond more effectively to the needs of these learners who have been identified and assessed through the protocols outlined in the Policy on Screening, Identification, Assessment and Support of 2014. They will benefit from curriculum content that is aligned to the Foundation and Intermediate Phase of the National Curriculum Statement at a more applied and functional level in accordance with their age, interest and aptitude.

It is critical, that through flexibility and differentiated methodologies, learners enrolled for these differentiated subjects will be able to progress with regard to applied competencies, even where they might not be able to attain the minimum requirements set for the different grades. There should always be high expectations for all learners and the necessary scaffolding and learning support to master foundational competencies relevant to the specific subject. They should be in a position to demonstrate the values and practical competencies that they have mastered which will make it possible for them to progress to either the Technical Occupational pathway or the world of work.

The learning programme is structured in such a way that it makes provision for a wide spectrum of learners with moderate to severe intellectual disability and learning difficulties across the age span. It is aimed at the full development of their human potential and sense of dignity and self-worth. It also allows for the development of their personality, talents and creativity, as well as their mental and physical abilities, cultural, social, environmental and economic competencies to their fullest potential with a view to enabling them to participate effectively and independently in a free society as adults (Convention on the Rights of Persons with Disabilities, 2006 and the White Paper on the Rights of Persons with Disabilities, 2015).

The learning programme for CSPID should be consulted in cases where a learner enters the CAPS Grades R – 5 for learners with Severe Intellectual Disability (SID) programme at a level where they require bridging to join the appropriate grade. The CSPID learning programme will provide a framework for educators to design down to ensure that there is a smooth transition into the SID learning programme.

The introduction of this Learning Programme within the National Curriculum Statement is aimed at strengthening of respect for human rights, fundamental freedoms and human diversity. It will provide learners in ordinary and in special schools across the range of competencies and aptitudes with conditions that ensure dignity, promote self-reliance and facilitate active participation in the school and in the community and offer the opportunity to obtain a recognised and accredited statement of achievement.

1.2. Overview

Through the policy document the Minister of Basic Education will be able to prescribe the minimum norms and standards for differentiated education in the General Education and Training band.

The following legal framework will be adhered to:

- (i) The United Nations Convention on the Rights of People with Disabilities adopted by the United Nation general Assembly on 13 December 2006 and ratified by the South African parliament on 5 June 2007;
- (ii) The White Paper on the Rights of Persons with Disabilities (2015);
- (iii) The National Education Policy Act (Act 27 of 1996);
- (iv) The South African Schools Act (Act 84 of 1996);
- (v) The National Curriculum Statement, Grades R to 12 (2011);
- (vi) The South African National Curriculum Framework for Children from Birth to Four (2015);
- (vii) National Early Learning and Development Standards for Children Birth to Four Years (NELDS) (2009);
- (viii) Section 11 of the Children's Act (Act 31 of 2005);
- (ix) Chapter 5, section 76 of the Children's Act as amended (2007);
- (x) Education White Paper 6 on Special Needs Education: Building an Inclusive Education and Training System (2001);
- (xi) Continuing Education and Training Act (2006 as amended by Act No 3 of 2012 and Act No 1 of 2013);
- (xii) Standards and Quality Assurance for General and Further Education and Training (June 2008, Revised April 2013);
- (xiii) Umalusi's Quality Assurance of Assessment: Directives, Guidelines and Requirements;
- (xiv) Guidelines to Ensure Quality Education and Support in Special Schools and Special School Resource Centres (2014);
- (xv) Policy on Screening, Identification, Assessment and Support (SIAS) (2014);
- (xvi) Guidelines for Responding to Diversity in the Classroom (2012);
- (xvii) National Protocol on Assessment (2011), specifically Chapter 9;
- (xviii) National Policy Pertaining to Promotion and Progression Requirements (2011);
- (xix) Learning Programme for Children with Severe to Profound Intellectual Disability.

1.3. General aims of the Curriculum and Assessment Policy Statement Grades R to 5 for learners with Severe Intellectual Disability

(a) The National Curriculum Statement Grades R to 9 gives expression to the knowledge, skills, values and attitudes worth learning in South African schools. This curriculum aims at removing the barriers that make it difficult for learners with moderate to severe intellectual disability and learning difficulties to access the curriculum. It will enable them to acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the curriculum promotes knowledge in local contexts, while being sensitive to global imperatives.

(b) The Curriculum and Assessment Policy Statement (CAPS) Grades R to 5 for learners with Severe Intellectual Disability serves the purpose of:

- Equipping learners, irrespective of their socio-economic background, race, gender, physical ability or intellectual ability, with the knowledge, skills and values necessary for self-fulfilment, and meaningful participation in society as citizens of a free country;
- Facilitating the transition of learners from education institutions to either protective or open employment;
- Providing employers with a sufficient profile of a learner's competences;
- Being sensitive to issues of diversity such as poverty, inequality, race, gender, language, age, and other factors;
- Valuing indigenous knowledge systems: acknowledging the rich history and heritage of this country as important contributors to nurturing the values contained in the Constitution; and
- Credibility, quality and efficiency: providing an education that is comparable in quality, breadth and depth to those of other countries.

(c) The curriculum is based on the following principles:

- Social transformation: ensuring that the educational imbalances of the past are redressed, and that equal educational opportunities are provided for all sections of the population;
- Active learning: encouraging an active approach to multi-sensory learning;
- Attainment of realistic, but high knowledge and skills levels: the minimum standards of knowledge and skills to be achieved at each grade are specified and set high, achievable standards in all subjects;

- Progression: content and context of each grade shows progression from simple to complex;
 - Human rights, inclusivity, environmental and social justice: infusing the principles and practices of social and environmental justice and human rights as defined in the Constitution of the Republic of South Africa.
- (d) Inclusivity should become a central part of the organisation's planning and teaching at each school. All teachers should have a sound understanding of how to recognise and address severe intellectual barriers to learning, and how to plan for diversity. The key to managing inclusivity is ensuring that barriers are identified and addressed by all the relevant support structures within the school community, including teachers, District-Based Support Teams, School-based Support Teams, parents and Special Schools as Resource Centres. To address barriers in the classroom, teachers should use various curriculum differentiation strategies such as those included in the Department of Basic Education's Guidelines for Responding to Learner Diversity in the Classroom (2011).

1.3.1. The aims of the Curriculum and Assessment Policy Statement Grades R to 5 for learners with severe intellectual disability

The specific aims of the CAPS Grades R to 5 for learners with Severe Intellectual Disability are to:

- Give recognition to learners who would follow the curriculum, irrespective if they meet the requirements and achieve the competencies as specified in the learning programmes;
- Provide a foundation of quality, standardised general education which will suit the needs of these learners and help prepare them to be more independent and better equipped for life after school. It may also enable the learners to enter a Technical Occupational curriculum;
- Promote Lifelong learning to enable learners to continue with further learning and skills development in sheltered or open employment;
- Prepare learners to function better in a fully inclusive society and employment; and
- Provide employers with a profile of the learner's competence.

1.3.1.1. Learners successfully completing the curriculum will be able to:

- Identify, select, understand and apply knowledge to the intended purpose and identify solutions to problems in the field of study;
- Demonstrate the necessary applied knowledge and skills identified for competence in a subject, as specified in the curriculum;
- Demonstrate knowledge and skills gained for purpose of formal communication and basic numerical operations;
- Use technology effectively and
- Demonstrate entrepreneurial skills that will enable them to create their own work in the contexts in which they live.

1.4. Subjects and time allocation

Instructional time for the Learning Programmes is 27½ hours in a five day cycle;

Subjects		Time
General Education		
Languages		5 – 14 years = 10 hours
Home Language		14 – 18 years = 6 hours
First additional language		14 – 18 year = 2 hours
Mathematics		5 – 14 years = 5 hours
		14 – 18 years = 3 hours
Life Skills	Life Skills – Personal and Social Wellbeing	5 – 14 years = 8 hours
		14 – 18 years = 5 hours
	Physical Education	1 hour
	Creative Arts	5 – 14 years = 3½ hours
		14 – 18 years = 1 hour
Natural Sciences		1½ hours
Skills subjects		14 – 18 years = 8 hours

Subjects CAPS Grades R to 5 for learners with severe intellectual disability: Electives	Time
Agricultural Studies Art and Crafts Civil Technology: Bricklaying and Plastering Civil Technology: Plumbing Civil Technology: Woodworking and Timber Consumer Studies: Food Production Consumer Studies: Needlework Hospitality Studies Mechanical Technology: Body Works: Panel Beating and or Spray Painting Mechanical Technology: Motor Mechanics Mechanical Technology: Welding Office Administration Personal Care: Ancillary Health Care Personal Care: Beauty and Nail Technology Personal Care: Hairdressing and Beauty Care Service Technology: Maintenance	8 hours
Total: General and Skills subjects	27½

The following table proposes the learner progression across the years in the curriculum.

Grades R – 3	Grades 4 – 5
<p>General Education</p> <p>Home Language</p> <p>Mathematics</p> <p>Life Skills</p> <ul style="list-style-type: none"> - Personal and Social wellbeing - Physical education - Creative arts 	<p>General Education</p> <p>Home Language</p> <p>First Additional Language</p> <p>Mathematics</p> <p>Life Skills</p> <ul style="list-style-type: none"> - Personal and Social wellbeing - Physical education - Creative arts - Natural Sciences <p>Skills subjects</p> <p>A minimum of 3 skills and maximum of 4 skills</p>

2. SECTION 2: INTRODUCTION TO NATURAL SCIENCES

Science is a systematic way of looking for explanations and connecting the ideas we have. This has been shaped by the search to understand the natural world through observation, testing and providing of ideas and has evolved to become part of the cultural heritage of all nations. In all cultures and in all times people have wanted to understand how the physical world works and have needed explanations to satisfy them.

2.1. What is Natural Sciences?

Natural Sciences is part of a selection of study areas that make up the Life Skills Learning Programme. Science is a systematic way of doing investigations through applying scientific knowledge to find explanations for phenomena. It is the **understanding of how things work in the world around us** and also support the learners to **understand their responsibility towards themselves, others and the environment**. It has a **direct link** with the **knowledge and skills taught in** various vocational subjects.

In this learning programme Natural Sciences is compulsory of all the learners in Grade 4 and 5 only as the groundwork for Natural Sciences is laid in the Life Skills learning programme grades R – 3. Knowledge strands are used as a tool for organising the content in the subject and these strands are shown in the following table:

Natural Sciences strands
Life and Living
Matter and Materials
Energy and Change
Planet Earth and Beyond

Natural Sciences is instructed over two years in Grade 4 and three years in Grade 5. During each year in each grade all four (4) strands are instructed, and the teacher is allowed to adapt the difficulty level of the skills to the ability of the learners. – refer to section 3 on differentiated instruction.

In Natural Sciences the content is embedded in the skills are taught over two years in Grade 4 and three years in grade 5. During each year in each grade all the strands are taught, and the teacher is allowed to adapt the difficulty level of the content to the ability of the learner.

2.2. Topics to be studied in Natural Sciences

The topics are tabled according to the strand and grade in which to instruct the specific topics:

	Strands	Grade 4 topics	Grade 5 topics
1	Life and Living	<p>Living and non-living things</p> <p>Structures of plants, animals, birds and insects</p> <p>What plants, animals, birds and insects need to grow</p> <p>Habitats plants, animals, birds and insects</p> <p>Shelters for animal, bird and insect</p> <p>Healthy eating</p> <p>Recycling</p>	<p>Plants, animals, birds and insects on earth</p> <p>Animal skeletons</p> <p>Food chains</p> <p>Life cycles</p> <p>Nutrients in food</p> <p>Digestion</p> <p>Recycling</p>
2	Matter and materials	<p>Materials around us</p> <p>Solid materials</p> <p>Strengthening materials</p> <p>Recycling</p>	<p>Metals and non metals</p> <p>Uses of metals</p> <p>Processing materials</p> <p>Processed materials</p> <p>Recycling</p>
3	Energy and change	<p>Energy and energy transfer</p> <p>Energy around us</p> <p>Movement and energy</p> <p>Energy and sound</p> <p>Recycling</p>	<p>Energy in fuels</p> <p>Energy and electricity</p> <p>Energy and movement</p> <p>Recycling</p>
4	Planet earth and beyond	<p>Planet earth</p> <p>The sun</p> <p>The earth and the sun</p> <p>The moon</p> <p>Rocket systems</p> <p>Recycling</p>	<p>Surface of the earth</p> <p>Sedimentary rocks</p> <p>Fossils</p> <p>Movement of the earth and planets</p> <p>Recycling</p>

2.3. Specific Aims:

There are **three** Specific Aims in Natural Sciences and Technology:

Specific Aim 1: 'Doing Science and Technology'

Learners should be able to complete investigations, discuss problems and use practical processes and skills to understand and discuss solutions.

This means that the learners plan a science activity step by step and do simple investigations to assist them to understand a problem and to discuss their solutions. There are attitudes and values that underpin this ability. Respect for living things is an example of this, e.g. learners should not randomly strip leaves off bushes just to investigate them; if they examine small animals they should release them unharmed in the place they found them.

Specific Aim 2: 'Understanding and Connecting Ideas'

Learners should have a grasp of scientific, technological and environmental knowledge and be able to apply it in familiar as well as new contexts.

The teacher should teach the learner to build a framework of knowledge and to help them to make connections between the ideas and concepts in their minds. Learners with a severe intellectual disability often find it difficult to apply the content they know from a familiar to an unfamiliar context. Contextual teaching enables learners to use frameworks they know to unfamiliar contexts. Discussions must relate to previously acquired knowledge and experience and connections should be made.

Specific Aim 3: 'Science, Technology and Society'

Learners should understand practical uses of Natural Sciences in society and the environment and have values that make them caring citizens.

Science should improve the quality of life of the learners during their school years and thereafter. Examples of this include knowledge on how to improve water quality, how to grow food without damaging the land and improve the energy-efficiency of their houses.

Major Process Skills to be taught in Natural Sciences

Learners also develop the ability to think independently, discuss and explain results while they use these skills.

The following are the skills that learners will be able to develop in Natural Sciences:

- 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 framework to apply in unfamiliar contexts
- Observing – noting finer details of objects, organisms and events
- Comparing – noting similarities and differences between things
- Measuring – using measuring instruments such as rulers, thermometers, clocks and syringes (for volume)
- Sorting and classifying – applying knowledge in order to sort items into a group, mind-map, key or list
- Raising questions – being able to think of, and articulate relevant questions about problems, issues, and natural phenomena
- Predicting – stating, before an investigation, what you think the results will be for that particular investigation
- Putting forward a suggestion or possible explanation to account for certain facts
- Planning steps in 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
- 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 grouping. Sometimes an investigation has to be repeated to verify the results
- Recording information – recording data from an investigation in a systematic way, including drawings, descriptions, tables and graphs
- Interpreting information – explaining what the results of an activity or investigation mean (this includes reading skills)
- Evaluating and improving products – using criteria to assess a constructed object and then stating or carrying out ways to refine that object
- Communicating – using written, oral, visual, graphic and other forms of communication to make information available to other people

2.4. Requirements for Natural Sciences as a subject

2.4.1. Time Allocation

Natural Sciences is instructed in Grades 4 and 5. The compulsory instructional time for Natural Sciences for learners experiencing severe intellectual disabilities amounts to 1.5 hours per 5-day cycle.

			LIFE SKILLS COMPONENTS	TIME ALLOCATION
Total time allocated = 8.5 hours per week	Life Skills and Physical Education	6 hours	Routine Activities	2 hours
			Physical Education	1 hour
			Life Skills, Economic and Management Sciences, Social Sciences	3 hours (0.5 hour can be allocated to Life Skills in schools who instruct in 3 Skills electives)
	Creative arts	1 hour	Creative arts	1 hour
	Natural Sciences	1,5 hour	Natural Sciences	1,5 hour

Twenty percent (20%) of the above mentioned time is utilized to teach subject content which should be embedded in teaching the learners to execute the skills. This implies that theoretical lessons should not be instructed in isolation, but during the teacher's demonstration that takes place before the learners practise the skills. The learners are required to utilize eighty percent (80%) of the time to practise the various skills in the classroom. The Natural Science periods should be one continuous period.

2.4.2. Resources

2.4.3. Human Resources

An appropriately qualified teacher registered with SACE in line with the Collective Agreement 5 of 2001 is required to teach Natural Sciences and Technology.

2.4.4. Resources

Resources needed for teaching Natural Sciences is listed according to grade and terms in order to assist teachers with planning and preparation. The list is a guide and suitable alternative tools and materials may be used.

Term 1 Grade 4	Term 2 Grade 4	Term 3 Grade 4	Term 4 Grade 4
<ul style="list-style-type: none"> Old telephone directories/thick books Vegetable salad ingredients x number of learners (2nd year) 1 Apple and 1 potato 	<ul style="list-style-type: none"> 7 ice trays 4 kettles 15 cups/mugs 15 teaspoons Coffee powder X 10 ml X number of learners (1st year) 	<ul style="list-style-type: none"> 1 small ball string 15 ml mealie pips X number of learners (1st year) 15 ml popcorn pips X number of learners (1st year) 	<ul style="list-style-type: none"> Model of a globe 300g plasticine Thermometer X 4 7 black baking trays 1 roll (15 m) glad wrap Round balloons X

<p>slices for number of learners (2nd year)</p> <ul style="list-style-type: none"> • 15 table knives • 15 table forks • 15 table spoons • 7 small scissors • Cotton wool X 4 rolls • Many empty margarine/plastic containers • Plant seeds x number of learners (1st year) • Many empty shoe boxes • Many empty purity bottles with lids • 15 droppers • Iodine x 1 bottle • 4 watering cans • Small bottle iodine • Recycle bins 	<ul style="list-style-type: none"> • Cup a soup bags X number of learners (2nd year) • Small plastic bags • Chalk X 1 box • Freezer X 1 • Ice pop moulds X 15 • Bleach x 5ml X number of classes 	<ul style="list-style-type: none"> • Elastic bands X 5 X number of learners • Empty glass bottles (e.g. coke/milk bottles) 	<p>number of learners</p> <ul style="list-style-type: none"> • Long balloons X number of learners • Drinking straws X number of learners
Grade 5 Term 1	Grade 5 Term 2	Grade 5 Term 3	Grade 5 Term 4
<ul style="list-style-type: none"> • Old telephone directories/thick books • Chicken bone X number of classes • Vinegar X 50 ml X number of classes • Plaster of Paris X 2 kg • Flour and oil clay X 2 kg • Pins X 2 containers • Magnifying glasses X 7 • Iodine X 3 drops X 	<ul style="list-style-type: none"> • Plastic spoons X number of classes • Metal screws X number of learners (1st year) • Margarine 1 ml X number of learners (1st year) • Iron filings X 30 ml X number of learners (3rd year) • Bar magnets X 15 • Mixing bowls X 4 • Jelly powder packets X number of 	<ul style="list-style-type: none"> • Candles X 4 x 15 • 1 x fire extinguisher • Batteries x 30 (size depend on appliances) • Lemons X 15 • Light bulbs X 15 • Electrical wire x 3 m • Electrical plug X 15 • Catapult X 1 • Mousetrap x 1 • Punch x 1 • Cotton reels' x number of learners in grade 5 3rd year 	<ul style="list-style-type: none"> • Purity bottles X 45 + number of learners in grade 5 2nd year • Seedling x number of learners in grade 5 2nd & 3rd year • Gravel X 1 kg • Plaster of Paris x 150 g x number of learners in grade 5 1st, 2nd & 3rd year • Plasticine x 200g x number of learners in grade 5 1st, 2nd & 3rd year

<ul style="list-style-type: none"> number of learners • Slice of bread X number of learners • Benedict's solution X number of learners (3rd year) x few drops • Wall paper glue X 2 packets 	<ul style="list-style-type: none"> learners (1st year) • Measuring jug X 4 • Plaster of Paris X 1 kg • Maize meal X 60 ml X 0.5 X number of learners (3rd year) • Concrete bricks X 0,5 number of learners (3rd year) 	<ul style="list-style-type: none"> • Elastic bands x 100 • Off cut wooden blocks 3cm x 1 cm • Small wheels (1cm) x number of learners in grade 5 3rd year • Thick sosatie sticks x number of learners in grade 5 3rd year 	
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Every learner must have his/her own workbook. A variety of basic stationary is required, namely pens, pencils, rulers, paper clips, card, coloured paper, colouring pencils, sellotape, thread, scissors, prestik, glue, protective wear (e.g. aprons/old shirts/jackets), washing up liquid and dishtowels.

Ideally every learner should have access to sufficient workplace and equipment to carry out investigations. All safety measurements must be in place in the classrooms when doing investigations and experiments with learners.

With regard to equipment, schools must make every effort to ensure that the essential equipment is provided. Tools, apparatus, material, and consumables must be acquired through a planned budgeting process.

While it is acknowledged that it is not ideal to have to improvise when using equipment, teachers should remember that it is more important for learners to have the experience of carrying out a variety of investigations than to depend on the availability of equipment. In instances where equipment is limited, teachers should be encouraged to improvise. The same skills can be developed using improvised equipment.

The Natural Sciences classroom should be equipped with charts, hand lenses, scissors, models, glass beakers, and if all possible access to appropriate DVDs, DVD player, and Data Projector.

Fresh plant material can be obtained from the surroundings and teachers should ensure that appropriate plants (e.g. Impatiens) are planted on the school grounds. Teachers must familiarise themselves with the subject content and how to use equipment.

2.4.5. Infrastructure, equipment and finances

Schools must ensure that teachers have the necessary infrastructure, equipment and financial resources for quality teaching and learning.

2.4.6. Infrastructure

Each class must have a basin/sink and water supply available. The classroom should provide an opportunity for conducting experiments and group work.

2.4.7. Finances

Budget and inventory

A budget must be allocated for the subject. The amount will be determined by the number of learners taking the subject across all the years and the nature of the practical work required as stipulated in the curriculum. The budget needs to be revised annually and must consider all resources needed per year. The funding must make provision for maintenance of equipment and the replacement over the years.

A stock inventory must be maintained by the teacher and verified annually by a Senior Management Team member.

2.5. Career opportunities

Teachers must highlight the links between Natural Sciences as a subject and other subjects like Life Skills and all the Vocational subjects offered at the school. The subject does not provide a specific career opportunity for the learners, however the subject enables them to improve their quality of life.

3. SECTION 3:

OVERVIEW OF TOPICS PER TERM AND ANNUAL TEACHING PLANS

3.1. Content Overview

Each week has a compulsory contact time of 1,5 hours for the subject Natural Sciences and Technology.

3.1.1. Content overview of topics

The content is embedded in the skills and the learners should execute the skills in a simulated working environment recreated in the classroom/centre. The table below indicates the topics and content in the Natural Sciences learning programme in Grade 4 and 5 with differentiation.

	Strands	Grade 4 topics	Grade 5 topics
1	Life and Living	Living and non-living things Structures of plants, animals, birds and insects What plants, animals, birds and insects need to grow Habitats plants, animals, birds and insects Shelters for animal, bird and insect Healthy eating Recycling	Plants, animals, birds and insects on earth Animal skeletons Food chains Life cycles Nutrients in food Digestion Recycling
2	Matter and materials	Materials around us Solid materials Strengthening materials Recycling	Metals and non metals Uses of metals Processing materials Processed materials Recycling
3	Energy and change	Energy and energy transfer Energy around us Movement and energy Energy and sound Recycling	Energy in fuels Energy and electricity Energy and movement Recycling

	Strands	Grade 4 topics	Grade 5 topics
4	Planet earth and beyond	Planet earth The sun The earth and the sun The moon Rocket systems Recycling	Surface of the earth Sedimentary rocks Fossils Movement of the earth and planets Recycling

The learners are two years in Grade 4 and three years in Grade 5. Learners should practise more advanced skills during the second year in Grade 4, thus not repeat the activities/experiments completed during the first year in Grade 4. This principle also applies to Grade 5. More advanced activities/experiments should be completed during the second and third years in Grade 5. Depending on the size of the school, this may result in learners being in Grade 4 for the first as well as the second year in one class. The teacher should ensure that these learners do different activities/experiment.

3.2. Teaching plans

Grade 4

Each term comprises of ten weeks and a minimum of 9 weeks instruction is compulsory. The sequence within the term is not compulsory and the teacher may cover the learning programme in any appropriate sequence. Learners are two years in Grade 4, therefore the activities are indicated under the headings:

- Grade 4 1st year
- Grade 4 2nd year

The Occupational Health and Safety (OHS) Act 85 of 1993 requires the teacher to comply with the safety regulations when issuing equipment and tools to the learners and the teacher may not leave learners unattended during Natural Sciences and technology instructional time. A group discussion on the safety precautions that must be followed during all the instructional time is compulsory. Learners with severe intellectual disability are not always able to make abstract judgments, and they are often not able to apply learned knowledge from one topic to the next. Impulsive behaviour as well as the inability to make fast decisions can easily lead to learners finding themselves in, or being exposed to dangerous situations.

3.3. Grade 4: Term 1

Strand: Life and living

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1	Living and non-living things	<ul style="list-style-type: none">• Understand the field of Natural Sciences• List suggestions for classroom rules and repeat rules with prompting	The teacher shows images representing the topics in the four different strands to the learners to introduce them to the subject. The learners receive their homework books including letters to the parents to explain the nature of the subject.

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Identify and name different kinds of living things Identify and list the seven life processes – feeding, growing, reproducing, breathing, excreting, sensing and moving Identify and list things that appear not to be living (e.g. dried beans, dried yeast, a fertilised bird egg), but carry on “living” given the right conditions Identify and name different kinds of non-living things that cannot carry out all the seven life processes Identify and name some things that were living and are now dead, e.g. dead wood, dry leaves 	<p>The teacher shows the learners real examples and pictures of living and non-living things and discusses the differences between living and non living things.</p> <p><u>Grade 4: First year</u> <u>Activity 1</u> Group images and real life objects of living and non-living things into two groups.</p> <p><u>Grade 4: Second year</u> <u>Activity 1</u> Discuss living and non-living things and list the differences and similarities between them.</p>
2-3	Structures of plants, animals, birds and insects	<ul style="list-style-type: none"> Identify and name the basic structure of plants: roots, stems, leaves, flowers, fruits and seeds Identify and discuss the differences between plants, such as size, shape and colour of roots, stems, leaves, flowers, fruits and seeds Identify the basic structure of animals, namely head, tail, body, limbs, sense 	<p>The teacher takes the learners to the school’s garden to identify the basic structures of plants and animals (e.g. chameleon, insects, grasshopper, lizards).</p> <p><u>Grade 4: First year</u> <u>Activity 1</u> Identify and pull out a weed/plant in the garden and feel and smell the weed/plant.</p> <p><u>Activity 2</u> Divide learners into small groups. Trace the outlines of the weed to make a poster.</p> <p><u>Activity 3</u> Point out the basic structure of animals on images provided to them.</p>

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>organs</p> <ul style="list-style-type: none"> Identify the structure of birds, namely head, tail, wings, legs and sense organs Identify the structure of insects, namely head, body, wings, legs and sense organs Identify the visible differences between animals and birds, such as size, shape, body covering and sense organs 	<p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Identify and pull out a weed/plant in the garden, feel and smell the weed. Prepare and dry the weed/plant in a thick book.</p> <p><u>Activity 2</u></p> <p>Paste the weed in your workbooks and label each part of the weed.</p> <p><u>Activity 3</u></p> <p>Divide the learners in small groups and each group prepare and eat a mixed salad using different parts of the plant, e.g. lettuce leaves (leave of the plant), a tomato (fruit of the vegetable), celery (stem of the vegetable) and a carrot (root of the vegetable).</p> <p><u>Activity 4</u></p> <p>Discuss the differences and similarities between the animals shown on images provided by the teacher.</p>
4	What plants, animals, birds and insects need to grow	<ul style="list-style-type: none"> Identify and name what plants, animals, birds and insects need to grow, namely light, water and air Identify and list what plants need to grow well, namely the right type of soil, right amount of water for the type of plant and sun or shade Give examples how to grow plants, e.g. cuttings and seeds Identify and list different plants that can 	<p>The teacher demonstrates why</p> <ul style="list-style-type: none"> plants need light, water and air to grow. Take four empty margarine containers and put seeds (e.g. beans, lentils, mealies) between two layers of damp cotton wool. Wait for 2 to 3 days for the seeds to sprout and remove the top layer of cotton wool. Place one container in a dark cupboard (no light) and three tubs near a window. Water all the tubs regularly, except one tub (no water). Put a plastic bag over one tub after the seeds sprouted to exclude air. The fourth tub serves as the control tub to show that plants need light, water and air to grow plants need light to grow. Take an empty shoe boxes and cut a large, rectangular window in one short end of the shoe box. Take the piece of card that you have cut

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>be used to take cuttings, e.g. cuttings from soft stems, runners, baby plants and leaves</p> <ul style="list-style-type: none"> List the factors seeds need to germinate, namely water and warmth Know that plants make sugar and starch by using sunlight, water and carbon dioxide from the air Know and understand the terminology: carbon dioxide, namely that carbon dioxide is the gas that we breathe out and the gas in fizzy drinks 	<p>out and cut a small window toward the end of the card. Secure the card with the window in the inside towards the middle of the long side of the box. Stand the box in the upright position. Place a small potted plant at the bottom of the box on the opposite side of the window card. The plant will grow in the shape of a half circle to reach the light.</p> <ul style="list-style-type: none"> animals, birds and insects need oxygen to breath. Take a small bottle, place three flies in the bottle and close the bottle tightly. Observe that the flies will die as they need oxygen to breath <p>The teacher demonstrates how to record the results of the experiment, namely:</p> <ul style="list-style-type: none"> Which plants have grown What the results of the experiment are <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Divide learners into small groups and each group cut and grow a plant cutting taken from the school garden or home. Cuttings can be taken from geraniums, runners (e.g. creepers like an ivy or strawberry plant), spider plant and leaves from succulents.</p> <p><u>Activity 2</u></p> <p>Record how many days it takes for the cutting to develop a new leaf.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Divide learners into small groups and each group cut and grow two cuttings from the same</p>

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p>plant. The one cutting is put in a light, warm place and watered regularly. The second cutting is placed in a dark cupboard to establish the effect of light on the growth of plants.</p> <p><u>Activity 2</u></p> <p>Discuss and record how many days it takes for the cutting placed in an area with light to develop a new leave and how many days it takes for the other cutting in the cupboard to develop a leaf.</p> <p><u>Activity 3</u></p> <p>Divide learners into small groups and execute the experiment to test vegetables and fruit for sugar and starch. The teacher provides them with a slice of potato and apple and a few drops of iodine. Each group record their findings.</p>
5	Habitats - plants, animals, birds and insects	<ul style="list-style-type: none"> Understand and describe the word "habitat" Identify and describe the habitat of plants Describe habitats such as grassland, forest, river, desert and sea List the differences between plants and weeds List the plants that grow in your province Know that the protea is our national flower Identify and describe the habitat of animals Identify and describe the habitat of birds Identify the habitat of insects 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Provide learners with images of animals and their shelters. Match the animals to their shelters.</p> <p><u>Activity 2</u></p> <p>Identify at least one animal habitat on the school grounds and investigate the habitat in terms of materials, size, shape, colour and smell.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Draw one animal habitat from images provided to them and describe the animal habitat.</p> <p><u>Activity 2</u></p> <p>Provide two reasons for the suitability of the animal habitat that you have chosen.</p>

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Discuss the different types of animal, bird and insect shelters (e.g. to shelter, to have babies and escape from danger) and differences in animal shelters Know and understand the terminology habitat, indigenous plants and insects 	
6	Structures for animal, bird and insect shelters	<ul style="list-style-type: none"> Identify and list different types of natural animal, bird and insect shelters, namely nests, shells, hollow trees, wasp nests Identify and name human made shelters, e.g. dog kennels, cages, kraals and stables Identify and list the different shapes, sizes and materials animal structures can be made from 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Provide a small number of different materials to produce an animal, bird and insect shelter to the learners. Divide learners into small groups and each group make a simple model of an animal shelter, e.g. spider web, fish pond, bird nest.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Provide the learners with images of different types of animal, bird and insect shelters. Describe two animal-, bird- and insect shelters.</p> <p><u>Activity 2</u></p> <p>List the steps to produce a model of one of the above animal, bird and insect shelters.</p>
7-8	Healthy eating	<ul style="list-style-type: none"> Identify the food pyramid and the food in each group in the food pyramid, namely the bread and starch group, the fruit group, the vegetable group, the meat, chicken, fish and bean group, the dairy group and fats and sugar group 	<p>The teacher</p> <ul style="list-style-type: none"> provides the learners with different types of food to taste (sweet, sour and salty), smell (coffee, fresh leafy vegetable or onions, toast), see (previously mentioned products), hear (eating chips, drinking coffee) and feel (the texture of the mentioned products) on individual paper plates places different food items in separate coloured plastic bags and the learners must

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> List the number of portions in each group to eat daily namely the bread and starch group (6-11 servings), the fruit group (2-4 portions), the vegetable group (3-5 groups), the meat, chicken, fish and bean group (2-3 servings), the dairy group (2-3 servings) and fats and sugar group (very little) State tips for healthy eating daily Identify the senses that we use when we eat food, namely the tongue to taste the food, nose to smell food 	<p>identify the food items by smelling and feeling.</p> <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Cut and group the pictures of the food items and paste in the correct position on the food pyramid.</p> <p><u>Activity 2</u></p> <p>Make a list with the food items that you ate yesterday and list the healthy food that you have not eaten.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Construct a 3 dimensional food pyramid with the worksheet provided. Paste the pictures of the food items in the correct group.</p> <p><u>Activity 2</u></p> <p>Compile a list of the food that you ate yesterday. Compare your list with the food on the food pyramid to conclude if your food intake the previous day was healthy or not.</p>
9	Recycling	<ul style="list-style-type: none"> List litter that is dangerous to plants, animals and birds Identify the recycling logo Explain that recycling is a process to convert waste materials into reusable materials List the meaning of the three arrows in the logo as “reduce, reuse and “recycle” 	<p>The teacher and learners</p> <ul style="list-style-type: none"> - discuss how to collect litter - know how to behave during a cleaning-up expedition - collect litter from the school grounds to discuss how the litter may be dangerous to plants, animals and birds - group the litter in groups of paper, plastic, metal, glass and other <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p>

Grade 4: Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> List the groups of recyclable materials, namely cans, glass, paper, plastic, oil, electronic waste, drums and aerosols Understand the terminology: litter, packaging, recycle 	<p>Draw up a list showing items that you have thrown in the rubbish bin yesterday and give a reason why these items may be harmful to plants, animals and birds.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Draw up a list (with the headings paper, plastic, metal, glass and paper) showing all the items collected on the school grounds and group together.</p> <p><u>Activity 2</u></p> <p>Copy the recycling logo in your workbook and tell/write the meaning of the three arrows in the recycling logo.</p>

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 4: First year</u>	<u>Grade 4: Second year</u>
Week 2:	Identify a weed/plant in the garden.	Know how to prepare and dry the weed/plant in a thick book.
Week 3:	Point out the basic structure of animals on images.	Discuss the differences and similarities between animals on images.
Week 4:	Cut and grow a plant cutting.	Record how many days it takes for a cutting to develop a new leave.
Week 5:	Match animals to their shelters.	Describe a (animal) habitat.
Week 6:	Make a simple model of a (animal) shelter.	Describe two animal OR bird OR insect shelters.
Week 7:	Group pictures of food items in the correct position on the food pyramid.	Construct a 3 dimensional food pyramid.
Week 8:	Compile a list with the food items eaten the previous day.	Compare personal food intake to food intake suggested by the food pyramid.
Week 9:	Give a reason why waste items may be harmful to plants, animals and birds.	Know the meaning of the three arrows in the recycling logo.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week 2:	Identify the structural differences between two plants.
Week 3:	List the differences between animals, birds and insects.
Week 4:	List the factors seeds need to germinate.
Week 5:	Know our national flower.
Week 6:	Identify the different materials animal structures can be made from correctly.
Week 7:	List the number of portions of the food group(s) correctly.
Week 8:	Identify the senses that we use when we eat food.
Week 9:	List litter that is dangerous to plants, animals and birds.

3.4. Grade 4 Term 2

Strand: Matter and materials

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1 - 2	Materials around us	<ul style="list-style-type: none"> Understand the terminology: matter and materials Group matter as living and non-living matter List examples of raw and manufactured materials Know the phases of water as ice, water and steam Know the properties of ice, namely it feels hard, cold and slippery and is white in colour Understand what a solid, liquid and gas is Give examples of solids, liquids and gases List the characteristics of solids, liquids and gases: solids keep their shape, liquids flow and gases spread out and have no definite shape List examples of materials that can change their shape, e.g. solids changes to a liquid when heated and changes to a 	<p>The teacher demonstrates</p> <ul style="list-style-type: none"> how to melt ice, by rubbing the ice between her/his hands, blowing on the ice or by placing the ice in the sun the sensory properties of ice and that ice floats on water how to boil water safely in a kettle and to pour water in a cup holding one hand behind his/her back. The teacher explains that the hand behind her back prevents her/him holder onto the cup and accidentally spilling boiling water on her/his hand. that different types of liquids behave differently, e.g. syrup, oil and water by pouring the different liquids on a flat surface and observe how they flow differently <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Group real life examples of solids and liquids (provided to learners) in two groups.</p> <p><u>Activity 2</u></p> <p>Divide learners in four groups and find images of gases in magazines to make a poster.</p> <p><u>Activity 3</u></p> <p>Boil water safely to make a cup of coffee and enjoy their coffee.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Complete a worksheet and table the real life examples of solids and liquids (provided to learners).</p>

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>gas when cooled down. Gas changes to a liquid when cooled and the liquid changes to a solid when cooled further</p> <ul style="list-style-type: none"> Know that the boiling point of water is 100°C and freezes at 0°C 	<p><u>Activity 2</u></p> <p>Divide learners in four groups. Find images of solids, liquids and gases in magazines to make a poster.</p> <p><u>Activity 3</u></p> <p>Boil water safely to make a cup of soup and enjoy their cup of soup.</p> <p><u>Activity 4</u></p> <p>Study an image depicting different matter (e.g. cars travelling on a road next to a river) and list the solids, liquids and gases in the picture.</p>
3	Materials around us	<ul style="list-style-type: none"> List the three states of water, namely water, ice and steam (water vapour) List the solids, liquids and gases in the image of the water cycle Know and understand the following terminology, condensation, evaporation and precipitation Explain the water cycle 	<p>The teacher</p> <ul style="list-style-type: none"> boils water in a pot and leaves the water to cool down with the lid on the pot to explain condensation or blows against a mirror put a little water in a saucer in a sunny corner in the class to demonstrate evaporation. <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Put a weed in a small plastic bag and observe the water droplets forming in the bag.</p> <p><u>Activity 2</u></p> <p>Complete a worksheet to label each stage of the water cycle.</p> <p><u>Activity 3</u></p> <p>Demonstrate evaporation.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Draw/copy and label an image of the water cycle in their books.</p>

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<u>Activity 2</u> Plant a seedling in an empty coke bottle and close the open end with glad wrap to observe the water droplets forming against the glad wrap/condensation.
4-5	Materials around us	<ul style="list-style-type: none"> Understand the terminology: raw and manufactured materials Identify and list raw materials we use to make other useful materials, namely <ul style="list-style-type: none"> sand is used to make glass clay is used to make ceramics coal and oil are used to make plastics, paints and fabrics wood and fibre from plants are used to make paper List different types of raw and manufactured materials List different types of natural materials Understand that combining materials results in new materials with added strength Understand the terminology, namely processed materials – raw materials are processed to make other materials by using either heat or chemicals 	The teacher <ul style="list-style-type: none"> provides real life examples of raw and manufactured materials. The learners examine these examples and feel the texture of these materials. shows a short video clip on how different materials are manufactured using raw materials, e.g. how fabric is manufactured, clay is used to manufacture clay pots, car tyres are manufactured and plant material is used to make homemade paper. <u>Grade 4: First year</u> <u>Activity 1</u> Divide learners in two groups. Group 1: Use mud only and shape the mud in the form of a brick. Group 2: Add straws to your bricks. Leave the bricks for a few days in the sun and then break the bricks. Compare the strength of each group's bricks. Understand that combining materials results in new materials with added strength. <u>Grade 4: Second year</u> <u>Activity 1</u> Add grass cuttings to water one week prior. Tear waste paper (preferable 80g A4 sheets) in small pieces, add the grass cuttings to the soaked waste paper and each learners spread 125 ml of the mixture on a flat absorbent surface (e.g. piece of cloth). Leave the "paper" to dry in the sun and remove the absorbent surface from the newly produced paper. Cut a shape from the paper and paste in your book.
6	Materials	<ul style="list-style-type: none"> Know that matter can cause fire, e.g. 	The teacher demonstrates how to stop, drop and roll in case of clothes catching fire and the

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
	around us	<p>wood or paraffin</p> <ul style="list-style-type: none"> List the uses of wood and paraffin List the danger of wood and paraffin, namely to cause a fire Identify dangers in the home that may cause a fire, e.g. paraffin stoves, gas lamps and stove, loose electrical wires Tell what to do in case of a fire in a house, namely to stop, drop and roll Know fire safety messages, namely: <ul style="list-style-type: none"> -stay away from paraffin – it can hurt you -stay away from flames and fire – they can burn you -if clothes catch on fire, stop, drop and roll -cool a burn with cool water Demonstrate how to use a fire extinguisher Design an escape plan to exit the class safely in the case of a fire 	<p>learners practise to do the same.</p> <p>Learners are divided in small groups of four learners to complete the activities.</p> <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Identify and list dangers in the classroom/home that may cause a fire and mark these with a chalk.</p> <p><u>Activity 2</u></p> <p>Draw an escape plan to exit the class safely in the case of a fire.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Describe how to adapt the dangerous objects in the classroom (that were identified by the younger group) to make them safe.</p> <p><u>Activity 2</u></p> <p>Draw an escape/evacuation plan to exit the school buildings safely in the case of a fire.</p>
7	Solid materials	<ul style="list-style-type: none"> Know and understand the meaning of the word: solid materials Name the properties of raw and manufactured materials, e.g. hard or soft, 	<p>The teacher</p> <ul style="list-style-type: none"> - demonstrates that heat changes the properties of materials by putting water in the freezer to become a solid that expands - demonstrates how to make sorbet using fruit juice to show that liquid expands when

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>stiff or flexible, strong or weak, light or heavy, waterproof or absorbent</p> <ul style="list-style-type: none"> Demonstrate that heat causes matter to change, e.g. mealie meal versus cooked porridge, telephone lines contracting in cold weather and expanding in hot weather Know that a sheep's wool is used to produce wool for jerseys/blankets and cotton from the cotton plant is used to make school shirts 	<p>frozen</p> <ul style="list-style-type: none"> shows a number of bowls manufactured using different materials to the learners, e.g. a bowl made from metal, wood, wire, glass, plastic, clay and folded paper. The learners discuss the different properties of the raw materials used to produce the bowls and the uses of the bowls. <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Make ice to demonstrate how heat changes the properties of water.</p> <p><u>Activity 2</u></p> <p>List the materials used to produce the bowls (displayed by the teacher) and name the properties of the bowls.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Make sorbet to demonstrate how heat changes the properties of water.</p> <p><u>Activity 2</u></p> <p>Describe the properties of three raw and manufactured materials.</p>
8	Strengthening materials	<ul style="list-style-type: none"> Identify and list how to strengthen paper to build a strong structure Roll paper in thin tubes (struts) to produce strong frames Identify struts in images that are used to make strong, stable structures, e.g. roof trusses, bridges, cranes and pylons 	<p>The teacher demonstrates how to</p> <ul style="list-style-type: none"> fold and roll paper (one A4 sheet for each shape) in three different shapes, namely round, square and in a triangular shape. Let the sides overlap by 1 cm and place sticky tape on the top and the bottom. The teacher places a book on top of each pillar to determine the strength of the different shapes. The tube (round shape) is the strongest and will carry the most weight. bend a straw in four equal lengths to make a triangle. The straw is placed on a table

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Know that a square shape is strengthened by inserting a strut to form two triangular shapes Know that a square is strengthened by inserting braces or gussets (small triangular shapes) in the corners of the square 	<p>and carefully pulled in the two opposite corners – the shape will change to a diamond shape. The teacher shows the learners how to strengthen the shape by inserting a straw diagonally into the square.</p> <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Work in pairs of two and repeat the teacher's experiment. Test the strength of the three different shapes by putting your lunch box on top of each pillar. Record in your book that the tube is the strongest of the three shapes.</p> <p><u>Activity 2</u></p> <p>Repeat the teachers experiment and paste the square with a diagonal strut in your workbook.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Work in pairs of two. Repeat the teachers experiment, but use the round shape only to produce four thin tubes, using four A4 sheets. They place the four thin tubes between two lunch boxes, leaving a gap between the lunch boxes. Test the strength of the tubes by placing different weights on the tubes. Record your findings in your workbook.</p> <p><u>Activity 2</u></p> <p>Repeat the teachers experiment but instead of inserting a diagonal strut in the square, insert four small triangles in each corner of the square to strengthen the square.</p>
9	Recycling	<ul style="list-style-type: none"> Know that water is a scarce resource Know that a drought causes damage or living things 	<p>The teacher demonstrates how to make water safe to drink by boiling the water for 15 minutes and then adding 5 ml bleach to 20 Litre water after the water has cooled down. Learners are divided in pairs to complete the activities.</p>

Grade 4: Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> • Give one reason why polluted water cause ill health, namely that the water contains germs that causes cholera • List examples of how water pollution takes place • List ideas how to save water in the home and at school • List ideas how to save water in gardens and agriculture • Give examples of how to reuse water • Give examples of how to recycle water in the home • Know and understand the terminology: drought, water pollution, water recycling • List ideas how to use recycled cans and plastic • List suggestions how to re-use cans and plastic • Visit the website of the National Recycling Forum in South Africa at www.recycling.co.za to find your nearest recycler in your area 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Practise to make water safe to drink. Record the steps in your book.</p> <p><u>Activity 2</u></p> <p>Measure how much water a person uses to</p> <ul style="list-style-type: none"> - flush the toilet once - wash four plates and cups <p>Record these findings in your book.</p> <p><u>Activity 3</u></p> <p>Practise to group and recycle recyclables at school.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Discuss suggestions how to save water in the house and at school. Record these in your book.</p> <p><u>Activity 2</u></p> <p>Locate the water meter at school and take the reading of the water consumption per day over one week. Calculate how much water is consumed at school over one month. Record your findings in your book.</p> <p><u>Activity 3</u></p> <p>Practise to group and recycle recyclables at school.</p>

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

Week Grade 4: First year

Week Boil water safely to make a cup of coffee.

2:

Week Demonstrate evaporation.

3:

Week Cut and grow a plant cutting.

4:

Week Produce a mud brick.

5:

Week Identify dangers in the classroom/home that
6 may cause a fire.

Week Make ice to demonstrate how heat changes
7: the properties of water.

Week Test the strength of 3 different structures
8: using weights.

Week Know how to make water safe to drink.

9:

Grade 4: Second year

Boil water safely to make a cup of soup.

Demonstrate condensation.

Record how many days it takes for a cutting to
develop a new leave.

Produce handmade paper.

Describe how to adapt dangerous objects in the
classroom/home to make them safe.

Make sorbet to demonstrate how heat changes
the properties of water.

Test the strength of tubes by using weights.

Know how to safe water in the house and at
school.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week 2: Know the phases of water.

Week 3: Explain the water cycle.

Week 4: List the factors seeds need to germinate.

Week 5: List different types of natural materials.

Week 6: Know what to do in case of a fire in a house.

Week 7: Know and understand the meaning of the word: "solid materials".

Week 8: Know how to strengthen a square.

Week 9: State how water pollution takes place.

3.5. Grade 4 term 3

Strand: Energy and change

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1	Energy and energy transfer	<ul style="list-style-type: none"> Understand the terminology: energy and understand that energy makes things move Know that humans need food for energy to grow, walk, run, sing and jump Know that animals need food for energy to grow Know that plants need food for energy to grow Know that we need energy for everything we do, e.g. to cook food, switch on a light, open the tap to get hot water, fill our cars with petrol 	<p>The teacher demonstrates</p> <ul style="list-style-type: none"> activities that humans do that requires energy, e.g. walk, run, sing and jump how energy moves by using a long piece of string tied between the backs of 2 chairs. Tie 2 balls to 2 shorter pieces of string. Tie these slightly apart onto the long piece of string that is tied between the 2 chairs. Start to swing the one weight gently. The second weight will soon start to swing without you touching it. Soon the first weight will stop swinging because all its energy has transferred to the second weight, after a while, the first weight will start to swing again. Energy from the second weight is transferred back to the first weight and the second weight stops swinging. <p><u>Grade 4: First year</u> <u>Activity 1</u> Identify activities that humans do that require energy and find, cut and paste pictures in their workbooks to illustrate energy.</p> <p><u>Grade 4: Second year</u> <u>Activity 1</u> Identify activities that animals do that require energy and find, cut and paste pictures in their workbooks to illustrate this.</p>
2	Energy and	<ul style="list-style-type: none"> Understand the concept: food chain 	<u>Grade 4: First year</u>

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
	energy transfer	<ul style="list-style-type: none"> Identify the role players in a food chain, e.g. the sun shines to make plants grow that live stock feed on. We slaughter live stock to eat and obtain energy Explain that plants make their own food by using energy from the sun, water from the soil and air Explain pictures showing different food chains, e.g. how fish grow, how insects grow 	<p><u>Activity 1</u></p> <p>Cut out and place the pictures in a worksheet in sequence to represent the food chain.</p> <p><u>Activity 2</u></p> <p>Divide learners in groups of four. Place pictures of animals, birds, insects and plants in a box. Draw the pictures from a box and the groups takes turns to act out the picture they drew.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Describe how plants make their own food.</p> <p><u>Activity 2</u></p> <p>Divide learners in groups of four to design a poster on how plants make their own food.</p>
3	Energy around us	<ul style="list-style-type: none"> Identify and name the different types of energy, namely heat, light, sound and movement energy List the sources of heat energy and describe how these sources provide us with heat energy, e.g. sun, gas stove, paraffin stove, electric stove, fire List the dangers of too much sun energy, namely heat stroke and skin cancer List the sources of light energy and describe how these sources provide us with light energy e.g. sun, electric light, 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Identify and label pictures representing the different types of energy.</p> <p><u>Activity 2</u></p> <p>Make a list how to keep cool at school in very hot weather.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Identify, label and describe pictures representing the different types of energy. The teacher provides the learners with key words to use to describe the pictures.</p> <p><u>Activity 2</u></p> <p>Make a list how to keep cool in your house during very hot weather.</p>

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>gas or paraffin lamps</p> <ul style="list-style-type: none"> List the sources of sound energy and describe how these sources provide us with sound energy e.g. musical instruments, radios, televisions, car sounds List the sources of movement energy and describe how these sources provide us with movement energy e.g. petrol provides energy to buses and taxis, food provides humans with energy to push and pull objects 	
4	Energy around us	<ul style="list-style-type: none"> Understand the terminology: input and output energy Identify and list sources of input energy, e.g. batteries in a phone, electricity to boil the kettle Identify and list examples of output energy, e.g. send message with a phone, boiled water is the output energy 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Label pictures as either input or output energy.</p> <p><u>Activity 2</u></p> <p>Work in pairs of two learners. Make a model to illustrate input and output energy.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Explain the differences between input and output energy.</p> <p><u>Activity 2</u></p> <p>Draw a table with two columns and list these words in either the input or output energy column: bicycle moves forward, leg movement to cycle a bicycle, batteries to operate a</p>

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			torch, torch shines a light, electricity to operate a kettle, water boils in a kettle, flames heat the surrounding area, wood for a fire
5	Movement and energy	<ul style="list-style-type: none"> Understand that musical instruments use movement energy such as blowing, beating and plucking to make sound List five musical instruments and the type of movement energy needed, e.g. guitar needs plucking, drum needs beating, flute needs blowing Identify sound as the main output energy of musical instruments Know that different shapes and sizes produce different sounds Produce musical instruments making different sounds 	<p>The teacher provides the learners with mealie pips, gravel and elastic bands. The learners produce their own musical instruments which are kept in the classroom to continue with sound identification the following week.</p> <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Bring two containers with lids from home with different shapes (e.g. square and flat, small round tin, tall and thin) to make your own musical instrument. Teacher provides mealie pips or popcorn pips to put in the containers. The learners shake their musical instruments to produce music and listen to the different sounds as output energy that is produced.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Bring one containers without a lid from home to make your own musical instrument. Teacher provides different thicknesses of elastic bands to pull over the containers. Learners pluck the elastic bands to produce sound energy.</p> <p><u>Activity 2</u></p> <p>Draw your musical instruments and describe the shape of the container and the thickness of the elastic bands.</p>
6	Energy and sound	<ul style="list-style-type: none"> Explain that musical instruments make sound through vibration Feel and hear the vibrations musical instruments make 	<p>The teacher demonstrates how to make a telephone with two</p> <ul style="list-style-type: none"> - yoghurt containers and string - bigger containers and string <p>Learners play with the telephone after they have completed their activities</p>

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Identify loud and soft sounds in and around the classroom Identify high and low pitch sounds in and around the classroom Identify different mediums sound travels through, e.g. air, water, plastic, metal and wood Experiment with different types of sound to recognise the sounds 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Play on the musical instruments that you produced the previous week and identify the sound as loud or soft, high or low pitched. Record your findings in your book.</p> <p><u>Activity 2</u></p> <p>Place your musical instruments in a central place, and produce sounds with the musical instrument behind a screen. The other learners must determine the shape and the size of the musical instrument.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>The teacher makes sounds behind a screen.</p> <p>Identify the objects used to make the sound as well as the medium the sound travel through, e.g. tap a teaspoon against a cup in a box, ringing a bell inside a tin and, alarm clock ticking inside a plastic bag. Record your answers in your book.</p> <p>The teacher thereafter shows the objects and mediums used to produce the sounds to the learners.</p>
7	Energy and sound	<ul style="list-style-type: none"> Identify how the volume of water and air in containers affects sound vibration Recognise that volume affects how loud sounds are. Recognise that quick vibrations produce high sounds and slow vibrations produce 	<p>The teacher</p> <ul style="list-style-type: none"> fill identical glass bottles with water to different levels and blow across the top edge of each bottle to produce sounds at different pitch levels fill identical glass bottle with water and tap on each bottle to illustrate a bottle xylophone <p><u>Grade 4: First year</u></p>

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>low sounds</p> <ul style="list-style-type: none"> Identify the sensory organ that is used to interpret sound Label the different parts of the ear correctly Match the functions of each part correctly to a drawing of the ear 	<p><u>Activity 1</u></p> <p>Identify which bottle produces the sound with the highest and lowest pitch.</p> <p><u>Activity 2</u></p> <p>Bring a narrow container from home and repeat the teacher's experiment to determine how the volume of liquid in the container affects the sound that is produced. Experiment by blowing harder and softer across the top edge of the container and record your findings in your book.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Learners label the different parts of the human ear, namely outer part, ear canal and eardrum and list the function of each part.</p> <p><u>Activity 2</u></p> <p>Execute an experiment to show how the volume of air influences sound.</p>
8	Energy and sound	<ul style="list-style-type: none"> Describe noise pollution as sounds that are loud, unpleasant or harmful to our ears and continues for a long time Identify noise pollution in the surrounding areas List the effect of noise pollution on humans Explain that noise pollution can cause permanent damage to hearing Explain the terminology: law 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>List three examples of noise pollution that you experience at home.</p> <p><u>Activity 2</u></p> <p>Give ideas of how to protect yourself from the noise pollution.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Describe noise pollution in your own words.</p> <p><u>Activity 2</u></p>

Grade 4: Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> State that laws protect people from noise pollution 	Work in four groups and select pictures of aspects that can cause noise pollution. Make a poster.
9	Recycling	<ul style="list-style-type: none"> Make a list with different types of electronic waste List the health risks electronic waste poses Identify electronic waste stations nearest to your home Visit the electronic waste association website at www.ewasa.org for more information 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Discuss in groups how to collect electronic waste safely</p> <p><u>Activity 2</u></p> <p>Practise to group and recycle recyclables safely at school.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Discuss in groups how to transport electronic waste safely.</p> <p><u>Activity 2</u></p> <p>Practise to group and recycle recyclables safely at school.</p>

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 4: First year</u>	<u>Grade 4: Second year</u>
Week 2:	Describe the sequence of a food chain.	Describe how plants make their own food.
Week 3:	Identify the different types of energy from images.	Explain the different types of energy.
Week 4:	Make a model to illustrate input and output energy.	Explain the differences between input and output energy.
Week 5:	Make a musical instrument.	Make a musical instrument and describe how the instrument is made.
Week 6:	Record the sound of homemade musical instruments.	Identify the media that sounds travel through.
Week 7:	Execute an experiment to show how the volume of a liquid influences sound.	Execute an experiment to show how the volume of air influences sound.
Week 8:	Know how to protect the self from the noise pollution.	Make a poster to illustrate noise pollution.
Week 9:	Group and recycle recyclables safely.	Group and recycle electronic recyclables.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

- Week 2: Understand the concept: "food chain".
- Week 3: List the dangers of too much sun energy.
- Week 4: Identify and list sources of input energy.
- Week 5: Identify the type of movement energy in a (musical instrument).
- Week 6: Explain how musical instruments produce sound.
- Week 7: Label the different parts of the ear correctly.
- Week 8: List the effect of noise pollution on humans.
- Week 9: List the health risks electronic waste poses.

3.6. Grade 4 term 4

Strand: Earth and beyond

Grade 4: Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1-3	Planet earth	<ul style="list-style-type: none"> Name the shape of the earth, namely a round ball or sphere Know and understand the terminology: planet, solar system, cross section, layers, inner core, outer core, earth surface/crust, sea level, globe and atmosphere Know the meaning of the word “solar system” Show the layers of the earth on a sketch Explain that the inner core is very hot Explain that the crust is the thinnest layer Tell that most of the surface of the earth is covered with water (oceans and seas) Tell that the surface of the sea is called the sea level Know that the land we can see is made up of continents and islands Identify and/or list seven continents on earth, namely Africa, Australia, 	<p>The teacher shows a model of the earth and a 3-minute video clip depicting the layers of the earth to the learners.</p> <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Show/identify visible features such as oceans, continents and islands on a globe.</p> <p><u>Activity 2</u></p> <p>Work in groups of 4 to produce 2 dimensional models of the earth.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Complete a worksheet to label the different layers of the earth.</p> <p><u>Activity 2</u></p> <p>Work in groups of 4 to produce 3 dimensional models of the earth.</p>

Grade 4: Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>Antarctica, Asia and Europe, North and South America</p> <ul style="list-style-type: none"> • Explain the difference between continents and islands • State that a thin layer of air surrounds the earth • State that the earth has many different habitats for living things 	
4	Planet earth	<ul style="list-style-type: none"> • Know and understand the terminology: space, universe and stars • Know and understand that the earth is a planet and that there are eight planets • State that these planets have their own moons • Know that earth is the only planet with life on the planet • State that the moon is the closest object to earth and smaller than earth • Tell that we can see the sun, moon and stars from the earth 	<p>The teacher shows a short video clip of the solar system to the learners.</p> <p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Copy our solar system from a picture provided by the teacher.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Draw our solar system from the three dimensional model provided to them as an example of the solar system.</p>
5	The sun	<ul style="list-style-type: none"> • Know and understand the terminology: solar power • State that the sun is a star at the centre 	<p>The teacher demonstrates how to</p> <ul style="list-style-type: none"> - estimate the time using the position of the sun using a plasticine ball (fist size), a piece of cardboard about 10cm X 10 cm and five straws. Put the plasticine ball on the piece of cardboard in a sunny area and insert the straw in the plasticine ball so

Grade 4: Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>of our solar system</p> <ul style="list-style-type: none"> • Tell that the sun is made of hot gas and gives out heat and light • Know that the sun is far away, but the closest star to the earth • State the safety precautions required when looking at the sun • Tell that the sun rises in the east and sets in the west • State that all life needs the sun and cannot do without • Tell that the sun is used to indicate time and direction 	<p>that it has no shadow. Repeat to insert plastic straws every hour until the learners leave school. The straw standing upright indicates noon and the straw the lowest position indicates the earliest time in the morning. Record the times that you inserted the straws on the piece of cardboard.</p> <ul style="list-style-type: none"> - make a solar panel. Fill a black baking tray with cold water one centimetre deep. Measure the temperature of the water (with your finger or a thermometer). Place a sheet of plastic over the tray and leave in the sun for an hour. Take the plastic off and measure the temperature again. This experiment illustrates how solar power works. <p><u>Grade 4: First year</u> <u>Activity 1</u> Repeat the teacher's demonstration in groups of 2 learners.</p> <p><u>Grade 4: Second year</u> <u>Activity 1</u> Stick a stick in the ground and mark the shadow of the stick. Record the time. Check the shadow of the stick every hour and draw a line in the soil. Check the length of the shadow and the markings in the soil every day for one week and you will notice that the shadows will be the same length every day at the same time.</p> <p><u>Activity 2</u> Make your own solar panel.</p>
6	The earth and the sun	<ul style="list-style-type: none"> • Know and understand the terminology: orbit, rotate • Know that day and night on all the 	<p>The teacher shows a model of a sundial and demonstrates how to make a model.</p> <p><u>Grade 4: First year</u> <u>Activity 1</u></p>

Grade 4: Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>continents are not at the same time</p> <ul style="list-style-type: none"> Show and describe how the earth moves around the sun State that the earth takes 365 days to move around the sun once Tell that the earth rotates while it is moving around the sun Know and understand how we get day and night Know and understand that summer and winter are not at the same time during the year on all the continents 	<p>Discuss how life on earth would be without the sun.</p> <p><u>Activity 2</u></p> <p>Draw a sundial and use your teacher's model as an example.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Discuss the different forms of water on our planet.</p> <p><u>Activity 2</u></p> <p>Divide the class in small groups to make a model of a sundial.</p>
7	The moon	<ul style="list-style-type: none"> Know and understand the terminology: phases of the moon, new moon, full moon State that the moon is <ul style="list-style-type: none"> a ball of rock in space has no air and water is smaller than the earth is closer to the earth than the sun Understand and know that the sun shines on the moon Explain why the moon seems to have different shapes as observed from the 	<p><u>Grade 4: First year</u></p> <p><u>Activity 1</u></p> <p>Label the stages of the moon on the image showing the moon orbiting the earth.</p> <p><u>Activity 2</u></p> <p>Draw a table with two rows and seven squares. Write the days of the week in the first row. Draw the shape of the moon each night over seven nights.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Describe the terminology full moon and new moon.</p> <p><u>Activity 2</u></p> <p>Discuss moon legends in African cultures.</p>

Grade 4: Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		earth <ul style="list-style-type: none"> Discuss moon legends in African cultures 	<u>Activity 3</u> Observe and record the changing shape of light on the Moon each night for a month on a calendar.
8	Rocket systems	<ul style="list-style-type: none"> Know and understand the terminology: telescope, rocket, launch Explain the uses of a telescope Explain the uses of a rocket 	The teacher demonstrates how to make a rocket using balloons, drinking straws and fishing line. <u>Grade 4: First year</u> <u>Activity 1</u> Divide learners in groups of 4 to make models of rockets. All the learners use the same shape balloons. Measure and record how far the “rockets” travels along the fishing line. <u>Grade 4: Second year</u> <u>Activity 1</u> Divide learners in groups of 4 to make models of rockets. Learners use balloons with different sizes and shapes. Measure and record how far the “rockets” travels along the fishing line. <u>Activity 2</u> Discuss the reason why the rockets travelled different distances.
9	Recycling	<ul style="list-style-type: none"> Make a list with different types of glass and paper that are suitable to recycle List the health risks glass recycling poses List the different types of paper suitable to recycle Know the type of paper that is the most profitable to recycle 	<u>Grade 4: First year</u> <u>Activity 1</u> Play “I spy with my little eye something beginning with” until all items made from glass in the classroom have been identified <u>Activity 2</u> Make a list with suggestions how to re-use glass bottles. <u>Activity 3</u>

Grade 4: Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Discuss a plan to start recycling at your school 	<p>Identify the closest bottle bank to the school and your home.</p> <p><u>Grade 4: Second year</u></p> <p><u>Activity 1</u></p> <p>Play “I spy with my little eye something beginning with” until all items made from paper in the classroom have been identified</p> <p><u>Activity 2</u></p> <p>Make a list with suggestions how to re-use different types of paper.</p> <p><u>Activity 3</u></p> <p>Identify the closest paper recycling centre to the school and your home.</p>

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 4: First year</u>	<u>Grade 4: Second year</u>
Week 2:	Identify visible features on a globe.	Identify the different layers of the earth.
Week 3:	Produce 2 dimensional models of the earth.	Produce 3 dimensional models of the earth.
Week 4:	Draw our solar system from an image.	Draw our solar system from the three dimensional model provided to them as an example of the solar system.
Week 5:	Execute and experiment to estimate the time.	Execute and experiment to make a solar panel.
Week 6:	Draw a sundial.	Make a sundial.
Week 7:	Identify the stages of the moon.	Describe two stages of the moon.
Week 8:	Execute a rocket experiment to show air movement.	Execute a rocket experiment to show that volume influences air movement.
Week 9:	Know how to re-use glass bottles.	Know how to re-use paper.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week 2:	Know the meaning of the word “solar system”.
Week 3:	Identify and/or list (seven) continents on earth.
Week 4:	State that the moon is the closest object to earth.
Week 5:	State the safety precautions to take when looking at the sun.
Week 6:	Describe how the earth moves around the sun.
Week 7:	State the properties of the moon.
Week 8:	List the effect of noise pollution on humans.
Week 9:	List the health risks glass poses in recycling.

3.7. Grade 5

Learners are three years in Grade 5 therefore the activities are divided into:

- Grade 5 1st year
- Grade 5 2nd year
- Grade 5 3rd year.

The teacher may alter the sequence within the term provided that all the content is instructed during the term.

3.8. Grade 5 : Term 1

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1	Plants, animals, birds and insects on earth	<ul style="list-style-type: none"> • Know and understand the following terminology: habitats, indigenous plants • Identify and name the habitats (home) of different plants e.g. weeds, water lily, aloe, protea bush, fruit tree • Identify the colour and/or shape of the leaves/flowers/fruit • Identify and name the habitats of different animals, birds and insects e.g. impala, birds and spiders • Know and understand that plants, animals, birds and insects can have 	<p>The teacher takes the learners to the school garden and shows them the different types of habitats and plants, animals, birds and insects</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Learners work together in pairs. Count the number of different plants in a small section of the garden that you have chosen. Write the names of the plants that you know and the number of plants in your book.</p> <p><u>Activity 2</u></p> <p>Study a picture and list the living and non-living things in the picture. Name three non-living things that the living things depend on.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>more than one habitat</p> <ul style="list-style-type: none"> • Explain why plants, animals, birds and insects depend on each other for food and protection • State and explain that plants also depend on plants, animals, birds and insects for food • Explain that animals need non-living things such as water, air and sunlight to grow 	<p>Learners work together in pairs. Count the number of different plants, animals, birds and insects in a small section of the garden that you have chosen. Write the names of the plants that you know and the number of plants in your book.</p> <p><u>Activity 2</u></p> <p>Group the plants in groups according to their habitat, as either plants living in water or soil.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Draw a table and record the plants, animals, birds and insects according to the habitat, number, shape and colour.</p> <p><u>Activity 2</u></p> <p>Collect a leave and flower (if available) from the plants, dry between newspapers, paste into your book and label correctly.</p>
2	Plants animals, birds and insects on earth	<ul style="list-style-type: none"> • Know how plants, animals, birds and insects reproduce, namely with seeds/cuttings (plants), live births (animals and humans) and eggs (birds and insects) • Know that there are many different kinds of animals, birds and insects • Identify and name animals, birds and insects with bone and without bones (e.g. spiders, crabs, beetles, crayfish, cockroach, crickets, grasshoppers) 	<p>The teacher shows pictures/models of animals, birds and insects to enable learners to complete the activities.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Draw a table with two columns and group the animals, birds and insects in the pictures in two groups, namely animals, birds and insects without bones and with bones.</p> <p><u>Grade 5 : Second year</u></p> <p><u>Activity 1</u></p> <p>Draw a table with two columns and group the animals, birds and insects in the pictures in two groups, namely without bones and with bones.</p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Distinguish animals without bones by their hard outer shell from animals with bones State the function of a hard outer shell State the function of a skeleton, namely to support the body 	<p><u>Activity 2</u></p> <p>List two animals and insects with a hard outer shell and give the reason why they have this hard outer shell.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Draw a table with two columns and group the animals, birds and insects in the pictures in two groups, namely without bones and with bones.</p> <p><u>Activity 2</u></p> <p>List how the animals, birds and insects reproduce.</p> <p><u>Activity 3</u></p> <p>List two animals with skeletons and give the reasons why they have skeletons.</p> <p><u>Activity 4</u></p> <p>Explain the word: “dependent”.</p>
3-4	Animal skeletons	<ul style="list-style-type: none"> Know and understand the terminology: skeleton, joints, muscles Identify the basic structure of animals, birds and insects namely head, tail, body, limbs, sense organs and the visible differences between animals, birds and insects such as size, shape, body covering and sense organs Explain that a skeleton of animals consists of bones and joints and is 	<p>The teacher does an experiment with two chicken bones. The one chicken bone is placed in a cup filled with water and the other in a cup filled with vinegar to demonstrate what happens when bones do not get calcium. The learners discuss the outcome of the experiment.</p> <p>Learners</p> <ul style="list-style-type: none"> do different exercises in the class and feel how their muscles and friends’ muscles contract feel their spine and ribs count their ribs bend and straighten your elbow to identify a hinge joint

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>inside the body</p> <ul style="list-style-type: none"> List the main skeleton parts of animals, namely skull, backbone, ribs, arms, legs and hip bones List the functions of each animal skeleton part, namely to protect the brain, protect the spinal cord, protect the lungs and heart and the arms, legs and hip bones provide for movement State that calcium in bones make them strong State the function of muscles, namely to move the bones in the body Explain that bones move when muscles contract and feel hard Identify and name joints in the body as the places where bones meet Identify how animals, birds and insects move, e.g. walking, swimming, hopping, flying, trotting Give examples of shell structures, namely crabs, snails and oysters 	<p>- swing your arm at the shoulder to identify a ball-and-socket joint</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Label the skeleton parts in the picture of a fish.</p> <p><u>Activity 2</u></p> <p>Lift a weight and let your friend feel how your arm muscles contract. Explain how bones in the body move.</p> <p><u>Activity 3</u></p> <p>Work with a friend and gather material to make a fish skeleton according to the image provided to you. You will continue with this activity next week.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Label the skeleton parts in the picture of a bird. Explain how the skeleton parts of a fish differ from a fish's.</p> <p><u>Activity 2</u></p> <p>Explain why we are able to bend our arms and legs and other body parts.</p> <p><u>Activity 3</u></p> <p>Work with a friend and gather material to make a bird skeleton according to the image provided to you. You will continue with this activity next week.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p>Compare the skeleton parts of a human, fish and bird. How do they differ?</p> <p><u>Activity 2</u></p> <p>Label the skeleton parts and joints in the human body on the picture.</p> <p><u>Activity 3</u></p> <p>Work with a friend and gather material to make a human skeleton according to the image provided to you. You will continue with this activity next week.</p>
5	Food chains	<ul style="list-style-type: none"> • Tell why living things need food and where they get food from • Discuss how plants make their own food • Explain why animals need food • Identify the food animals eat, namely plants only, meat only or both plants and animals • List examples of animals that eat plants (e.g. cattle and sheep), meat (lions) and both plants and meat (dogs and pigs) • Describe a food chain, namely that it starts with a plant, then follows with an animal that eats the plant, then an animal that eats an animal and the human that eats the animal • Sequence pictures of different food 	<p>The teacher shows</p> <ul style="list-style-type: none"> - images of different types of animals and group them together according to what they eat, namely plants only, meat only or both plants and animals - a video of short and longer food chains <p>The teacher and learners identify living creatures in the school grounds and without hurting them, study their mouths with a magnifying glass, e.g. spiders, snails, ants, birds, lizards, chickens or caterpillars.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Label the picture of how plants make their own food</p> <p><u>Activity 2</u></p> <p>Make a two dimensional model illustrating the food chain depicting 3 living things.</p> <p><u>Activity 3</u></p> <p>Select one animal found on the school grounds and find a picture in a magazine of the animal. Name the animal, the type of food the animal eats and where the animal was found on the school grounds.</p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>chains in the correct sequence</p> <ul style="list-style-type: none"> Know and understand the terminology: herbivores, carnivores and omnivores 	<p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Copy the teacher's example of how plants make their own food.</p> <p><u>Activity 2</u></p> <p>Make a three dimensional model illustrating the food chain depicting 3 living things.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Draw a picture of how plants make their own food</p> <p><u>Activity 2</u></p> <p>Select and group images of animals that eat plants, meat and both plants and meat. Name each animal in the image.</p> <p><u>Activity 3</u></p> <p>Make a three dimensional model illustrating the food chain depicting 4 living things.</p>
6	Life cycles	<ul style="list-style-type: none"> Understand the terminology: "life cycle" Describe the life cycle of a human Describe the life cycle of a plant Know and understand the terminology: pollinate, germinate, fertilisation Describe the life cycle of an animal Know and understand the terminology: pregnancy, mammals, fertilisation, reproduce 	<p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Cut a flower and dissect the flower. Identify the different parts of the flower, namely petals, style, anther, stigma and ovary. Complete the worksheet by labelling the parts of the flower.</p> <p><u>Activity 2</u></p> <p>Arrange the pictures showing the life cycle of a mammal in the correct sequence and paste in your workbook.</p> <p><u>Grade 5: Second year</u></p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Describe the life cycle of a bird Describe the life cycle of an insect 	<p><u>Activity 1</u></p> <p>Cut a flower and dissect the flower. Identify the different parts of the flower, namely petals, style, anther, stigma and ovary. Copy the image of a flower and label the parts of the flower.</p> <p><u>Activity 2</u></p> <p>Arrange the pictures showing the life cycle of a bird in the correct sequence and paste in your workbook.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Describe the following words: life cycle, pollinate, germinate, fertilisation.</p> <p><u>Activity 2</u></p> <p>Look at the pictures of the life cycle of a mammal and describe each picture.</p> <p><u>Activity 3</u></p> <p>Dissect an insect and label the parts of the insect.</p> <p><u>Activity 4</u></p> <p>Describe the life cycle of a moth or fly.</p>
7	Nutrients in food	<ul style="list-style-type: none"> Label the SA food pyramid correctly Know and understand the terminology nutrients List nutrients in the bread and pasta group as starch, meat, fish and poultry group as protein and fat, dairy group as protein, calcium and water, and the fruit as well as vegetable group as vitamins 	<p>The teacher</p> <ul style="list-style-type: none"> demonstrates how to test food for starch with iodine. Use a starch rich food, e.g. a slice of bread and a non-starchy food as a control experiment shows learners how to examine food for fat content, by putting a tissue or paper towel over the food as the fat/oiliness will be absorbed by the tissue or paper towel. demonstrates an experiment to test for sugar in food using Benedict's solution <p>(videos of experiments available on: http://www.bbc.co.uk/bitesize/ks3/science/organisms_behaviour_health/food_detective </p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>and water</p> <ul style="list-style-type: none"> Describe how to prepare and eat fruit and vegetables to ensure that you do not waste nutrients Explain how to store bread, pasta, fruit, vegetable, meat and dairy products to make sure that the food stays fresh and not lose their nutritional value 	<p>/activity/</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>List the nutrients that we find in food, namely starch, protein, calcium, vitamins and water.</p> <p><u>Activity 2</u></p> <p>Execute the experiment to test food for starch.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>List one food source containing each of the following nutrients: starch, protein, calcium, vitamins and water.</p> <p><u>Activity 2</u></p> <p>Perform the experiment to test food for fat content.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Identify the nutrient in each of the following food sources: milk, biltong, fish, white bread, apples, carrots, yoghurt, cheese, bananas, and spinach.</p> <p><u>Activity 2</u></p> <p>Perform the experiment to test food for sugar.</p>
8	Digestion	<ul style="list-style-type: none"> Explain that the food we eat is digested Tell that teeth and saliva help to digest food Explain that organs in the body break 	<p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Identify the organs on the image that digest food.</p> <p><u>Activity 2</u></p>

Grade 5 : Term 1			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>food down/digest food and absorb the nutrients from the food</p> <ul style="list-style-type: none"> State that undigested material is waste material and the body gets rid of the waste through the rectum Know and understand the terminology: digestion, digestive system, saliva 	<p>Place three digestive organs in the correct place in a model.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Order the organs in the image in the correct order of how they assist with digestion.</p> <p><u>Activity 2</u></p> <p>Place four digestive organs in the correct place in a model.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Label the organs in the image of the digestive system correctly.</p> <p><u>Activity 2</u></p> <p>Place all the digestive organs in the correct place in a model.</p>
9	Recycling	<ul style="list-style-type: none"> Know how to group bottles, cans, paper, electronic waste and plastic correctly Know how to re-use recyclables 	<p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Group recyclables and practise to recycle the items.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Group recyclables and practise to recycle the items.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Group recyclables and practise to recycle the items.</p>

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 5 : First year</u>	<u>Grade 5 : Second year</u>	<u>Grade 5 : Third year</u>
Week 2:	Group animals, birds and insects in two groups - without bones and with bones.	Identify two animals and insects with a hard outer shell.	Identify two animals with skeletons.
Week 3:	Identify the skeleton parts of a fish skeleton.	Identify the skeleton parts of a bird skeleton.	Identify the skeleton parts of a human skeleton.
Week 4:	Produce a model of a fish skeleton.	Produce a model of a bird skeleton	Produce a model of a human skeleton
Week 5:	Make a two dimensional model illustrating the food chain depicting 3 living things.	Make a three dimensional model illustrating the food chain depicting 3 living things.	Make a three dimensional model illustrating the food chain depicting 4 living things.
Week 6	Dissect a flower correctly.	Dissect a flower correctly and label the different parts of the flower.	Dissect an insect and label the parts of the insect.
Week 7:	Execute the experiment to test food for starch.	Execute the experiment to test food for fat content.	Execute the experiment to test food for sugar.
Week 8:	Place three digestive organs in the correct place in a model.	Place four digestive organs in the correct place in a model.	Place all the digestive organs in the correct place in a model.
Week 9:	Group and recycle recyclables correctly.	Group and recycle recyclables correctly.	Group and recycle recyclables correctly.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

- Week 2: Know how plants, animals, birds and insects reproduce.
- Week 3: Know the difference between skeleton, joints and muscles.
- Week 4: Identify how animals, birds and insects move.
- Week 5: Know how plants make their own food.
- Week 6: Describe the life cycle of a (bird, animal, human or insect)
- Week 7: Describe how to prepare and eat fruit and vegetables to ensure healthy eating habits.
- Week 8: Know that teeth and saliva help to digest food.
- Week 9: Group recyclables correctly

3.9. Grade 5 Term 2

Strand: Matter and materials

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1 - 2	Metals and non-metals	<ul style="list-style-type: none"> • Arrange objects in groups of metal and non-metal objects • List the properties of metals, namely that metals are strong, very hard, shiny, malleable, conducts heat, is magnetic and melt at high temperatures • List objects made with iron, namely tools, nails, fence posts, wire fencing, palisade fencing • Know and describe the terminology: rust, alloy • List objects made with gold, silver copper and aluminium • Explain why articles are plated • List examples of non-metals • List the properties of non-metals, namely that they are not malleable and not ductile • Know and understand the terminology: rust, alloy, plated, non-metals, malleable 	<p>The teacher does an experiment with a plastic and metal spoon to show the hardness of metal.</p> <ul style="list-style-type: none"> - Place the plastic and metal spoon side by side on a table with part of the spoons hanging over the side of the table. Gently push the spoons down to show that metal is hard and do not flexible. Explain the difference between hardness, flexibility and malleable. spoons - Stand on the metal and plastic spoon to demonstrate hardness of the metal spoon <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Bring five items from home and identify what it is used for.</p> <p><u>Activity 2</u></p> <p>Group the items as metals or non-metals.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Bring five pictures from home and identify what it is used for.</p> <p><u>Activity 2</u></p> <p>Group the items as metals or non-metals and list the properties of metals.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p>

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p>Make a list of five metals and write a sentence to describe what these are used for.</p> <p><u>Activity 2</u></p> <p>Paste five pictures of non-metals in your book and list the properties of the non-metals.</p>
3-4	Uses of metals	<ul style="list-style-type: none"> • Demonstrate three properties of metals, namely that metals rust, conduct heat and show magnetic properties • Demonstrate the opposite sides of a bar magnet attract each other • Know and understand the terminology: tarnish, corrode and magnetism 	<p>The teacher does an experiment to show learners that</p> <ul style="list-style-type: none"> - metals rust - conducts heat (put butter on the tips of metal and non-metal objects and place other end in boiling water) - exhibits magnetic properties (e.g. use iron filings) - the opposite poles of magnets attract each other (e.g. kissing fish experiment) <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Perform an experiment to show that metals rust and use two different articles in your experiment. Record your findings in your workbooks.</p> <p><u>Activity 2</u></p> <p>Perform an experiment to show that metals conduct heat. Record the objects that you used to execute the experiment and findings in your workbooks.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Perform an experiment to show that metals rust and use four different articles in your experiment. Record your findings in your workbooks.</p> <p><u>Activity 2</u></p> <p>Perform an experiment to show that the opposite poles of a bar magnet attract each other. Record the objects that you used to execute the experiment and findings in your workbooks.</p>

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Perform an experiment to show that metals rust and non-metals do not rust. Use the six articles provided to you in your experiment. Record your findings in your workbooks.</p> <p><u>Activity 2</u></p> <p>Perform an experiment to show that metals are magnetic by using a bar magnet and iron filings. Record one of the patterns made with the iron filings in your workbooks.</p>
5-6	Processing materials	<p>Combining materials</p> <ul style="list-style-type: none"> Describe what it means to combine materials List methods and give examples of each to combine materials, namely <ul style="list-style-type: none"> mixing and setting, e.g. Plaster of Paris and polyfilla, Mixing and cooking, e.g. making dough, and porridge Mixing and cooling, e.g. jelly powder and water to make jelly Mixing, drying and firing, e.g. wet clay and straw to make bricks List the properties of the new materials that are produced after combining the raw materials 	<p>The teacher demonstrates how to</p> <ul style="list-style-type: none"> mix Plaster of Paris and set the mixture in a mould – mixing and setting make mealie meal pap – mixing and cooking make jelly and set the jelly - mixing and cooling <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>List the equipment needed to perform an experiment to show how mixing and cooling produce processed materials.</p> <p><u>Activity 2</u></p> <p>Mix jelly in small groups of four learners and set the jelly in moulds and eat.</p> <p><u>Activity 3</u></p> <p>Copy a flow diagram of how to mix jelly.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p>

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Know and understand the terminology: mix, dissolve 	<p>List the equipment needed to perform an experiment to show how mixing and setting produce processed materials.</p> <p><u>Activity 2</u></p> <p>Mix Plaster of Paris in small groups of four learners and set the mixture in moulds.</p> <p><u>Activity 3</u></p> <p>Draw a flow diagram to illustrate how to mix Plaster of Paris.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>List the equipment needed to perform an experiment to show how mixing and cooking produce processed materials.</p> <p><u>Activity 2</u></p> <p>Prepare maize meal pap in small groups of two learners and enjoy the pap.</p> <p><u>Activity 3</u></p> <p>Draw a flow diagram to illustrate how to mix maize meal porridge.</p>
7-8	Processed materials	<ul style="list-style-type: none"> Know and understand the terminology: processed materials Discuss the uses of Plaster of Paris, namely that Plaster of Paris is fire resistant and can be used for soft boards, to make casts and bandages, to fill cracks in walls and to produce art works Explore different materials to see if they are durable and waterproof and can be 	<p>The teacher group examples of different materials together and demonstrate how to test the properties of different materials, namely water absorbency and strength.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Bring any two small items or pictures from home made with processed materials. Put all the items together that were brought to school and divide the items in groups according the raw materials that were used to produce the items.</p> <p><u>Activity 2</u></p> <p>Make a list of all the items in each group in your book.</p>

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>used for building</p> <ul style="list-style-type: none"> • Explain the properties of ceramics and glass • Explain the uses of ceramics and glass namely to produce pottery items, tiles, basins, toilets and to use in construction glass is used as windows in buildings • Explain the properties of plastic and the uses of thereof, namely to produce plastic pipes, plastic coverings around electric wires and to produce dishes • Describe how traditional clay pots and bricks were produced • Distinguish between traditional methods of processing baskets, hat and mats, e.g. weaving, plating and coiling 	<p><u>Activity 3</u></p> <p>List the equipment needed to conduct an experiment to test Plaster of Paris for water absorbency and strength.</p> <p><u>Activity 4</u></p> <p>Test Plaster of Paris for water absorbency and strength.</p> <p><u>Grade 5: Second year</u></p> <p>The learners are grouped together in groups of four learners to execute the activities</p> <p><u>Activity 1</u></p> <p>Bring any two small items or pictures from home made with processed materials. Put all the items together that were brought to school and divide the items in groups according to the raw materials that were used to produce the items.</p> <p><u>Activity 2</u></p> <p>Make a list of all the items in each group in your book.</p> <p><u>Activity 3</u></p> <p>List the equipment needed to conduct an experiment to test concrete for water absorbency and strength.</p> <p><u>Activity 4</u></p> <p>Test concrete for water absorbency and strength and record your findings in a table.</p> <p><u>Grade 5: Third year</u></p> <p>The learners are grouped together in groups of two learners to execute the activities</p> <p><u>Activity 1</u></p> <p>Bring any two small items or pictures from home made with processed materials. Put all the</p>

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p>items together that were brought to school and divide the items in groups according to the raw materials that were used to produce the items.</p> <p><u>Activity 2</u></p> <p>Make a list of all the items in each group in your book.</p> <p><u>Activity 3</u></p> <p>List the equipment needed to conduct an experiment to test ceramics for water absorbency and strength.</p> <p><u>Activity 4</u></p> <p>Test ceramics for water absorbency and strength and record your findings in a table.</p>
9	Recycling	<ul style="list-style-type: none"> • Know and understand the terminology: water pollution, water borne diseases, water purification • Identify different types of water pollutants, namely litter and chemicals • Know that a clean supply of drinking water is important to people, plants and animals • List different processes to purify water, namely sieving, settling, decanting, boiling and adding chemicals • List places in your province that recycles water. • List the nearest buy-back and drop-off centres for recyclable items 	<p>Teacher demonstrates how to</p> <ul style="list-style-type: none"> - make a water filter using a sieve, filter paper and funnel or a clean cloth or cotton handkerchief and elastic band - how to make a usable article using a can <p>Learners are divided in small groups to do the following activities.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Purify dirty water by using the sieving method.</p> <p><u>Activity 2</u></p> <p>Practise to group and recycle recyclables at school.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Purify dirty water by using the settling method.</p> <p><u>Activity 2</u></p>

Grade 5 : Term 2			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> Visit the website of the National Recycling Forum in South Africa at www.recycling.co.za to find your nearest recycler in your area 	<p>Produce a usable article using empty cans collected in your community.</p> <p><u>Activity 3</u></p> <p>Practise to group and recycle recyclables at school.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Purify dirty water by adding chemicals to the water.</p> <p><u>Activity 2</u></p> <p>Produce a decorative article using empty cans collected in your community.</p> <p><u>Activity 3</u></p> <p>Practise to group and recycle recyclables at school.</p>

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 5 : First year</u>	<u>Grade 5 : Second year</u>	<u>Grade 5 : Third year</u>
Week 2:	Group items as metals or non-metals.	List the properties of metals.	List the properties non-metals.
Week 3:	Perform an experiment to show that metals rust.	Perform an experiment to show that the opposite poles of a bar magnet attract each other.	Perform an experiment to show that metals rust and non-metals do not rust.
Week 4:	Perform an experiment to show that metals conduct heat.	Perform an experiment to show that metals are magnetic.	Perform an experiment to show metals are magnetic. Record one magnetic pattern.
Week 5:	List the equipment needed to perform an experiment to show how mixing and cooling produce processed materials.	List the equipment needed to perform an experiment to show how mixing and setting produce processed materials.	List the equipment needed to perform an experiment to show how mixing and cooking produce processed materials.
Week 6	Perform an experiment to show how mixing and cooling produce processed materials.	Perform an experiment to show how mixing and setting produce processed materials.	Perform an experiment to show how mixing and cooking produce processed materials.
Week 7:	List the equipment needed to perform an experiment to test Plaster of Paris for water absorbency and strength.	List the equipment needed to perform an experiment to test concrete for water absorbency and strength.	List the equipment needed to perform an experiment to test ceramics for water absorbency and strength.
Week 8:	Test Plaster of Paris for water absorbency and strength.	Test concrete for water absorbency and strength.	Test ceramics for water absorbency and strength.
Week 9:	Perform an experiment to purify dirty water by using the sieving method.	Perform an experiment to purify dirty water by using the settling method.	Purify dirty water by adding chemicals to the water.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

- Week 2: Group objects in groups of metal and non-metal objects.
- Week 3: Know three properties of metals.
- Week 4: Know that the opposite sides of a magnet attract each other.
- Week 5: Describe what it means to combine materials.

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| Week 6: | List three methods to combine materials. |
| Week 7: | State the properties of two processed materials. |
| Week 8: | State the use of two processed materials. |
| Week 9: | Identify different types of water pollutants. |

3.10. GRADE 5 TERM 3

Strand: Energy and change

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1 - 2	Energy in fuels	<ul style="list-style-type: none"> Know and describe the terminology: fuel Know and understand that fuel is a substance that can be eaten or burned to produce energy Discuss how plants use the sun's energy to produce food List fuels that humans use as energy sources, namely wood, coal, natural gas, candle wax, petrol and paraffin Name the two prerequisites for fuels to keep burning, namely heat and oxygen Identify and draw the fire triangle Demonstrate how to stop a fire from burning, namely to cut off the oxygen supply Describe how to extinguish an electrical fire in the home Know the Learn not to Burn programme messages for young children, namely <ul style="list-style-type: none"> Matches and lighters can burn you – 	<p>The teacher performs an experiment to show that oxygen is a prerequisite for fuels to keep burning. Three 10 cm candles are lit, the</p> <ul style="list-style-type: none"> first candle left uncovered to burn, second candle covered with a small bottle and third with a large bottle. <p>The uncovered candle will burn the longest as oxygen is freely available and the candle covered with the small bottle will stop burning before the candle covered with the large bottle because of the limited amount of oxygen available in the small bottle.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Plan an experiment with two candles to show that fuel needs heat and oxygen to burn.</p> <p><u>Activity 2</u></p> <p>Sing the song from the Learn not to Burn programme for young children:</p> <p>I don't play with paraffin I don't touch I don't play It can burn me It can burn me So stay away Stay away</p>

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<p>leave the alone</p> <ul style="list-style-type: none"> - Stay away from paraffin – it can hurt you - Stay away from flames and fire – they can burn you - If your clothes catch on fire, stop, drop and roll 	<p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Perform an experiment with two candles to show that fuel needs heat and oxygen to burn</p> <p><u>Activity 2</u></p> <p>Make a list of possible electrical fire hazards in your classroom and tell how to extinguish an electrical fire.</p> <p><u>Activity 3</u></p> <p>Practise the Learn not to Burn message: “If your clothes catch on fire, stop, drop and roll” on command of the teacher. The learners move around in the class and immediately stop when the teacher command them to do so, then lie flat on the ground and cover their faces with their hands, and keep rolling over and over until the “flames” have been smothered.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Make a list of possible electrical fire hazards in your home and explain how to extinguish an electrical fire.</p> <p><u>Activity 2</u></p> <p>Demonstrate the Learn not to Burn message: stop, drop and roll.</p> <p><u>Activity 3</u></p> <p>Use a fire extinguisher correctly.</p>
3	Energy in fuels	<ul style="list-style-type: none"> • List ways to prevent fires namely: <ul style="list-style-type: none"> • Do not play with matches or lighters • Do not pour fuel onto a burning fire • Make sure candles are in sturdy candleholders and never put a 	<p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>List ways to prevent fires and demonstrate these to the class.</p> <p><u>Grade 5: Second year</u></p>

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> candle near anything that might catch fire Place fireguards in front of fireplaces Do not dry clothes on or near a heater Never use gas near drain pipes Do not put your fingers in electrical appliances or wall plugs Make sure to extinguish and outdoor campfire or braai Know the Learn not to Burn messages for young children, namely: <ul style="list-style-type: none"> Matches and lighters can burn you – leave them alone If your house is on fire, get out and stay outside Cool a burn with cool water Fire fighters are helpers Know how to get out of a building on fire 	<p><u>Activity 1</u></p> <p>Demonstrate the following Learn not to Burn message to the class: “If your house is on fire, get out and stay outside” to the class. Follow these steps:</p> <ul style="list-style-type: none"> Stay calm Stay low on the ground to avoid the smoke Hold onto one wall and crawl on your knees out of the building holding onto the wall Never change holding onto the other wall as this may result in longer time to find the exit Immediately call the fire brigade after exiting <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Draw an escape plan for your house and share your plan with the class.</p> <p><u>Activity 2</u></p> <p>Draw an escape plan for your class and choose a meeting place to meet after the escape has taken place.</p> <p><u>Activity 3</u></p> <p>Make a list showing the following emergency numbers:</p> <ul style="list-style-type: none"> Local fire brigade Local ambulance Emergency number to call from a cell phone, namely 112
4-5	Energy and electricity	<ul style="list-style-type: none"> Explain that energy can be stored in cells and batteries 	The teacher demonstrates how to make a battery using two coins (one nickel and one copper), one lemon and 2 pieces of wire.

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		<ul style="list-style-type: none"> • Know that a battery is made of one or more cells • Explain that stored energy is controlled by a switch • Tell that the two ends of a battery is different and that one end is positive and the other negative • Describe an electrical circuit • Describe what happens when a circuit is broken • Discuss safety measurements when working with electricity • Discuss the national electricity grid • State the function of a national electricity grid • List the parts of the main electricity system • Describe how electricity gets to the appliances we use • List the sources of energy power stations utilize, namely coal, nuclear fuel, wind turbines, solar energy • List points how to use plugs and wall 	<p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Practise how to put batteries in different appliances and take them out again.</p> <p><u>Activity 2</u></p> <p>Copy a diagram from the board of an electrical circuit in a torch into your book.</p> <p><u>Activity 3</u></p> <p>Repeat the teacher's experiment and make a lemon battery.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Build your own electrical circuit using a battery, electrical wire and a light bulb.</p> <p><u>Activity 2</u></p> <p>Draw your electrical circuit to show how the battery, electrical wires and light bulb are connected.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Practise how to wire an electrical plug.</p> <p><u>Activity 2</u></p> <p>Build your own electrical circuit with a switch, using a battery, electrical wire, a light bulb, two metal drawing pins, a metal paper clip and a plank about 8cmX 5 cm.</p> <p><u>Activity 3</u></p> <p>Make a list to indicate how you will use electrical appliances safely.</p>

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		sockets and electrical cords safely <ul style="list-style-type: none"> List general safety precautions to take when using electricity and electrical appliances Know and understand the following terminology: cells, positive end of cell and negative end of cell, stored energy, rechargeable cells, electrical circuit, electricity box, wall socket, plug, generator, pylon, and substation. 	
6 - 7	Energy and movement	<ul style="list-style-type: none"> Demonstrate how to make objects move by using stretched or twisted elastic and compressed springs Explain that we store energy in an elastic band or spring when we twist or compress the band or spring Demonstrate how to create movement energy by releasing an elastic band or compressed spring 	<p>The teacher demonstrates how</p> <ul style="list-style-type: none"> a hand-held catapult creates movement energy when the catapult is stretched and released. the spring in a mousetrap creates movement energy upon releasing the spring to make a wind-up toy using an elastic band, match stick and an empty cotton reel <p>The teacher divides the learners in small groups of four learners to execute the activities.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Plan how to build a catapult.</p> <p><u>Activity 2</u></p> <p>Build your own catapult and demonstrate how to use the catapult safely.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p>

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p>Plan how to build a “bird in the cage” experiment to demonstrate how twisted elastic makes objects move.</p> <p><u>Activity 2</u></p> <p>Create a “bird in the cage” spinner using a rectangular shape card, a pen to draw the cage and the bird, a punch to punch holes on the left and right sides of the card, two elastic bands.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Plan how to build a moving toy.</p> <p><u>Activity 2</u></p> <p>Build a moving toy.</p>
8	Energy and movement	<ul style="list-style-type: none"> Describe how a bicycle and a wheelbarrow moves Know and understand the terminology: system, axle, turning axles, fixed axle Identify different types of input energy that is suitable to make vehicles move, e.g. pram, bicycle, taxi, car 	<p>Teacher demonstrates how to build moving objects using wheels and axles. The teacher divides the learners in pair to complete the activities and provides examples with the equipment they need to complete the activity.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Build a toy vehicle with a turning axle.</p> <p><u>Grade 5: Second year and second year</u></p> <p><u>Activity 1</u></p> <p>Build a toy vehicle with a fixed axle.</p> <p><u>Grade 5: Third year</u></p>

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<u>Activity 1</u> Build a toy vehicle with a fixed as well as turning axle.
9	Recycling	<ul style="list-style-type: none"> List examples of electronic waste Discuss how electronic waste may be harmful to living and non-living things Discuss pre-cautions to take when collecting electronic waste Visit the electronic waste association website at www.ewasa.org for more information 	<u>Grade 5: First year</u> <u>Activity 1</u> List the raw materials personal computers are made from and list the materials that may pose a risk to your health. <u>Activity 2</u> Practise to collect, group and recycle recyclables at school. <u>Activity 3</u> Discuss how you can re-use personal computers. <u>Grade 5: Second year</u> <u>Activity 1</u> List the raw materials cell phones are made from and list the materials that may pose a risk to your health. <u>Activity 2</u> Practise to collect, group and recycle recyclables at school. <u>Activity 3</u> Discuss how you can re-use cell phones. <u>Grade 5: Third year</u> <u>Activity 1</u> List the raw materials compact fluorescent lamps are made from and list the materials that may pose a risk to your health.

Grade 5 : Term 3			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<u>Activity 2</u> Practise to group and recycle recyclables at school. <u>Activity 3</u> Discuss how you can re-use fluorescent lamps.

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 5 : First year</u>	<u>Grade 5 : Second year</u>	<u>Grade 5 : Third year</u>
Week 2:	Plan an experiment to show that fuel needs heat and oxygen to burn.	Perform an experiment with two candles to show that fuel needs heat and oxygen to burn	Use a fire extinguisher correctly.
Week 3:	Demonstrate how to prevent fires.	Demonstrate how to exit a building on fire.	Know the emergency number to call from a cell phone.
Week 4:	Know how to put batteries in appliances.	Draw an electrical circuit.	Wire an electrical plug
Week 5:	Build a battery using a lemon.	Build an electrical circuit.	Build an electrical circuit with a switch.
Week 6:	Plan how to build a catapult	Plan how to build a "bird in the cage" experiment	Plan how to build a moving toy.
Week 7:	Build a catapult and demonstrate how to use the catapult safely.	Perform an experiment to show how twisted elastic makes objects move.	Build a moving toy.
Week 8:	Build a toy vehicle with a turning axle.	Build a toy vehicle with a fixed axle.	Build a toy vehicle with a fixed as well as turning axle.
Week 9:	Collect, group and recycle recyclables safely.	Collect, group and recycle recyclables safely.	Collect, group and recycle recyclables safely.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

- Week 2: Know that plants use the sun's energy to produce food.
- Week 3: List ways to prevent fires.
- Week 4: Know that energy can be stored in cells and batteries.
- Week 5: Know that stored energy is controlled by a switch.
- Week 6: Describe how to make objects move using elastic and springs.
- Week 7: Know that energy can be stored in an elastic band.
- Week 8: Describe how a bicycle moves.
- Week 9: Discuss pre-cautions to take when collecting electronic waste.

3.11. GRADE 5 TERM 4

Strand: Earth and beyond

Grade 5 : Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
1 - 2	Surface of the earth	<ul style="list-style-type: none"> State that the surface of the earth is made of rock and soil and is called the crust List the determinants of life on earth, namely soil, air, water and sunlight Distinguish between topsoil, subsoil and solid rock Describe how topsoil is formed by rocks that are broken into tiny pieces Distinguish between sandy soil, clayey soil and loamy soil State that soil has air, water and very small living organisms in it State and understand that dead plant and animals decompose in soil resulting in spreading nutrients through the soil to make it more fertile Understand that soil forms very slowly in nature and cannot be replaced when lost Know and understand the terminology: 	<p>The teacher executes an experiment</p> <ul style="list-style-type: none"> with soil in a bottle filled with water. Shake the bottle very well and then let the soil settle, the bubbles in the water show that spaces between the soil particles. After a while the water will form the top layer in the bottle, followed by the clayey layers, then sandy layer and gravel at the bottom. with sandy, clayey and loamy soil to determine the amount of water let through each type of soil and the amount of water held by each type of soil. The teacher demonstrates to the learners how to record their findings in a table. <p>The learners work together in pairs to complete the activities.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Locate and collect three different types of soil in the school gardens and repeat the teacher's experiment. Record your findings on the layers formed by different types of soil in your workbook.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Select one type of soil provided by the teacher. Plant a seedling in the soil and measure the height of the seedling weekly for four weeks. Record your findings.</p>

Grade 5 : Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		top soil, clayey soil, loamy soil, decompose, erosion	<u>Grade 5: Third year</u> <u>Activity 1</u> Select one type of soil provided by the teacher. Plant a seedling in the soil and measure the height of the seedling weekly for four weeks. Record your findings. Compare the height of the seedlings in the different types of soil. Give three reasons why you think the growth of the seedlings varies. Provide reasons why different types of soil influence plant growth.
3	Sedimentary rocks	<ul style="list-style-type: none"> Know and understand the terminology: sediments, sedimentary rock, compact, shale, sandstone, limestone Describe what sedimentary rock means, namely rock formed over a long time and consists of different layers of rock Describe how sedimentary rock is formed, namely that mud, dust and sand are deposited in low-lying areas, the layers become compacted and hardens to form sedimentary rock List a characteristic of sedimentary rock, namely that layers are visible within the rock List examples of sedimentary rock, namely shale, sandstone and limestone Give examples of the uses of limestone, 	<u>Grade 5: First year</u> <u>Activity 1</u> Make a sedimentary layer model. <u>Grade 5: Second year</u> <u>Activity 1</u> Make a sample of sedimentary rock from rocks (gravel), sand and water. <u>Grade 5: Third year</u> <u>Activity 1</u> Make sedimentary rock with rocks (gravel), sand and clay.

Grade 5 : Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
		shale and sandstone	
4-5	Fossils	<ul style="list-style-type: none"> Know and understand the terminology: fossils, preserved Tell how fossils are formed Tell why fossils are important to humans Name one fossil site in your province Name a region in South Africa where dinosaurs lived many years ago Name the region where human fossils have been found in South Africa Read and understand a time chart showing when which living things existed 	<p>The teacher demonstrates how to make a plant fossil, using plasticine, plaster of Paris and a leaf with distinct veins. Roll the plasticine out about 10 mm thick, press the leaf into the plasticine, build the outer edges of the plasticine up, peel the leaf off, fill the plasticine mould with a mixture of plaster of Paris and leave to set. When the plaster of Paris has set, peel off the plasticine and you will have a leave “fossil”. A mould can also be made using damp, fine sand similar to sea sand.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Plan how to make a leave “fossil”.</p> <p><u>Activity 2</u></p> <p>Make your own leave “fossil”.</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Plan how to make a sea shell “fossil”.</p> <p><u>Activity 2</u></p> <p>Make your own sea shell “fossil”.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Plan how to make a sea animal “fossil”.</p> <p><u>Activity 2</u></p>

Grade 5 : Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			Make your own sea animal "fossil", e.g. crab sea star.
6 - 8	Movement of the earth and planets	<ul style="list-style-type: none"> Know that the movement of the earth and planets results in different seasons Name the four seasons and the months of the year during which we experience the different seasons Identify the weather symbols for sunny, cloudy, partly cloudy and rainy weather Identify the weather symbols in different media Explain that we measure temperature with a thermometer Read and record temperatures on a thermometer correctly Explain how to measure the direction of wind Read a rain gauge correctly and record rainfall correctly 	<p>The teacher demonstrates how to make a</p> <ul style="list-style-type: none"> wind-vane to show the direction the wind is coming from rain gauge with a jar and a strip of masking tape <p>The teacher divides the learners in small groups of four learners to execute the activities.</p> <p><u>Grade 5: First year</u></p> <p><u>Activity 1</u></p> <p>Cut a weather forecast chart from a newspaper and discuss the predicted weather according to the symbols on the weather chart.</p> <p><u>Activity 2</u></p> <p>Draw a table with two rows and seven columns. Write the names of the days in the top row and record the daily temperature over one week.</p> <p><u>Activity 3</u></p> <p>Plan how to make a wind-vane.</p> <p><u>Activity 4</u></p> <p>Make your own wind-vane and blow in different directions to establish the direction of the "wind"</p> <p><u>Grade 5: Second year</u></p> <p><u>Activity 1</u></p> <p>Cut and paste weather symbols in your workbook. List the words that represent the different weather symbols.</p> <p><u>Activity 2</u></p>

Grade 5 : Term 4			
Week	Topic	Content The learner must be able to:	Suggested activities, investigations practical work and demonstrations
			<p>Draw a table with three rows and seven columns. Write the names of the days in the top row and record the daily temperature and wind direction over one week.</p> <p><u>Activity 3</u></p> <p>Plan how to make a rain gauge.</p> <p><u>Activity 4</u></p> <p>Make your own rain gauge to measure rainfall and record the rainfall.</p> <p><u>Grade 5: Third year</u></p> <p><u>Activity 1</u></p> <p>Explain the weather forecast chart for the previous day.</p> <p><u>Activity 2</u></p> <p>Examine the weather forecast chart and record the town with the highest and lowest temperatures and wind speed.</p> <p><u>Activity 3</u></p> <p>Plan how to make a model to deliver weather forecasts.</p> <p><u>Activity 4</u></p> <p>Make a model to deliver weather forecasts.</p>
9	Recycling	<ul style="list-style-type: none"> Discuss what happens to rubbish that we don't recycle Locate the nearest landfill to your school and home Practise to recycle different recyclables at your school 	<p><u>Grade 5: First year</u></p> <p>Practise to collect, group and recycle recyclables at school.</p> <p><u>Grade 5: Second year</u></p> <p>Practise to collect, group and recycle recyclables at school.</p> <p><u>Grade 5: Second year</u></p> <p>Practise to collect, group and recycle recyclables at school.</p>

Assessment

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<u>Week</u>	<u>Grade 5 : First year</u>	<u>Grade 5 : Second year</u>	<u>Grade 5 : Third year</u>
Week 2:	Locate and collect three different types of soil	Select one type of soil, and plant a seedling to determine the influence soil has on plant growth	Provide reasons why different types of soil influence plant growth.
Week 3:	Make a sedimentary layer model.	Make a sample of sedimentary rock from rocks, sand and water.	Make sedimentary rock with rocks, sand and clay.
Week 4:	Plan how to make a leave "fossil".	Plan how to make a seashell "fossil".	Plan how to make a sea animal "fossil".
Week 5:	Make a leave "fossil".	Make your own seashell "fossil".	Make a sea animal "fossil".
Week 6:	Plan how to make a wind-vane.	Plan how to make a rain gauge.	Plan how to make a model to deliver weather forecasts.
Week 7:	Make a wind-vane.	Make a rain gauge.	Make a weather forecast model.
Week 8:	Know how to establish the direction of the wind.	Know how to read and record rainfall measured in a rain gauge.	Explain the weather forecast chart for the previous day.
Week 9:	Practise to collect, group and recycle recyclables at school.	Practise to collect, group and recycle recyclables at school.	Practise to collect, group and recycle recyclables at school.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

- Week 2: Distinguish between sandy soil, clayey soil and loamy soil.
- Week 3: List examples of sedimentary rock.
- Week 4: Know one fossil site in my province.
- Week 5: Know how fossils are formed.
- Week 6: Name the four seasons correctly.
- Week 7: Identify the weather symbols correctly.
- Week 8: Know how to measure temperature
- Week 9: Know what pollution is.

4. SECTION 4: ASSESSMENT

4.1. Introduction

This section on assessment *standardises* the recording and reporting processes for the CAPS Grades R to 5 for learners with Severe Intellectual Disability. It also provides a policy framework for the management of School Based Assessment (SBA) and School Assessment Records.

It is required of teachers to offer a differentiated form of assessment, as learners with moderate to severe intellectual disability and learning difficulties also have diverse learning styles and support needs. Since a learner or learners may be functioning on different levels, the assessment / recording / reporting system must make provision for reflecting the level(s) of each individual learner. These different levels should be outlined in the Individual Support Plan which should be developed at the beginning of the year in accordance with the procedures contained in the *Policy on Screening, Identification, Assessment and Support* (SIAS). Each learner, regardless of his/her number of years in the school, must have access to various forms of assessment best suited to his/her competences, learning styles, strengths and needs. The targets set for each learner in terms of attainment of knowledge and skills outlined in each Subject Statement will always strive to take a learner to the next level and should never set a ceiling on learning potential. Individualised adaptation is required in terms of content, methods of presentation, classroom pedagogy, pacing of instruction and accommodations in assessment. The principle is to have high expectations for each learner, to identify and address barriers to learning so as to ensure fairness in assessment (See Chapter 9 of the National Protocol for Assessment, 2011).

Assessment does not imply that after every lesson the learners must complete a worksheet/assignment or project, but will be based on observation and recording of progress steps attained during the lesson or a series of lessons. Formal assessment can be done in a format which would be suitable for each learner, e.g. through written or oral assessments, or by making use of a range of accommodations measures, e.g. a reader and a scribe. The main aim is to be able to develop a report which is based on definable attainment (even through the smallest of steps) as prescribed in each subject and can be shared with parents

and care-givers on at least a quarterly basis so as to elicit their participation and co-operation in the support programme of the learner. At the end of the year a Statement of Achievement/Report card must be made available on which the Individual Support Plan for the following year will be based. There will be no learner retention, as the Individual Support Plan and the Curriculum Schedule (see SIAS Form 124) will indicate at which grade level learners are working in each subject.

4.2. Assessment principles

4.2.1. Definition

Assessment is a continuous planned process of identifying, gathering and interpreting information about the performance of learners, using various forms of assessment. It involves four steps: generating and collecting evidence of achievement; evaluating this evidence; recording the findings and using this information to understand and thereby assist the learner's development in order to improve the process of learning and teaching. Assessment should be both informal (Assessment for Learning) and formal (Assessment of Learning). In both cases regular feedback should be provided to learners to enhance the learning experience.

Assessment is a process that measures individual learners' attainment of knowledge (content and concepts) and skills by collecting, analysing and interpreting the data and information obtained from this process to:

- enable the teacher to assess a learner's progress in a reliable way.
- inform learners of their strengths, areas to be developed and progress.
- assist teachers, parents and other stakeholders in making decisions about the learning process, the progress of learners and the planning for their individualised support.

Assessment should be mapped against the content, skills, intended goals and topics specified in the learning programme. In both informal and formal assessments it is important to ensure that in the course of a school year:

- all of the topics and content are covered.

- the full range of skills is included.
- a variety of different forms of assessment are used.

4.2.2. Informal Assessment or Daily Assessment

Assessment **for** learning has the purpose of continuously collecting information on a learner's achievement that can be used to improve their learning. Informal assessment is a daily monitoring of learners' progress. This is done through observations, discussions, practical demonstrations, learner-teacher conferences, informal classroom interactions, etc. Informal assessment may be as simple as stopping during the lesson to observe learners or to discuss with learners how learning is progressing. Informal assessment should be used to provide feedback to the learners and to inform planning for teaching but need not be recorded. It should not be seen as separate from learning activities taking place in the classroom.

Learners or teachers can assess their performance in the tasks. Self-assessment and peer assessment actively involves learners in assessment. This is important as it allows learners to learn from and reflect on their own performance. The results of all the informal daily assessment tasks may be recorded based on assessment instruments used such as rubrics and checklists. This may serve to give feedback to the learners, their parents and the school management team.

Informal, on-going assessments should be used to scaffold the acquisition of knowledge and skills and should be the stepping stones leading up to formal assessment.

4.2.3. Formal Assessment

All assessment tasks that make up a formal programme of assessment for the year are regarded as formal assessment. Formal assessment tasks are marked and results are formally recorded by the teacher. All formal assessment tasks are subject to internal moderation for the purpose of quality assurance and to ensure that appropriate standards

are maintained in the school. Assessment tasks should always set high expectations for learners.

To implement formal assessment the teacher should:

- Ensure that the formal assessment task coincides with the practical skills and theoretical work embedded in the practical skill corresponding with the tasks performed on that day or within the previous week;
- Explain the task to guide the learner, show an example of the completed task in order for the learner to know exactly what to do and what is expected;
- Divide the class, according to abilities, in more than one group and give a task with similar content, but differentiated in terms of level of difficulty, abstractness or method of questioning, to all the learners. The way in which the assessment task is set should be in reach of the learners' level of development whilst also setting targets for the next step of development;
- Written tests could be set to assess theoretical knowledge within a set time, allowing for assessment accommodations in line with learners' individual needs;
- Write the date of expected completion of the task in the learner's book;
- Compile a suitable assessment tool; and
- Formal assessment should reflect 20 % theoretical knowledge embedded in practical work. Eighty percent (80%) should be practical work.

The formal assessment requirements are indicated in the formal School-Based Assessments table. In the three core subjects, the ratio may be adapted to the needs of the learners. The focus however must be on practical skills and not on the written tasks.

Formal School-Based Assessments			
Term 1	Term 2	Term 3	Term 4
Minimum of 1 worksheet/test/activity	Minimum of 1 worksheet/test/activity	Minimum of 1 worksheet/test/activity	Minimum of 1 worksheet/test/activity

per term in order for 20 % of rating codes to reflect on theoretical knowledge	per term in order for 20 % of rating codes to reflect on theoretical knowledge	per term in order for 20 % of rating codes to reflect on theoretical knowledge	per term in order for 20 % of rating codes to reflect on theoretical knowledge
minimum of 4 practical assessment tasks or activities in order for 80% of rating codes to reflect on different practical skills	minimum of 4 practical assessment tasks or activities in order for 80% of rating codes to reflect on different practical skills	minimum of 4 practical assessment tasks or activities in order for 80% of rating codes to reflect on different practical skills	minimum of 4 practical assessment tasks or activities in order for 80% of rating codes to reflect on different practical skills

In Creative Arts and Art and Crafts, the above table is not applicable. In these two subjects, a minimum of 4 practical assessment tasks should be completed. Theoretical content will not be assessed. Refer to the learning programme for assessment requirements.

In Physical Education assessment, the above tables does not apply. Refer to the learning programme for assessment.

Assessment in the CAPS Grades R to 5 for learners with Severe Intellectual Disability is underpinned by the objectives of the National Qualifications Framework (NQF). These objectives are to:

- Create an integrated national framework for learning achievements;
- Facilitate access to and progression within education, training and career paths;
- Enhance the quality of education and training;
- Redress unfair discrimination and past imbalances and thereby accelerate employment opportunities;
- Contribute to the holistic development of the learner and preparation for the world of work by addressing:
 - social adjustment and responsibility;
 - moral accountability and ethical work orientation;

- resilience and adaptability;
- economic participation and entrepreneurial skills; and
- nation-building.

The principles that drive these objectives are:

- ***Integration***

To adopt a unified approach to education and training that will strengthen the capacity of learners to adapt to the requirements of the workplace.

- ***Relevance***

To be dynamic and responsive to workplace needs and a range of employment fields.

- ***Credibility***

To demonstrate national and international values and recognition of qualification and acquired competencies and skills.

- ***Coherence***

To work within a consistent framework of principles.

- ***Flexibility***

To allow for creativity and resourcefulness when achieving skills to cater for different learning styles and use a range of assessment methods, instruments and techniques.

- ***Participation***

To enable stakeholders to participate in setting standards and co-ordinating the achievement of the qualification.

- ***Access***

To address barriers to learning at each level to facilitate learners' progress.

- ***Progression***

To ensure that the qualification framework permits individuals to move through the levels of the national qualification via different, appropriate combinations of the components of the delivery system.

- ***Articulation***

To allow for vertical and horizontal mobility in the education system when accredited pre-requisites have been successfully completed.

- ***Validity of assessments***

To ensure assessment covers a broad range of knowledge, skills, values and attitudes to demonstrate applied competency. This is achieved through:

- clearly stating the skill to be assessed;
- selecting the appropriate or suitable evidence;
- matching the evidence with a compatible or appropriate method of assessment; and
- selecting and constructing an instrument(s) of assessment.

- ***Reliability***

To assure assessment practices are consistent so that the same result or judgment is arrived at if the assessment is replicated in the same context. This demands consistency in the interpretation of evidence; therefore, careful monitoring of assessment is vital.

- ***Fairness and transparency***

To verify that no assessment process or method(s) hinders or unfairly advantages any learner. The following could constitute unfairness in assessment:

- Inequality of opportunities, resources or teaching and learning approaches
- Bias based on ethnicity, race, gender, age, disability or social class
- Lack of clarity regarding topic, content or skill being assessed
- Comparison of learners' work with that of other learners, without taking into account differences in learning styles, language and culture.

- ***Practicability and cost-effectiveness***

To integrate assessment practices within the teaching and learning process and strive for cost and time-effective assessment.

4.3. Managing assessment

4.3.1. Types of Assessment

Assessment benefits the learner and the teacher. It informs learners about their progress and helps teachers make informed decisions at different stages of the learning process. Depending on the intended purpose, different types of assessment can be used.

- **Baseline assessment:** At the beginning of a year or learning experience, baseline assessment establishes the knowledge, skills, values and attitudes that learners bring to the classroom. This knowledge assists teachers to plan learning programmes and learning activities flexibly enough to accommodate a wide range of learning styles and learning needs. This assessment should be done at three levels, namely to determine:

Progress with the curriculum

- Are learner learning what they were taught?
- Are they at the right entry point to 'grasp' the content worked on in the classroom?
- Are they practicing and performing as expected?
- Are they applying the facts, concepts and/or skills being learned?

Interests

- Are learners engaged in the lessons and activities?
- Are they showing interest in a new topic or area of study?
- Are they sharing their interests with others?

Characteristics

- What are their preferred learning styles (e.g., whole class teaching or pair work)?
- What are their responses to the content?
- What are their responses to the difficulty level of instruction?
- What are their responses to the pacing of instruction?
- What are their responses to the environment?
- **Diagnostic assessment:** This assessment diagnoses the nature and causes of learning barriers experienced by specific learners. It is followed by guidance, appropriate support and intervention strategies. This type of assessment is useful to make referrals for learners requiring specialist assistance.
- **Formative assessment (Informal Assessment):** This assessment monitors and supports teaching and learning. It determines learners' strengths and areas to be addressed

and provides feedback on progress. It determines if a learner is ready for summative assessment.

- **Summative assessment (Formal Assessment):** This type of assessment gives an overall picture of the learner's progress at a given time.

4.3.2. Planning Assessment

An assessment plan should cover three main processes:

- **Collecting evidence:** The assessment plan indicates which learning programme topics, content and skills will be assessed, what assessment method or activity will be used and when this assessment will be conducted.

The assessment tasks may be broken down (designed down) into smaller, achievable steps and support may gradually be withdrawn as the learner master the content/skills. Thus, designing down means to look at the assessment goal and dividing this into smaller components which are spread over a longer period.

Two or more grades may be straddled, in other words the evidence may be collected over more than one grade within a subject. But straddling should be carefully recorded and monitored through Form 125 of the SIAS Protocol.

- **Recording:** The process of recording refers to the assessment instruments or tools with which the assessment will be captured or recorded. Therefore, appropriate assessment instruments must be developed or adapted.
- **Reporting:** All the evidence is put together in a report to deliver a decision for the subject. Reporting must reflect the straddling that has been applied and should provide guidance to parents through meaningful descriptive paragraphs on what has been achieved and what the next expected outcomes are.

4.3.3. Methods of Assessment

Methods of assessment refer to who carries out the assessment and includes teacher assessment, self-assessment, peer assessment and group assessment.

TEACHER ASSESSMENT	The teacher assesses learners' performance against given criteria in different contexts, such as individual work, group work, etc.
SELF-ASSESSMENT	Learners assess their own performance against given criteria in different contexts, such as individual work, group work, etc.
PEER ASSESSMENT	Learners assess another learner or group of learners' performance against given criteria in different contexts, such as individual work, group work, etc.
GROUP ASSESSMENT	Learners assess the individual performance of other learners within a group or the overall performance of a group of students against given criteria.

4.3.4. Assessment tools/instruments to execute assessment

An assessment tool is the instrument the teacher utilizes to execute the assessment. When choosing an assessment tool ensure that the tool:

- is appropriate for the selected assessment method;
- provides the most valid and reliable information on the learners' performances;
- measures the objectives of the lesson.

Examples of assessment tools are checklist, rubrics, questionnaires, worksheets and video recordings.

A **rubric** serves as an objective assessment tool that provides, at varying levels, clear descriptions of the characteristics of the tasks. The descriptions or criteria in the rubric

enables learners to understand what the teacher expects from them and complete the task accordingly. Rubrics are either holistic or analytic.

Rubrics should explain the competence level descriptors for the skills, knowledge, values and attitudes (SKVAs) a learners must demonstrate to achieve each level of the rating scale. The relevant content must be used to create the rubric to assess the task or question. The descriptions must clearly indicate the minimum level of attainment for each category on the rating scale.

Analytical descriptive rubrics focus on elements of the product or performances. Descriptive sentences are formulated for each of the seven rating codes, with the best performance reflected with a score of 7 and the poorest with a score of 1. This is the most reliable and trustworthy assessment tool.

Task lists and **checklists** are examples of a holistic rubric and show the learners what needs to be done. They consist of short statements describing the expected performance in a particular task. The statements on the checklist can be ticked off when the learner has adequately achieved the criterion. Checklists and task lists are useful in peer or group assessment activities.

Learners must do a minimum of 5 activities/projects/worksheets/tests per term 1 to 4. The teacher compiles the activities/worksheets/tests and these should consist of activities that require the learner to:

- Identify the correct answer/picture/object – the question as well as the answer may consist of images/objects, e.g. Boardmaker or clip art images;
- Match column A to B and both columns may consist of pictures/objects;
- Fill in the missing words. The missing words may be available to the learners (on a separate sheet or printed on the worksheet) and they can copy the words, or write the words on the dotted lines provided by the teacher;

- Perform a skill other than writing, e.g. to colour, to cut and paste in specified groups, to find pictures in a magazine and cut and paste in book; or
- Provide answers.

The following should at least be included in the Teacher's Assessment or Planning and Assessment File:

- Programme of Assessment for the grade
- The tools (rubric, checklist, etc.) used for each assessment task
- A mark sheet/record sheet for each assessment task

The learners Evidence must at least include:

- Classwork book
- Worksheet file

Evidence of learner performance must be available for quality assurance. This may be in the form of a Portfolio of Evidence (POE) which will include the learners' classwork books and the Support Needs Analysis (SNA).

4.4. School Assessment Programme

The **Programme of Assessment** takes place continuously and should commence in the second week of each term. The programme of assessment should include a minimum of five (5) assessment goals per subject. The programme of assessment should be recorded in the Teacher's assessment file or planning file (which may serve a dual purpose).

The following should at least be included in the Teacher's Assessment or Planning and Assessment File:

- A contents page

- The assessment goals for each subject
- The tools used for each assessment task
- A mark sheet/record sheet and report for each assessment task
- Recording instrument(s) for each assessment task
- A mark sheet and report for each assessment task

The learners Portfolio of Evidence must at least include:

- A contents page
- The assessment tasks according to the assessment programme as indicated below
- The assessment tools or instruments for the task
- A record of the rating code (and comments) achieved for each task.

Eighty to hundred percent (80% - 100%) of formal assessment should consist of **practical tasks/activities/skills**. Each learner should do a variety of practical tasks and activities during each term as indicated in the learning programmes.

4.5. Assessment programme across the five years

Grade 4 – Practical assessment tasks

Task	Term 1		
	Week	Grade 4: First year	Grade 4: Second year
1	Week 2 & 3:	Identify a weed/plant in the garden. Point out the basic structure of animals on images.	Know how to prepare and dry the weed/plant in a thick book. Discuss the differences and similarities between animals on images.
2	Week 4 & 5	Cut and grow a plant cutting. Match animals to their shelters.	Record how many days it takes for a cutting to develop a new leave. Describe a (animal) habitat.
3	Week 6 & 7	Make a simple model of a (animal) shelter. Group pictures of food items in the correct position onto the food pyramid.	Describe two animal OR bird OR insect shelters. Construct a 3 dimensional food pyramid.
4	Week	Compile a list with the food items	Compare personal food intake to food

	8 & 9	eaten the previous day. Give a reason why waste items may be harmful to plants, animals and birds.	intake suggested by the food pyramid. Know the meaning of the three arrows in the recycling logo
<u>Task</u>	<u>Term 2</u>		
	Week	Grade 4: First year	Grade 4: Second year
1	Week 2 & 3:	Boil water safely to make a cup of coffee Demonstrate evaporation.	Boil water safely to make a cup of soup Demonstrate condensation.
2	Week 4 & 5	Cut and grow a plant cutting. Produce a mud brick.	Record how many days it takes for a cutting to develop a new leave. Produce handmade paper.
3	Week 6 & 7	Identify dangers in the classroom/home that may cause a fire Make ice to demonstrate how heat changes the properties of water.	Describe how to adapt dangerous objects in the classroom/home to make them safe. Make sorbet to demonstrate how heat changes the properties of water
4	Week 8 & 9	Test the strength of 3 different structures using weights Know how to make water safe to drink.	Test the strength of tubes by using weights Know how to safe water in the house and at school.
<u>Task</u>	<u>Term 3</u>		
	Week	Grade 4: First year	Grade 4: Second year
1	Week 2 & 3:	Describe the sequence of a food chain. Identify the different types of energy from images.	Describe how plants make their own food. Explain the different types of energy.
2	Week 4 & 5	Make a model to illustrate input and output energy. Make a musical instrument.	Explain the differences between input and output energy. Make a musical instrument and describe how the instrument is made.
3	Week 6 & 7	Record the sound of homemade musical instruments. Perform an experiment to show how the volume of a liquid influences sound.	Identify the media that sounds travel through. Perform an experiment to show how the volume of air influences sound.
4	Week 8 & 9	Know how to protect the self from the noise pollution. Group and recycle recyclables safely.	Make a poster to illustrate noise pollution. Group and recycle electronic recyclables.

Task	Term 4		
	Week	Grade 4: First year	Grade 4: Second year
1	Week 2 & 3::	Identify visible features on a globe. Produce 2 dimensional models of the earth.	Identify the different layers of the earth. Produce 3 dimensional models of the earth.
2	Week 4 & 5	Draw our solar system from an image. Perform an experiment to estimate the time.	Draw our solar system from the three dimensional model provided to them as an example of the solar system. Execute and experiment to make a solar panel.
3	Week 6 & 7	Draw a sundial. Identify the stages of the moon.	Make a sundial. Describe two stages of the moon.
4	Week 8 & 9	Execute a rocket experiment to show air movement. Know how to re-use glass bottles.	Execute a rocket experiment to show that volume influences air movement. Know how to re-use paper.

Grade 4 term 1 – 4: Theoretical assessment tasks

Evidence of one theoretical task of formal assessment between week 2 – 9 as in the annual teaching plan must be available for quality assurance.

Grade 5 – Practical assessment tasks

Term 1				
Task	Week	Grade 5 : First year	Grade 5 : Second year	Grade 5 : Third year
1	Week 2 & 3:	Group animals, birds and insects in two groups - without bones and with bones. Identify the skeleton parts of a fish skeleton.	Identify two animals and insects with a hard outer shell. Identify the skeleton parts of a bird skeleton.	Identify two animals with skeletons. Identify the skeleton parts of a human skeleton.
2	Week 4 & 5	Produce a model of a fish skeleton Make a two dimensional model illustrating the food chain depicting 3 living things.	Produce a model of a bird skeleton Make a three dimensional model illustrating the food chain depicting 3 living things.	Produce a model of a human skeleton Make a three dimensional model illustrating the food chain depicting 4 living things.
3	Week 6 & 7	Dissect a flower correctly. Perform an experiment to test food for starch.	Dissect a flower correctly and label the different parts of the flower. Perform an experiment to test food for fat content.	Dissect an insect and label the parts of the insect. Perform an experiment to test food for sugar.
4	Week 8 & 9	Place three digestive organs in the correct place in a model. Group and recycle recyclables correctly.	Place four digestive organs in the correct place in a model. Group and recycle recyclables correctly.	Place all the digestive organs in the correct place in a model. Group and recycle recyclables correctly.
Term 2				
Task	Week	Grade 5 : First year	Grade 5 : Second year	Grade 5 : Third year
1	Week 2 & 3:	Group items as metals or non-metals. Perform an experiment to show that metals rust.	List the properties of metals. Execute and experiment to show that the opposite poles of a bar magnet attract each other.	List the properties non-metals. Execute and experiment to show that metals rust and non-metals do not rust.

2	Week 4 & 5	Execute and experiment to show that metals conduct heat. List the equipment needed to perform an experiment to show how mixing and cooling produce processed materials.	Execute and experiment to show that metals are magnetic. List the equipment needed to perform an experiment to show how mixing and setting produce processed materials.	Record one magnetic pattern an experiment that shows metals are magnetic. List the equipment needed to perform an experiment to show how mixing and cooking produce processed materials.
3	Week 6 & 7	Perform an experiment to show how mixing and cooling produce processed materials. List the equipment needed to perform an experiment to test Plaster of Paris for water absorbency and strength.	Execute an experiment to show how mixing and setting produce processed materials. List the equipment needed to perform an experiment to test concrete for water absorbency and strength.	Perform an experiment to show how mixing and cooking produce processed materials. List the equipment needed to perform an experiment to test ceramics for water absorbency and strength.
4	Week 8 & 9	Test Plaster of Paris for water absorbency and strength. Perform the experiment to purify dirty water by using the sieving method.	Test concrete for water absorbency and strength. Perform the experiment to purify dirty water by using the settling method.	Test ceramics for water absorbency and strength. Purify dirty water by adding chemicals to the water.
<u>Task</u>		<u>Term 3</u>		
	Week	Grade 5 : First year	Grade 5 : Second year	Grade 5 : Third year
1	Week 2 & 3:	Plan an experiment to show that fuel needs heat and oxygen to burn. Demonstrate how to prevent fires.	Perform an experiment with two candles to show that fuel needs heat and oxygen to burn Demonstrate how to exit a building on fire.	Use a fire extinguisher correctly. Know the emergency number to call from a cell phone.
2	Week 4 & 5	Know how to put batteries in appliances. Build a battery using a lemon.	Draw an electrical circuit. Build an electrical circuit.	Wire an electrical plug Build an electrical circuit with a switch.
3	Week 6 & 7	Plan how to build a catapult	Plan how to build a “bird in the cage” experiment	Plan how to build a moving toy.

		Build a catapult and demonstrate how to use the catapult safely.	Perform an experiment to show how twisted elastic makes objects move.	Build a moving toy.
4	Week 8 & 9	Build a toy vehicle with a turning axle. Collect, group and recycle recyclables safely.	Build a toy vehicle with a fixed axle. Collect, group and recycle recyclables safely.	Build a toy vehicle with a fixed as well as turning axle. Collect, group and recycle recyclables safely.
<u>Task</u>	<u>Term 4</u>			
	Week	Grade 5 : First year	Grade 5 : Second year	Grade 5 : Third year
1	Week 2 & 3:	Locate and collect three different types of soil Make a sedimentary layer model.	Select one type of soil, and plant a seedling to determine the influence soil has on plant growth Make a sample of sedimentary rock from rocks, sand and water.	Provide reasons why different types of soil influence plant growth. Make sedimentary rock with rocks, sand and clay.
2	Week 4 & 5	Plan how to make a leave “fossil”. Make a leave “fossil”.	Plan how to make a seashell “fossil”. Make your own seashell “fossil”.	Plan how to make a sea animal “fossil”. Make a sea animal “fossil”.
3	Week 6 & 7	Plan how to make a wind-vane. Make a wind-vane.	Plan how to make a rain gauge. Make a rain gauge.	Plan how to make a model to deliver weather forecasts. Make a weather forecast model.
4	Week 8 & 9	Know how to establish the direction of the wind. Practise to collect, group and recycle recyclables at school.	Know how to read and record rainfall measured in a rain gauge. Practise to collect, group and recycle recyclables at school.	Explain the weather forecast chart for the previous day. Practise to collect, group and recycle recyclables at school.

Grade 5 term 1 – 4: Theoretical assessment tasks

Evidence of one theoretical task of formal assessment between week 2 – 9 as in the annual teaching plan must be available for quality assurance.

4.6. Recording and Reporting

Recording is a process in which the teacher documents the level of a learner's performance in a specific assessment task. It indicates learner progress towards the achievement of the knowledge and skill. Records of learner performance should provide evidence of the learner's progression. Records of learner performance should also be used to verify the progress made by teachers and learners in the teaching and learning process.

Reporting is a process of communicating learner performance to learners, parents, schools, and other stakeholders. Learner performance can be reported in a number of ways. These include report cards, parents' meetings, school visitation days, parent-teacher conferences, phone calls, letters, class or school newsletters, etc.

Good record keeping is essential in all assessment, particularly in continuous assessment. A record book or file must be kept up to date by each teacher. It should contain:

- learners' names;
- dates of assessment;
- name and description of the assessment activity;
- the results of assessment activities, according to Subject;
- comments for support purposes.

Teachers in all grades issue formal report cards quarterly indicating the competence level of the learner and as stated above also provide explanatory notes on what the learner has achieved per subject and what could be done by the parents at home to provide further stimulation.

The report cards may either be in narrative form that states the theory embedded in the skills and skill performed, or in a rating code as follows:

Rating code	Description of competence
7	Outstanding achievement
6	Meritorious achievement
5	Substantial achievement
4	Adequate achievement
3	Moderate achievement
2	Elementary achievement
1	Not achieved

The reports should always be a combination of both the narrative form and rating codes. All records must be accessible, easy to interpret, securely kept, confidential and helpful in the teaching and reporting process. The school assessment policy determines the details of how record books must be completed. Schools are required to provide quarterly feedback to parents, using a formal reporting tool, such as a report card. The schedule and the report card should indicate the overall level of performance of a learner.

NOTE:

Criterion referencing is best used to describe learner's performance in a skill. Teachers must make use of suitable analytical descriptive rubrics when assessing a learner's competence for a specific skill using practical demonstrations.

4.7. Moderation of Assessment

Moderation refers to the process that ensures that the assessment tasks are fair, valid and reliable. Moderation must be implemented at school as required. Comprehensive and appropriate moderation practices must be in place for the quality assurance of all subject assessments. The formal School-Based Assessment and the practical assessment tasks should be moderated internally and if necessary by the relevant subject specialists at the district.

4.7.1. Moderation serves five purposes:

- It must ascertain whether subject content and skills have been sufficiently covered.
- The moderator must ensure that the correct balance of cognitive demands are reflected in the assessments.
- The assessments and marking are of an acceptable standard and consistency.
- The moderator must make judgements about the comparability of learner performance across schools; whilst recognising that teachers teach in different ways.
- The subject specialist/moderator must identify areas in which a teacher may need development and support and must ensure that this support is provided.

4.7.2. Internal moderation

Assessment must be moderated according to the internal moderation policy of the School, Provincial and National Departments. Moderation is a continuous process. The moderator's involvement starts with the planning of assessment methods and instruments and follows with continuous collaboration with and support to the assessor. Internal moderation creates common understanding of topics and skills and maintains these across the learning programmes.

Moderation is therefore an on-going process and not a once-off end-of-year event.

4.8. General

This document should be read in conjunction with:

- White Paper 6 on Special Needs Education: Building an Inclusive Education and Training System (2001);
- *National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R – 12*; and (NPPPPR) (2011);
- *National Protocol for Assessment Grades R – 12. (NPA) (2011)*;
- *Guidelines for Responding to Diversity in the Classroom through the Curriculum and Assessment Policy Statements (2011)*;

- *Guidelines to Ensure Quality Education and Support in Special Schools and Special School Resource Centres* (2013);
- *Policy on Screening, Identification, Assessment and Support* (2014);
- *Guidelines for Full-service/Inclusive Schools* (2010);
- *Standard Operating Procedures for Assessment of Learners who Experience Barriers to Assessment* (2016).