
ZIMBABWE

**MINISTRY OF PRIMARY AND SECONDARY EDUCATION**

# JUNIOR
# SCIENCE AND TECHNOLOGY

## SYLLABUS (GRADE 3-7)

## (2015 - 2022)

**Curriculum Development and Technical Services,**
**P.O. Box MP 133, Mount Pleasant, Harare**


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# 1.0 PREAMBLE

## 1.1 Introduction

The Science and Technology learning area (S&T) is a five-year primary school course that provides learners with opportunities for cognitive and practical experiences that help them understand, interpret and offer practical and meaningful scientific solutions to their natural world. It is an integrated learning area which seeks to make learners aware of themselves, their relationship with the biophysical environment and prepare them for their future within a rapidly changing technological society. Science and Technology intends to develop initiative, creative, innovative, and inquisitive learners. The learning area fosters an appreciation of the design and the use of tools to solve real life problems. The syllabus will follow a spiral approach that will lead learners to demonstrate a positive relationship with science and technology. The learning phase will see learners being assessed through continuous assessment and summative examination.

## 1.2 Rationale

- Through Science and Technology learners become innovative and adaptable as they select, use relevant scientific facts and technologies, process information and create tangible functional products.
- Science and Technology enables learners to identify and solve problems through creative design thinking, planning and modeling. This is facilitated by working with different media, materials, scientific facts and tools. The learning area inculcates the notion of unhu/ubuntu/vumunhu in the learners as they process ideas.

## 1.3 Summary of Content

This syllabus is intended to provide a foundational course in science and technology which fosters the development of Intellectual and manipulative skills. It is also designed to introduce learners to fundamental concepts and technological skills in Mathematics, Science, Health, Technical Graphics, Art Textiles, Metal, Wood, Building and Food Technology.

## 1.4 Assumptions

It is assumed that learners have:

- innate desire to explore and experiment
- exposure to some scientific and technological tools and materials
- certain experiences in various scientific and technological practices some scientific and technological skills for indigenous knowledge systems
- ability to make decisions for themselves
- potential to manipulate objects practical work
- an ability to communicate and work with others to achieve a common goal

## 1.5 Cross-Cutting Themes

Science and Technology as a learning area will encompass Teamwork as learners interact and collaborate in the learning process

- Safety in using scientific equipment and apparatus as well as the design process
- Health issues
- Food security
- Technology
- Environmental issues
- Disaster risk management
- Enterprise
- Sexuality, HIV and AIDS
- Heritage

# 2.0 PRESENTATION OF SYLLABUS

The Junior Science and Technology Syllabus is a single document covering grades 3 to 7. It contains scope and sequence table for all junior grades. The syllabus also comprises a detailed competency matrices which guides the learning and teaching process.

# 3.0 AIMS

The syllabus aims to help learners to:

3.1 appreciate the role and impact of S&T as they apply to self, work and society

3.2 select and use a wide range of materials and components in the environment

3.3 develop the creative, technical and practical expertise to participate in a scientific and technological world

3.4 demonstrate innate talent that lead to originality and innovativeness

3.5 enhance scientific and technological designs, through the use of Information and CommunicationTechnology

3.6 manipulate materials and equipment to enhance creativity

3.7 develop critical evaluation skills in technical, aesthetic, economic, environmental, social and cultural contexts

3.8 explore opportunities that promote a sense of self-reliance, enterprising and community development

# 4.0 OBJECTIVES

By the end of the learning area learners should be able to:

4.1 identify tools and materials used in science and technology

4.2 design and modify technological devices using local and other materials

4.3 select, use and store appropriately scientific and technological tools when designing and constructing artefacts

4.4 apply scientific and technological concepts and skills for environmental sustainability

4.5 investigate how people, environment and economic issues influence and are influenced by Science and Technology

4.6 explore scientific and technological ideas to develop innovations through ICT

4.7 apply indigenous knowledge systems and understand Scientific and Technological concepts.

4.8 relate moral and ethical approaches to the use of scientific principles and technology (Unhu/Ubuntu/Vumunhu)

4.9 debate consequences of the outcomes of scientific and technological processes

4.10 collect and record relevant data and information through scientific research

4.11 demonstrate enterprise skills that are relevant to the market,recognising constraints of time, cost and accessibility of resources

4.12 demonstrate an appreciation of the role of designers, craftsmen, scientists and technologists in industry and society

4.13 explain the scientific relationship between plants, animals and their environment

# 5.0 METHODOLOGY AND TIME ALLOCATION

## 5.1 Methodology

This syllabus is based upon a learner centred participatory approach with emphasis on hands-on-, multi-sensory, problem identification and problem solving. These attributes encourage, sharing curiosity and promote logical and practical learning. Learner centred approach encourages learner to learner exchange of scientific ideas, experiences, knowledge, skills and attitudes. Innovativeness and inventiveness are strongly recommended in the teaching and learning of Science and Technology. The following are the suggested methods:

- Educational Tours
- Demonstrations
- Experimentation
- Science and technical exhibitions
- Simulations

- Resource persons
- Case-study
- Project work/research
- Games (quiz, drama, storytelling)
- Gallery walk
- Debates

**NB. The above suggested methods should be enhanced by the application of orthodidactic principles and multi-sensory approaches to teaching. These include tactility, concreteness, individualisation, self-activity, totality and wholeness. Teachers are encouraged to address the learners' residual senses.**

## 5.2 TIME ALLOCATION

Five 30 minute periods per week, of 2 double lessons and 1 single lesson , should be allocated for adequate coverage of concepts.

# 6.0 TOPICS

**6.1 Health and Safety**

**6.2 Materials and Structures**

**6.3 Energy and Fuels**

**5.4 Electricity and Electronics**

**6.5 Forces and Magnets**

**6.6 Design and Technology**

**6.7 Water**

**6.8 Weather and Climate**

**6.9 Soil, plants and animals**

**6.10 Landforms and Maps**

**6.11 Sustainable Resource Management**

# 7.0 SCOPE AND SEQUENCE

## 7.1 HEALTH AND SAFETY

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Human Body** | • personal hygiene | • Dental care | • Digestive system | • Human reproductive system | • The respiratory system<br>• The circulatory system. |
| **Nutrition** | • sources of food<br>• importance of food to the body | • Balanced Diet | • Improper eating habits/eating disorders<br>• Deficiency diseases | • Prevention and management of deficiency diseases | • Methods of food preservation<br>• Benefits of indigenous foods and herbs.<br>• Effects of genetically modified foods - Genetically Modified Organisms (GMO) |
| **Diseases and prevention** | • disease causing organisms<br>• diarrhoea<br>• the Oral Rehydration Solution (ORS) | • Parasitic diseases<br>• Prevention and control of parasitic diseases | • Harmful gut worms<br>• Sexually transmitted infections (STIs)<br>• Prevention of STIs | • Child killer diseases<br>• Natural immune system<br>• Acquired Immune Deficiency Syndrome (HIV/AIDS) destroys the immune system<br>• Prevention and living positively with HIV/AIDS | • Epidemic diseases<br>• Prevention and control of epidemic diseases<br>• Prevention and management of chronic diseases (cancer, hypertension, diabetes) |

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Safety** | • Accidents<br>• Safety in the laboratory | • Safety at:<br>- Home<br>- School<br>- Roads<br>• First Aid on wounds:- cuts and bruises<br>• Protective clothing | • First Aid on burns<br>- Fire burns<br>- Chemical burns | • Components of the First Aid kit<br>• First Aid on unconscious persons | • Rescuing a drowning person<br>• First Aid on drowning person |

## 7.2 MATERIALS AND STRUCTURES

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Characteristics of materials** | • Natural materials<br>• Man-made materials | • Properties of materials | • Uses of materials | • Behaviour of materials under certain conditions<br>• Effects of certain reactions on materials | |
| **Elements, Mixtures and Compounds** | • Pure and impure materials<br>• Purifying water | • Mixtures | • States of matter | • Common elements in nature<br>• Structure of atoms<br>• Chemical compounds | • Metals and non-metals<br>• Characteristics of metals and non-metals |
| **Tools** | • Classification of tools according to their uses<br>• Tool design and models | • Tool design, model making and modification | • Uses of tools<br>• Tools as machines | • Machine design and model<br>• Functions of machines | • Machine design, repair and modification<br>• Use of ICT to design machines |
| **Structures** | • Structures at home | • Natural structures | • Man-made structures | • Functions of structures | • Models of mechanical structures |

## 7.3 ENERGY AND FUELS

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Energy** | • Energy and energy use | • Forms of energy<br>• Potential and kinetic energy | • Solar energy<br>• Light energy<br>• Models of solar gadgets<br>• Safety precautions when using electricity | • Heat and Electrical energy<br>• Electrical gadgets | • Sound energy<br>• Electromagnetic radiation<br>• Energy conversion |
| **Fuels** | • Forms of fuel | • Conditions necessary for fuels to burn (combustion)<br>• Fuel hazards<br>• Safety precautions | • Energy production from fuel<br>• Uses of fuel | • Sustainable use of fuels | • Impacts of fuels on the environment<br>• Methods of putting out fire<br>• Prevention of fire |

## 7.4 ELECTRICITY AND ELECTRONICS

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Electricity and Electronics** | • Electronic devices<br>• TV<br>• Radio<br>• Cellphone<br>• Alarms<br>• Toys<br>• Sensor lights<br>• Computer | • Sources of electricity<br>• Electrical conductors and insulators<br>• Safety precautions | • Flow of electric current<br>• Electrical circuits<br>• Circuits for household electricity | - a.c and d.c<br>- electronic devices | • Components of electronic devices<br>- Transistors<br>- Diodes<br>- Inductors<br>- Resistors<br>• Designing electronic devices<br>• Models of electronic devices |

## 7.5 FORCES AND MAGNETS

| GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|
| • **Magnets** | • Magnetic materials<br>• Non magnetic materials | • Magnetic field<br>• Magnetic force<br>• Uses of magnets | • Frictional force<br>• Smooth and rough surfaces<br>• Fluids and friction<br>• Useful and destructive effects of friction | • Gravity<br>• Falling objects<br>• Gravitational force<br>• Force multipliers<br>• Pulleys<br>• Levers<br>• Gears |

## 7.6 DESIGN AND TECHNOLOGY

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Design and Technology** | • Principles and elements of design<br>- Models<br>- Decoration | • Principles and elements of design<br>• food preparation | • Principles and elements of design<br>-Structures | • Principles and elements of design<br>• Models of mechanical systems | • Principles and elements of design<br>• Functional tools |

## 7.7 WATER

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Properties of water** | • Water flows<br>• Water infiltration | • States of water | • Water evaporation | • Water as a universal solvent | • Water as a chemical compound |
| **Sources of water** | • Natural sources of water<br>• Man-made sources of water | • Protected water sources<br>• Unprotected water sources | • Ground water<br>• Water extraction model | • Water cycle<br>• Impact of human activities on the water cycle | • Methods of purifying water<br>• Water purification models |
| **Water and the Environment** | Floods | • Water as mode of disease transmission | • Water pollution | • Water as an ecosystem | • The economic value of water<br>• Fish farming<br>• Sporting<br>• Tourism |

## 7.8 WEATHER AND CLIMATE

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Weather and climate** | • Weather elements | • Weather forecast (indigenous and modern technologies)<br>• Weather records<br>• Uses of weather records | • Weather instruments<br>• Measuring and recording weather conditions | • Weather patterns | • Factors that influence climate |
| **Seasons** | • Seasons in Zimbabwe | • Seasons in Zimbabwe | • Influence of seasons on human activities | • The earth and space | • The impact of technology on seasonal activities |
| **Weather and climate hazards** | • Weather and climate hazards | • Weather and climate hazards<br>• Mitigation and adaptation of weather and climate hazards | • Global warming and climate change | • Mitigation of global warming and climate change | • Effects of technology on weather and climate |

## 7.9 SOIL, PLANTS AND ANIMALS

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Soil** | • Soil formation<br>• Types of soil<br>• Soil properties<br>• Pottery | • Soil as an ecosystem | • Soil as an ecosystem<br>• Uses of soil<br>• Pottery | • Soil erosion<br>• Soil conservation | • Weathering<br>• Soil profile |
| **Plants** | • Plant parts and their functions | • Nutritional value of plants | • Plants as producers<br>• Plant reproduction<br>- flowering and non-flowering plants | • Germination<br>- bean seed<br>- maize seed<br>• Conditions necessary for germination | • Photosynthesis<br>• Uses of plants<br>- medicinal<br>- ecological<br>- socio-economic<br>• aesthetic<br>Composting |
| **Animals** | • Animal Kingdom<br>• Characteristics of invertebrates<br>• Useful and harmful insects<br>. | Animal kingdom<br>• Characteristics of vertebrates<br>-fish<br>-Amphibians<br>-Reptiles<br>-Birds<br>-Mammals | • Animal reproduction | • Animal nutrition | • Uses of animals<br>• Biogas production<br>- Organic manure<br>- Decorative purposes |

## 7.10 LANDFORMS AND MAPS

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Land forms and Maps** | • Land forms in the local environment | • Natural and man-made landforms | • Uses of landforms | • Features of a map<br>• Representation of landforms on maps | • Map reading<br>• Grid reference system<br>• Map models |

## 7.11 SUSTAINABLE RESOURCE MANAGEMENT

| TOPIC | GRADE 3 | GRADE 4 | GRADE 5 | GRADE 6 | GRADE 7 |
|---|---|---|---|---|---|
| **Sustainable Resource Management** | • Our resources<br>• Natural and man-made resources<br>• Sources of waste | • Renewable and non-renewable resources<br>• Distribution of natural resources in Zimbabwe<br>• Uses of resources<br>• Types of waste | • Sustainable use of resources<br>• Safety in handling waste | • Extraction of mineral resources<br>• Waste disposal | • Value of natural resources<br>• Value addition and beneficiation<br>• Uses of waste<br>• Impact of waste on the environment |

# GRADE 3

## 8.0 COMPETENCY MATRIX

## 8.1 TOPIC 1: HEALTH AND SAFETY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Human Body** | • list body parts<br>• describe how to take care of the body parts<br>• state toiletries and cosmetics used to take care of the body<br>• design cleaning equipment<br>• make cleaning equipment<br>• manipulate toiletries, cosmetics and equipment that are used in personal hygiene | • Personal hygiene<br>- Teeth<br>- Hair<br>- Hands<br>- Ears and eyes<br>- Armpits and pubic area<br>-Toiletries and cosmetics<br>-Cleaning equipment | • Naming body parts<br>• Demonstrating how to take care of body parts<br>• Demonstrating how to blow the nose whilst covering the mouth using a handkerchief<br>• Listing toiletries and cosmetics used to take care of the body<br>• Collecting pictures of toiletries and cosmetics used in taking care of the body<br>• Modeling cleaning equipment of own choice from readily available materials<br>• Drawing of cleaning equipment<br>• Matching of cleaning equipment to the body part they clean | • Print media<br>• Recommended textbooks<br>• Cloths<br>• Cleaning equipment such as soap, comb, towel, tooth paste, toothbrush<br>• Resource persons |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT<br>(ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | • Singing and reciting poems<br>• Manipulating toiletries, cosmetics and cleaning equipment | |
| **Nutrition** | • name sources of food<br>• classify food according to their sources<br>• state the importance of food to the body | • Sources of food<br>- Plants<br>- Animals<br>• Importance of food to the body<br>- Energy giving<br>- Body – building<br>- Protective foods | • Stating sources of food<br>• Grouping of food according to their sources<br>• Matching of food to their sources<br>• Modeling of plants and animals<br>• Collecting pictures of food sources<br>• Discussing the importance of food to the human body<br>• Collecting pictures of food<br>• Drawing food of their choice<br>• Naming food according to their importance | • Print media<br>• Electronic media<br>• Cereals<br>• Fruits,<br>• Meat,<br>• Potatoes<br>• Resource person |
| **Diseases and prevention** | • identify causes of sickness<br>• list organisms that cause sickness<br>• discuss diseases caused by organisms<br>• demonstrate how germs can be prevented from spreading | • Disease causing organisms | • Describing germs and how they cause diseases<br>• Discussing the different types of germs e.g. virus, bacteria, protozoa and fungi<br>• Identifying diseases caused by organisms | • Print media<br>• Electronic media<br>• Recommended textbooks<br>•<br>- Salt<br>- Sugar |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | • discuss the causes of diarrhoea<br>• suggest ways of preventing diarrhoea<br>• describe preparation of ORS treatment | • Diarrhoea<br>• The Oral Rehydration Solution (ORS) | organisms<br>• Stating the causes of diarrhea<br>• Describing how to prevent diarrhea<br>• Practising proper hygiene<br>• Demonstrating proper technique of washing hands<br>• Preparing ORS | - Bins<br>- Detergents |
| **Safety** | • state accidents that occur in the laboratory<br>• identify objects that cause accidents in the laboratory<br>• describe substances that cause accidents in the laboratory<br>• list laboratory safety rules | • Accidents<br>• Safety in the laboratory | • Describing accidents that happen in the laboratory<br>• Discussing objects and substances that cause accidents in the laboratory<br>• Viewing videos on preventing laboratory accidents<br>• Suggesting ways of preventing accidents in the laboratory | • Print media<br>• Electronic media<br>• Recommended textbooks<br>• Laboratory |

## 8.2 TOPIC 2: MATERIALS AND STRUCTURES

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Characteristics of Materials** | • distinguish between natural and man-made materials | • Natural materials<br>• Man-made materials | • Collecting materials<br>• Classifying materials into natural and man-made<br>• Describing natural and man-made materials | • Natural materials<br>• Man-made materials |
| **Elements, Mixtures and Compounds** | • differentiate pure and impure materials<br>• demonstrate how to purify water | • Pure and impure materials<br>• Purifying water | • Describing pure and impure materials<br>• Purifying water by filtration and distillation | • Water<br>• Glass tubes<br>• Rubber Tubing<br>• Solvents<br>• Containers<br>• Heat source<br>• Filter paper<br>• Samples of pure materials |
| **Tools** | • classify tools from home<br>• design tools of own choice<br>• construct an artefact from sketches of tools | • Classification of tools<br>• Tool design and models | • Collecting tools<br>• Naming tools<br>• Grouping tools<br>• Explaining criteria used to group<br>• Sketching tools of own choice<br>• Selecting suitable material to make the tool<br>• Making artefacts from the sketch | • Garden tools<br>• Kitchen tools<br>• Building tools<br>**NB. Teacher should caution children in handling tools**<br>• Bond paper<br>• Pencils<br>• Print media<br>• Various materials |
| **Structures** | • Identify structures at home | • Structures at home | • Naming and drawing structures | |

## 8.3 TOPIC 3: ENERGY AND FUELS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Energy** | • explain the meaning of energy<br>• identify uses of energy | • Energy and energy use | • Discussing the meaning of energy<br>• Demonstrating different uses of energy | • Print media<br>• Electronic media<br>• Recommended textbooks |
| **Fuel** | • identify forms of fuel<br>• demonstrate characteristics of fuels<br>• classify fuels as renewable and non-renewable | • Forms of fuel<br>- Solid<br>- Liquid<br>- Gas<br>• Renewable and non-renewable fuels | • Collecting fuels<br>• Demonstrating that fuels burn<br>• Grouping fuels according to their similarities or differences<br>• Illustrating that fuels can be solid, liquid or gas<br>• Categorizing fuels as renewable and non-renewable | • Print media<br>• Electronic media<br>• Realia such as samples of fuel<br>• Recommended textbooks |

## 8.4 TOPIC 4: ELECTRICITY AND ELECTRONICS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Electronics** | • Identify electronic devices<br>• Use the devices correctly<br>• recognize sources of electricity in Zimbabwe | • Electronic devices<br>-TV<br>-Radio<br>-Cellphone<br>-Alarms<br>-Toys<br>-Lights<br>-Computer<br>• Sources of electricity | • Naming electronic devices<br>• Using the electronic devices<br>• Observing video clips on electronic devices<br>• Identifying sources of electricity<br>• Locating sources of electricity in Zimbabwe from the map | • Electronic devices<br>• Print media<br>• Recommended textbooks<br>• Pictures of devices<br>• Map of Zimbabwe<br>• Recommended textbooks |
| | • identify dangers of electricity<br>• Suggest safety precautions when using electricity | • Safety precautions<br>- Dangers<br>- Precautions | • Observing dangers of electricity using multi-media<br>• Discussing dangers of electricity<br>• Identifying danger warning signs | • Print media<br>• Resource person<br>• Danger warning signs |
| | • identify conductors and insulators | • Electrical conductors and insulators | • Collecting materials<br>• Carrying out an experiment to identify conductors and insulators | • Aluminum<br>• Copper<br>• Steel<br>• Plastic<br>• Wood |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | • Naming conductors and insulators | • Wool<br>• Glass<br>• Batteries<br>• Bulbs<br>• Circuit board<br>• Electrical wires<br>• Electronic media |
| **Forces** | • identify devices with magnets<br>• Illustrate magnetic force<br>• explain action of magnets as force at a distance | • Magnets<br>• Magnetic force | • Identifying devices with magnets<br>• Illustrating magnetic force | • Magnets<br>• Broken down devices with magnets |

## 8.5 TOPIC 5 : DESIGN AND TECHNOLOGY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Elements of Design** | • appreciate elements of design<br>• manipulate materials such as clay or papier marché to make artefacts | • Elements of design<br>- Form<br>- Balance<br>- Colour<br>- Lines<br>- Texture<br>• Models from materials such as paper Marché and clay<br>• Decorations | • Describing elements of design<br>• Demonstrating elements of design<br>• Designing objects or artefacts using clay bodies<br>• Making models from materials such as clay bodies and paper Marché<br>• Decorating objects produced | • Paper Marché<br>• Clay<br>• Water<br>• Flour/glue<br>• Paint<br>• Beads<br>• Bottle tops<br>• Seeds<br>• Petals<br>• Sticks<br>• Electronic media |

## 8.6 TOPIC 6: WATER

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Properties of Water** | • identify properties of water<br>• predict where water will flow to in the local environment<br>• demonstrate water flowing from a higher to a lower place<br>• describe water infiltration<br>• observe water infiltration<br>• design a model of a water filter | • Properties of water<br>• Water flows<br>• Water infiltration | • Observing water flowing from a higher to a lower place<br>• Describing how water flows<br>• Discussing water infiltration<br>• Demonstrating water infiltration<br>• Modeling of a water filter | • Local environment<br>• Soil and water<br>• Containers<br>• Print media<br>• Recommended textbooks |
| **Sources of Water** | • list natural sources of water<br>• describe natural water sources<br>• identify man-made sources of water<br>• compare man-made to natural sources of water | • Man-made sources of water | • Naming natural sources of water<br>• Discussing natural water sources<br>• Collecting pictures of natural water sources<br>• Drawing natural sources of water | • Print media<br>• Recommended textbooks<br>• Bottles<br>• Wire<br>• Strings<br>• Container<br>• Natural sources of water |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | • design models of man-made sources of water | | • Conducting educational tours<br>• Listing man-made sources of water<br>• Describing man-made water sources<br>• Drawing man-made water sources<br>• Comparing man-made to natural sources of water<br>• Modeling man-made water sources | • Man-made source of water |
| **Water and the Environment** | • identify water hazards caused by floods<br>• Discuss effects of floods<br>• discuss safety precautions<br>• demonstrate safety precautions | • Floods<br>• Accidents caused by floods<br>• drowning<br>- Destruction of homes<br>- Destruction of crops and animals<br>- Safety precautions | • Watching a video on floods<br>• Listing water hazards<br>• Discussing dangers of water<br>• Suggesting safety precautions on water hazards<br>• Dramatizing hazardous activities such as crossing a flooded river | • Print media<br>• Recommended textbooks<br>• Pot<br>• Fire<br>• Water<br>• Electronic media |

## 8.7 TOPIC 7: WEATHER AND CLIMATE

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Weather Elements** | • identify weather elements | • Weather elements<br>- Temperature<br>- Sunshine<br>- Wind<br>- Rainfall<br>- Cloud cover | • Demonstrating the effects of some weather elements through role-play.<br>• Naming weather elements<br>• Discussing weather elements | • Print media<br>• Local physical environment<br>• Recommended textbook<br>• Electronic media |
| **Weather and Climate Hazards** | • discuss the effects of weather and climate hazards | • Weather and climate hazards<br>- Floods<br>- Fires<br>- Cyclone<br>- Heat wave<br>- Drought | • Watching a video on some weather and climate hazards<br>• Identifying the effects of weather and climate hazards from the video<br>• Naming weather and climate hazards | |

## 8.8 TOPIC 8: SOIL, PLANTS AND ANIMALS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Soil** | • describe soil formation<br>• identify soil types found in the local environment<br>• distinguish soil types<br>• explain soil properties<br>• demonstrate how to make a clay body<br>• create models from clay body | • Soil formation<br>• Types of soil<br>- Sand<br>- Clay<br>- Loam<br>• Soil properties<br>- Drainage<br>- Aeration<br>- Texture<br>colour<br>• pottery<br>-preparing clay bodies<br>-modeling | • Identifying materials found in the soil<br>• Demonstrating breaking down of rocks to form soil particles<br>• Discussing decay of plants and animals<br>• Collecting soil types<br>• Comparing soil types<br>• Naming soil types<br>• soil types<br>• feeling different samples of soils<br>• describing soil properties<br>• investigating what happens to water when poured into different types of soil<br>• mixing soil and water to make a clay body | • Hand lens<br>• Rocks/stones<br>• Soil samples<br>• Tray<br>• Soil<br>• Transparent bottles<br>• Recommended textbooks<br>• Print media<br>• containers<br>• water |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | • using clay body to create models of objects | |
| **Plants** | • identify plant parts<br>• relate plant parts to their functions | • Plant parts<br>- Leaves<br>- Stems<br>- Roots<br>- Flowers<br>- Fruits<br>- leaves<br>- stems<br>• Functions of plant parts | • Conducting an Educational tour to observe plant parts<br>• Discussing the functions of plant parts<br>• Drawing the plant structure showing the parts | • Local environment<br>• Trees<br>• Grasses<br>• Resource person<br>• Recommended textbooks |
| **Animals** | • classify animals<br>• outline characteristics of invertebrates<br>• state examples of invertebrates<br>• identify useful and harmful insects | • Animal kingdom – invertebrates<br>• Characteristics of Invertebrates<br>• Useful and harmful insects<br>• Bees- produce nectar<br>• Pollination<br>• Dragon fly-determine river health<br>• House fly- diarrhoea<br>• Mosquito-Malaria | • Naming animals<br>• Grouping animals according to their characteristics<br>• Listing characteristics of invertebrates<br>• Listing examples of invertebrate animals<br>• Naming useful and harmful insects<br>• Discussing useful and harmful insects | • Print media<br>• Recommended textbooks<br>• Electronic media<br>• Insects<br>• Magnifying lens<br>• Museum |

## 8.9 TOPIC 9: LANDFORMS AND MAPS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Landforms and Maps** | • identify landforms<br>• demonstrate models of landforms | • Landforms in the local environment | • Touring the local environment<br>• Listing types of landforms from the local environment<br>• Sketching landforms seen<br>• Making a model of landforms. | • Electronic media<br>• Print media<br>• Recommended textbooks<br>• Clay<br>• Papier marche<br>• Stones<br>• water |

## 8.10 TOPIC 10: SUSTAINABLE RESOURCE MANAGEMENT

| | | | | |
|---|---|---|---|---|
| **Sustainable Resource Management** | • identify resources<br>• classify resources | • Natural Resources:<br>- Wild life<br>- Forest<br>- River<br>- Land<br>- Minerals<br>• Man-made resources<br>- Dams, Roads, rubber and Plastic | • Naming resources<br>• Identifying local resources<br>• Categorising resources into man-made and natural | • Print media<br>• School yard<br>• Recommended textbooks<br>• Nature Reserves |
| | • state sources of waste- | Sources of waste<br>- Electronic gadgets<br>- Household<br>- Industrial<br>- Plant and animal waste | • listing the sources of waste<br>• Identifying examples of waste | • Local Environment |

# GRADE 4

## 8.1 TOPIC 1: HEALTH AND SAFETY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Human Body** | • identify different types of teeth and their functions.<br>• describe causes and prevention of tooth decay | • Types of teeth<br>• Functions of teeth<br>• Tooth Decay and prevention | • Observing different types of teeth<br>• Drawing the different types of teeth<br>• Naming different types of teeth<br>• Discussing teeth function<br>• Stating signs of tooth decay<br>• Demonstrating tooth decay<br>• Suggesting ways of preventing tooth decay | • Resource person (local health officer)<br>• Print Media<br>• Electronic media<br>• Model of Human Teeth.<br>• Recommended textbooks |
| **Diet** | • identify food nutrients<br>• describe food nutrients and their functions in the body<br>• explain balanced diet<br>• list diseases caused by | • Balanced diet<br>- Carbohydrates<br>- Proteins<br>- Fats<br>- Mineral salts<br>- Vitamins | • Listing nutrients found in food<br>• Collecting pictures of food and packages<br>• Classifying food according to the | • Print media<br>• Recommended textbooks<br>• Food items<br>• Electronic media<br>• Resource person |

| KEY CONCEPTS | OBJECTIVES Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | lack of certain nutrients | - Fibre<br>- Water<br>• Deficiency diseases<br>- Kwashiorkor<br>- Goitre<br>- Scurvy | nutrients they possess<br>• Demonstrating a balanced diet<br>• Discussing deficiency diseases and their symptoms<br>• identifying people suffering from food deficiency diseases from pictures | |
| **Diseases and prevention** | • identify two parasitic diseases<br>• discuss the signs and symptoms of parasitic diseases<br>• state breeding places for parasites<br>• discuss preventive measures | • Parasitic diseases<br>- Malaria<br>- Bilharzia<br>• Prevention and control of parasitic diseases | • Discussing prevalent parasitic diseases in Zimbabwe<br>• Locating major regions affected by malaria and bilharzia in Zimbabwe<br>• Stating conditions under which parasites breed<br>• Demonstrating ways of preventing and controlling the spread of the parasitic diseases | • Recommended textbooks<br>• Print media<br>• Electronic media<br>• Local environment<br>• Resource person |
| **Safety at school and in the Community** | • identify possible accidents that can occur at home and at | • Safety at:<br>- Home<br>- School | • Listing possible accidents that can occur at home and at school | • Fire extinguishers<br>• Protective clothing/apparatus<br>• First Aid Kit |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | school<br>• discuss safety measures to be implemented at home or school<br>• identify danger warning signs at school<br>• administer first aid on wounds<br>• use appropriate protective clothing | • First Aid on wounds:- cuts and bruises<br>• Protective clothing | • Discussing safety measures to be implemented at home and at school.<br>• Dramatising safety drills<br>• Designing danger warning signs<br>• Simulating how to administer first aid on wounds | • Print media<br>• Electronic media<br>• Road signs<br>• Resource person(s) |

## 8.2 TOPIC 2: MATERIALS AND STRUCTURES

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Characteristics of Materials** | • describe properties of materials | • Properties of materials<br>- Hardness<br>- Softness<br>- Elasticity<br>- Rigidity<br>- Fragile<br>- Brittle | • Observing various materials<br>• Discussing properties of different materials<br>• Manipulating materials to establish their properties | • Samples of materials |
| **Elements, Mixtures and Compounds** | • explain how to separate different mixtures<br>• demonstrate separation of mixtures | • Mixtures such as:<br>- Grain mixture<br>- Solution (sugar and salt) | • Making mixtures<br>• Demonstrating separation of mixtures | • Grains<br>• Solvents<br>• Solutes<br>• Sand<br>• water |
| **Tools** | • design tools of own choice<br>• construct an artefact from sketches<br>• modify tools to increase efficiency | • Tool design, model making and modification | • Sketching selected tools<br>• Selecting suitable material to make the tool<br>• Making artefacts from the sketch<br>• Manipulating selected tools to increase efficiency | • Samples of tools<br>• Charts<br>• Pencils<br>• Print media<br>• Various materials |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Structures** | • identify natural structures in the environment<br>• construct models of structures<br>• relate structures and their functions<br>• appreciate the aesthetic value of structures | • Natural structures such as:<br>- Caves<br>- Mountains<br>- rivers<br><br>• Aesthetic values of structures such as: natural pillars, rock balance, Matopo, Epworth | • Discussing natural structures<br>• Drawing and labeling the structures<br>• Making models of structures<br>• Describing functions of various structures<br>• Conducting educational tour<br>• Taking pictures of structures<br>• Taking models for science exhibition | • Print media<br>• Objects in the environment<br>• Recommended textbooks<br>• Electronic media |

## 8.3 TOPIC 3: ENERGY AND FUELS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Energy** | • identify forms of energy<br>• describe forms of energy<br>• demonstrate kinetic and potential energy in action | • Forms of energy<br>- Heat<br>- Light<br>- Sound<br>- Kinetic<br>- Potential | • Discussing uses of energy<br>• Describing forms of energy<br>• Illustrating kinetic and potential energy such as ball kicking and apple falling. | • Batteries, heaters, solar cooker<br>• Solar panel<br>• Print media<br>• Electronic media |
| **Fuel** | • discuss conditions necessary for fuels to burn(combustion)<br>• identify fuel hazards<br>• suggest safety precautions | • Oxygen<br>• Fuel hazards<br>- Safety precautions | • Experimenting to show the condition necessary for fuels to burn<br>• Discussing fuel hazards<br>• Brainstorming on safety precautions | • Print media<br>• Wood<br>• Candle<br>• Beaker<br>• Electronic media<br>• Recommended textbooks |

## 8.4 TOPIC 4: ELECTRICITY AND ELECTRONICS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Electricity** | • recognise sources of electricity in Zimbabwe<br>• identify dangers of electricity<br>• suggest safety precautions when using electricity<br>• identify conductors and insulators | • Sources of electricity<br>• Safety precautions<br>-dangers<br>-precautions<br>• Electric conductors and insulators | • Identifying sources of electricity<br>• Locating sources of electricity in Zimbabwe from the map<br>• Discussing dangers of electricity<br>• Identifying danger warning signs<br>• Collecting materials<br>• Carrying out an experiment to identify conductors and insulators<br>• Naming conductors and insulators | • Map of Zimbabwe<br>• Recommended text books<br>• Print media<br>• Resource person<br>• Danger warning signs<br>• Aluminium<br>• Copper<br>• Iron<br>• Steel<br>• Plastic<br>• Wood<br>• Wool<br>• Glass<br>• Electric circuit<br>• Batteries<br>• Bulbs<br>• Circuit board<br>• Electrical wires<br>• Electric media |

## 8.5 TOPIC 5 : DESIGN AND TECHNOLOGY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Elements of Design** | • appreciate elements of design in food preparation<br>• design an indigenous dish from local food sources<br>• describe how to prepare an indigenous dish | • Elements of design in food preparation<br>- Colour<br>- Texture<br>- Measurement<br>- Balance<br>- Proportion | • Describing elements of design in food preparation<br>• Demonstrating elements of design<br>• Designing a recipe for a chosen indigenous dish<br>• Preparing the chosen dish<br>• Garnishing the chosen dish<br>• Serving the dish | • Indigenous food items<br>• Kitchen utensils<br>• Ingredients<br>• Stove<br>• Print media<br>• Resource person<br>• Recipe books |

## 8.6 TOPIC 6: WATER

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Properties of water** | • name the three states of water<br>• demonstrate the changes water undergoes when heated and cooled | • States of water<br>- Liquid<br>- Solid<br>- Gas | Carrying out experiments to show the changes water undergoes when heated and cooled<br>• Listing the three states of water<br>• Discussing changes involved when water changes states | • Water<br>• Ice<br>• Refrigerator<br>• Beaker<br>• Print media |
| **Sources of water** | • identify protected water sources<br>• make models of protected water sources | • Protected water sources<br>- Springs<br>- Boreholes<br>- Covered deep well<br>- Tap | • Viewing videos on water sources<br>• Listing water sources from the video<br>• Categorizing water sources<br>• Discussing reasons for protecting water sources<br>• Describing how water sources can be protected<br>• Modeling protected water sources | • Videos on protected and unprotected water sources<br>• Pictures on protected and unprotected water sources |
| | • identify unprotected water sources<br>• classify water sources as protected or unprotected | • Unprotected water sources<br>-dam<br>-rivers<br>–shallow wells<br>-ponds | • Naming unprotected water sources in their immediate or other environments<br>• Discussing the deficiencies on cited unprotected water sources | |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | • suggest methods used to harvest water from rain in Zimbabwe | • Harvesting water from Rain | • Suggesting ways of improving the unprotected water sources<br>• Making posters on protected and unprotected water sources<br>• Discussing water harvesting methods | |
| **Water and the Environment** | • list water borne diseases<br>• explain how water transmits diseases | • Water as a mode of transmission of diseases<br>• Waterborne diseases:---<br>Cholera,<br>-Typhoid-<br>-Bilharzia<br>• Precautions | • Listing water hazards<br>• Naming water borne diseases<br>• Discussing how water transmits diseases suggesting precautions against water borne diseases | • Print media<br>• Recommended textbooks<br>• Health officer |

## 8.7 TOPIC 7: WEATHER AND CLIMATE

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Weather and Climate** | • predict weather changes | • Weather forecast<br>- Modern technology<br>- Indigenous knowledge | • Watching weather reports from videos and DVDs<br>• Listening to weather report on radio | • Electronic Media |
| | • examine weather forecast elements | • Weather forecast elements | • Discussing indigenous ways of forecasting weather<br>• Identifying weather forecast elements<br>• Relate weather instruments to weather forecasting elements | • Resource person |
| | • interpret weather recordings on graphs to illustrate variations from time to time<br>• calculate average rainfall and temperature<br>• justify the importance of keeping weather records | • Weather records | • Discussing information on rainfall distribution<br>• Calculating daily, weekly and monthly rainfall and drawing average rainfall graphs<br>• Calculating average weekly temperatures<br>• Plotting average temperatures on a graph<br>• Comparing average rainfall and temperature recordings | • Thermometer<br>• Rain gauge<br>• Graph paper<br>• Print media<br>• Recommended textbooks |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | • Discussing the importance of keeping weather records. | |
| **Seasons** | • name the four seasons in Zimbabwe<br>• describe the characteristics of each of the four seasons | • Seasons in Zimbabwe:- Summer, Autumn, Winter and Spring<br>• Characteristics of the four seasons | • Drawing a flow diagram to show four seasons<br>• Identifying the characteristics of the four seasons<br>• Recording the characteristics of the four seasons on the flow diagram<br>• Comparing and discussing the four seasons | • Diagrams<br>• Local environment<br>• Multimedia<br>• Print media<br>• Bond Paper |
| **Weather and climate hazards** | • list weather hazards<br>• explain how to mitigate against and adapt to weather and climate hazards | • Weather and climate hazards<br>• Mitigation such as planting more trees and using solar cookers<br>• Adaptation such as planting dry resistant crops/short season varieties | • Naming weather and climate hazards<br>• Discussing how to reduce the effect of weather and climate hazards<br>• Describing how to survive the effects of weather and climate hazards<br>• Watching videos<br>• Suggesting mitigation and adaptation measures used in Zimbabwe | • Electronic Media<br>• Resource persons<br>• Newspaper cutting<br>• Pamphlets<br>• Print media |

## 8.8 TOPIC 8: SOIL, PLANTS AND ANIMALS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Soil** | • identify organisms living in and on the soil<br>• discuss how plants and animals benefit from the soil<br>• explain how soil benefits from organisms | • Soil as an eco-system<br>- Organisms living in and on the soil<br>- Soil as a source of plant nutrients<br>- Soil as a habitat for animals<br>- Organisms provide organic matter to the soil | • Observing organisms living on the soil<br>• Digging soil in the local garden to identify organisms<br>• Naming organisms found in the soil<br>• Illustrating how plants get nutrients from the soil<br>• Describing how organisms provide organic matter to the soil<br>• Watching video animation on living organisms in the soil | • Local environment<br>• School garden<br>• Garden tools<br>• Print media<br>• Recommended textbooks<br>• Humus<br>• Compost<br>• Electronic media<br>• Magnifying lens |
| **Plants** | • classify plant foods<br>• explain the nutritional value of different plant foods<br>• list nutrients found in plant foods | • Plant food groups such as: cereals, legumes, root tubers, fruits and leafy vegetables<br>• Plant food nutrients | • Collecting plant foods<br>• Classifying plant foods<br>• Listing nutrients in different plant food | • Various plant food<br>• Textbooks<br>• Print media<br>• Pictures<br>• The environment<br>• Plant food items |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | - Vitamins<br>- Minerals<br>- Fats<br>- Proteins<br>- Carbohydrates<br>- fibre<br>- water | food group | • Trays<br>• Recommended textbooks<br>• Resource persons<br>• Print media |
| **Animals** | • identify characteristics of vertebrates<br>• classify vertebrates into five groups<br>• describe the external features of each group of vertebrates<br>• state examples of vertebrates in each group<br>• identify vertebrates according to their habitats | • Animal kingdom Vertebrates<br>• Characteristics of vertebrates<br>• Five groups of vertebrates<br>- fish<br>- amphibians<br>- reptiles<br>- birds<br>- mammals<br>• External features of each group of vertebrates | • Conducting educational tours to view vertebrates Describe characteristics of vertebrates<br>• Categorising vertebrates into five groups.<br>• Describing external features of animals in the different groups<br>• Listing examples of animals in each group.<br>• Classifying vertebrates according to their habitats.<br>• Viewing videos | • Print media<br>• Recommended textbooks<br>• Electronic media Farm Museum<br>• Resource person<br>• Fish pond<br>• Game Park |

## 8.9 TOPIC 9: LANDFORMS AND MAPS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Landforms and Maps** | • identify natural and man-made landforms<br>• distinguish between natural and man-made landforms | • Landforms<br>-natural<br>-man-made | • Viewing videos and naming landforms<br>• Classifying landforms as natural or man-made<br>• Collecting materials for construction of models<br>• Designing and Constructing the landform models<br>• Exhibiting landform models<br>• Classifying natural and man-made landforms<br>• Viewing videos on landforms<br>• Discussing the importance of landforms | • Local environment<br>• Pebbles<br>• Papier-mârché<br>• Sand soil<br>• Recommended textbooks<br>• Resource person<br>• Print media<br>• Aerial photographs<br>• Electronic media<br>• Soil<br>• Tins<br>• Grass<br>• Paper |

## 8.10 TOPIC 10: SUSTAINABLE RESOURCE MANAGEMENT

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Sustainable Resource Management** | • classify natural resources into renewable and non-renewable<br>• locate some natural resources in Zimbabwe<br>• assemble natural resources in the science corner<br>• describe uses of some natural resource | • Renewable and non-renewable resources<br>• Distribution of natural resources in Zimbabwe<br>• Uses of resources | • Identifying resources as renewable and non-renewable<br>• Using a map of Zimbabwe to locate resources<br>• Drawing a map showing Zimbabwean resources<br>• Collecting resources for display in the science corner<br>• Discussing the uses of resources at home and elsewhere | • Map showing natural resource distribution<br>• Print media<br>• Samples of resources from local environment<br>• Samples of resources<br>• Electronic media |
| | • identify different forms of waste<br>• State examples of solid, liquid and gaseous waste | • Forms of waste<br>-Solid<br>-liquid<br>- gas | • Explaining forms of waste<br>• Listing examples of solid, liquid and gaseous waste | |

# GRADE 5

## 8.1 TOPIC 1: HEALTH AND SAFETY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Human Body** | • identify the parts of the digestive system<br>• state the function of parts of the digestive system<br>• describe the digestive process | • Digestive system<br>- In the mouth<br>- In the stomach | • Discussing what happens to the food they eat<br>• Simulating digestion in people<br>• Naming parts of the human digestive system<br>• Discussing the function of each part of the digestive system<br>• Drawing and labeling the digestive system | • Print media<br>• Model of digestive system<br>• Recommended textbooks<br>• Electronic media<br>• Resource person (local health officer) |
| **Nutrition** | • list eating disorders<br>• explain the importance | • Eating disorders -obesity (over eating) | • Discussing eating disorders and the consequences | • Print media<br>• Electronic media |

| | | | | |
|---|---|---|---|---|
| | of proper eating habits<br>• practice proper eating habits<br>• name the deficiency diseases and their insufficient nutrient<br>• recognize symptoms of nutrition deficiency diseases | -anorexia (starving oneself)<br>–bulimia (over eating then forcing vomiting)<br><br>• Deficiency diseases<br>- Scurvy<br>- Kwashiorkor<br>- Marasmus<br>- Beri-beri<br>- Goiter<br>- Rickets<br>- Night blindness | • Suggesting proper eating habits<br>• Practicing proper eating habits at school and at home<br>• Identifying deficiency diseases from the given list<br>• Watching video clips on deficiency diseases or eating disorders<br>• Collecting and displaying pictures of people with deficiency diseases and eating disorders | • Recommended textbooks<br>• Pictures |
| **Diseases and prevention** | • describe the signs and symptoms of gut worms infection<br>• suggest ways of controlling gut worms<br>• demonstrate awareness of the dangers of gut worms | • Harmful gut worms | • Stating signs and symptoms of gut worms infection<br>• Describing how gut worms enter the body<br>• Discussing ways of controlling gut worms<br>• Demonstrating proper ways of washing hands<br>• Dramatising how an infected person behaves<br>• Singing rhymes and poems on dangers of gut worms | • Electronic media<br>• Health personnel<br>• Recommended textbooks<br>• Print media |

| | | | | |
|---|---|---|---|---|
| | • name different STIs<br>• explain how STIs are spread<br>• state the effects of STIs<br>• outline the prevention measures of STIs<br><br>• discuss the causes of HIV/AIDS<br>• list ways in which HIV is spread<br>• state the effects of HIV<br>• describe how AIDS can be prevented | • Sexually transmitted infections (STIs)<br>- Gonorrhoea<br>- Syphilis<br><br>• Prevention of STIs<br><br>• HIV/AIDS<br>-Cause<br>- Transmission<br>- Prevention | • Identifying STIs<br>• Discussing the effects of STIs<br>• Discussing prevention of STIs with health workers<br><br>• Explaining how HIV causes AIDS<br>• Naming ways in which HIV is transmitted<br>• Discussing the effects of HIV/AIDS<br>• Discussing how AIDS can be prevented | |
| **Safety** | • identify possible accidents that can cause burns<br>• discuss safety measures to be implemented to prevent burns.<br>• administer first aid on fire burns and chemical burns | • First Aid on burns<br>- Fire burns<br>- Chemical burns<br>- Hot water<br>- Heating appliances | • Listing possible accidents that can cause burns<br>• Brainstorming safety measures to be implemented<br>• Practising the administration of first aid on fire burns and chemical burns | • Protective clothing<br>• Print media<br>• Recommended textbooks<br>• Electronic media<br>• First Aid Kit |

## 8.2 TOPIC 2: MATERIALS AND STRUCTURES

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Characteristics of Materials** | • list uses of different materials<br>• use materials basing on their properties | • Uses of material | • Stating the uses of materials<br>• Discussing suitability of given materials for specified tasks | • Samples of materials |
| **Elements, Mixtures and Compounds** | • describe the different states of matter | • States of matter<br>- Solids<br>- Liquids<br>- Gases | • Discussing the states of matter<br>• Identifying states of matter<br>• Giving examples of different states of matter<br>• Manipulating different matter to establish their state | • Samples of matter<br>• Electronic media<br>• Recommended textbooks |
| **Tools** | • identify the uses of tools<br>• describe safety precautions when using tools<br>• demonstrate how tools can be used as machines<br>• compare tools as machines to manual | • Tools<br>- Uses<br>- Safety precautions<br>- Tools as machines<br>- Tool models<br>- Tool making | • Describing uses of tools<br>• Simulating use of tools<br>• Discussing safety precautions when using tools<br>• Drawing and labeling tools<br>• Showing how tools can be used as machines | • Tools used in the home<br>• Print media<br>• Electronic media<br>• Recommended textbooks<br>• Household tools<br>• Wood, wire, metal |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | work<br>• design and make models and tools | | • Discussing the advantages and disadvantages of using tools to manual work<br>• Designing and making models and tools | |
| **Structures** | • identify man-made structures in the environment<br>• construct models of structures<br>• relate structures and their functions<br>• appreciate the aesthetic value of structures | • Man-made structures such as:<br>- Buildings<br>- Bridges<br>- Dam wall<br>- Roads<br>- Railway line<br>• Aesthetic values of structures such as: , statues, monuments such as Great Zimbabwe, | • Discussing man-made structures<br>• Drawing and labeling the structures<br>• Making models of structures<br>• Describing functions of various structures<br>• Conducting educational tour<br>• Taking pictures of structures<br>• Taking models for science exhibition | • Print media<br>• Objects in the environment<br>• Recommended textbooks<br>• Electronic media |

## 8.3 TOPIC 3: ENERGY AND FUELS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Energy** | • state ways of harnessing solar energy<br>• demonstrate that different surfaces reflect light in distinct ways<br>• evaluate uses of solar energy<br>• demonstrate the formation of images<br>• describe materials that burn giving out heat energy in the local environment<br>• demonstrate that heat is produced through friction<br>• recognize that the sun is a major source of heat energy<br>• describe ways in which heat can be destructive | • Solar energy<br>- Materials: heat absorbing materials<br>- Electricity generation<br>- Uses of solar energy<br>• Models of solar appliances<br>• Light energy<br>- Reflection<br>- Images<br>• Heat energy<br>- Sources of heat<br>- Uses of heat<br>- Dangers of heat | • Drying food stuffs to show how materials absorb solar energy<br>• Exposing various materials to the sun<br>• Connecting a solar powered circuit<br>• Identifying solar appliances in the environment<br>• Directing light on different surfaces<br>• Recording and analyzing observations<br>• Explaining how images are formed<br>• Generating heat through friction<br>• Demonstrating the uses of heat such as cooking drying, warming, ironing<br>• Viewing videos showing the dangers of heat | • Various materials such as: metals, black cloth, white cloth, plastics, wood, solar panels, solar invertor and stones<br>• Electronic media<br>• Solar appliances<br>• Playing mirror<br>• Water<br>• Tarmac<br>• Metals<br>• Window panes<br>• Light sources<br>• Reflective surfaces<br>• Matches<br>• Sun<br>• Stoves/candles/wood<br>• Relevant videos<br>• Print media |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Fuel** | • identify forms of fuels | • Renewable and nonrenewable fuels<br>• Energy production from fuel | • Naming fuels<br>• Categorising fuels as renewable or non renewable<br>• Observing energy forms from burning fuels | • Wood<br>• Coal<br>• Gas<br>• Petrol<br>• Diesel<br>• Paraffin<br>• Oil<br>• Recommended textbooks<br>• Electronic media |
| | • explain how fuel is used | • Uses of fuels | • Listing uses of fuel<br>• Surveying the environment to discover how fuels are in use and what fuels can do | |

## 8.4 TOPIC 4: ELECTRICITY AND ELECTRONICS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Electronics** | • explain how electric current flows through conductors<br>• identify electrical symbols<br>• set up a simple electrical circuit<br>• compare and contrast the series and parallel circuits | • Flow of electric current<br>• Electrical circuits<br>- Series circuits<br>- Parallel circuit<br>- Circuits for household electricity | • Carrying out an experiment to show a simple electrical circuit<br>• Discussing electrical symbols<br>• Identifying components of an electrical circuits<br>• Making and drawing a simple circuit<br>• Conducting an experiment to show a parallel circuit<br>• Demonstrating the connections in household electricity | • Batteries<br>• Copper wire<br>• Circuit board<br>• Bulbs<br>• Switches<br>• Ammeter<br>• Voltmeter<br>• Recommended textbooks<br>• Print media |

## 8.5 TOPIC 5: FORCES AND MAGNETS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Forces** | • describe friction as a contact force<br>• demonstrate friction<br>• suggest ways in which friction can be useful<br>• explain the negative effects of friction<br>• demonstrate ways of managing friction<br>• investigate materials to establish how they withstand friction | • Frictional force<br>- Causes of friction<br>- Useful effects of friction<br>- Negative effects of friction<br>- Managing friction | - Explaining friction by gripping and rubbing materials<br>- Discussing situations where friction is evident such as tyres, shoes<br>- Describing the effects of friction<br>- Oiling and greasing appropriate parts of machines<br>- Classifying materials according to how they withstand friction | - Wheelbarrow<br>- Oil<br>- Grease<br>- Bath towels<br>- Soap<br>- Toothbrush<br>- Print media<br>- Electronic media<br>- Slide<br>- Trolley<br>- Rough and smooth surfaces<br>- Sand paper |

## 8.6 TOPIC 6: DESIGN AND TECHNOLOGY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Design and Technology** | • identify the elements of design in structures<br>• plan a structure using elements of design<br>• construct a structure using a prepared sketch | • Elements and principles of design in structures | • Sketching desired structures<br>• Making structures using locally available materials | • Print media<br>• Electronic media<br>• Bond Paper<br>• Pencil<br>• Tools<br>• Recommended textbooks |

## 8.7 TOPIC 7: WATER

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Properties of Water** | • describe conditions necessary for evaporation<br>• explain how water changes into vapour | • Water evaporation<br>- Conditions necessary for evaporation<br>- Water vapour | • Exposing water to heat, sun and wind<br>• Observing and recording findings<br>• Demonstrating how water changes into vapour by boiling | • Local environment<br>• Water<br>• Saucepan<br>• Evaporating dish<br>• Beaker<br>• Source of heat<br>• Print media |
| **Sources of Water** | • recognize ground water sources<br>• explain ground water extraction methods<br>• design a water extraction model | • Ground water<br>• Water extraction model | • Discussing ground water sources<br>• Identifying ground water sources in the local community<br>• Discussing ground water extraction methods<br>• Designing and making a water extraction model<br>• Explaining how the model works | • Local ground water sources<br>• Print media<br>• Electronic media<br>• Recommended textbooks<br>• Borehole<br>• Spring<br>• Protected wells |
| **Water and the Environment** | • list causes of water pollution<br>• explain the effects of water pollution<br>• suggest ways of preventing water pollution | • Water pollution<br>- Causes<br>- Effects<br>- Prevention | • Discussing causes of water pollution<br>• Observing effects of water pollution in the local environment<br>• Determining ways of preventing water pollution | • Water<br>• Print media<br>• Electronic media<br>• Resource person<br>• Recommended textbooks<br>• Statutory instruments and laws on pollution |

## 8.8 TOPIC 8: WEATHER AND CLIMATE

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Weather and Climate** | • name weather instruments<br>• state the uses of weather instruments<br>• Make weather instruments and models<br><br>• Measure and record weather conditions | • Weather instruments such as<br>- rain gauge<br>- thermometers<br>- wind vane<br>- hygrometer<br><br>• Measuring weather | • Touring the weather station<br>• Identifying and listing weather instruments<br>• Drawing weather instruments<br>• Explaining the uses of weather instruments<br>• Designing and making weather instruments and models<br>• Measuring and recording weather conditions | • Weather station<br>• Recommended textbooks<br>• Print media<br>• Wire<br>• Manila<br>• Plastic containers<br>• Wood<br>• Metal<br>• Tin |
| **Seasons** | • explain how the seasonal changes impact on human activities<br>• describe how humans can take advantage of seasonal changes | • Influence of seasons on human activities | • Observing seasonal change impact to the environment<br>• Listing the observed changes for each season<br>• Discuss the human activities determined by the seasonal changes<br>• Assess the advantages | • Local environment<br>• Recommended textbooks<br>• Electronic media<br>• Print media |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | and disadvantages of seasonal changes on human activities.<br>• Suggesting mitigatory measures to counteract the negative impacts of seasonal changes to human activities | |
| **Weather and Climate Hazards** | • develop an appreciation of how human activities contribute to global warming.<br><br>• discuss global warming and climate change | • Causes of global warming and climate change<br>- Ozone layer depletion<br>- Increased temperatures<br><br>- Emission of gases from human activities e.g. deforestation, use of aerosols, fossil fuels, refrigeration, | • Illustrating how the ozone layer functions to protect the earth's environment<br>• Watching a Video on causes of global warming and climate change<br>• Identifying causes of global warming<br>• Discussing how global warming causes climate change | • Local Environment<br>• Electronic media<br>• Print media |

## 8.9 TOPIC 9: SOIL, PLANTS AND ANIMALS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Soil** | • describe the interdependence between components of the soil ecosystem<br>• make a soil based ecosystem<br>• identify different uses of soil<br>• discuss different uses of soil in the environment<br>• make clay ornaments and artefacts | • Soil as an Ecosystem<br>-Natural<br>- Man-made<br><br>• Uses of soil<br>- Crop production<br>- Construction<br>- Pottery | • Constructing food webs in the soil ecosystem<br>• Watching videos on soil ecosystem<br>• Building an ecosystem comprising earthworms and plants<br><br>• Moulding bricks<br>• Making concrete tiles<br>• Constructing models of earth dam and roads<br>• Moulding clay ornaments and artefacts | • Print media<br>• Containers<br>• Earthworms<br>• Water<br>• School environment<br>• Electronic media<br>• Different types of soil<br>• Construction tools<br>• Hoes<br>• Water |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Plants** | • identify plants as producers of food<br>• describe the food chain and food web | • Plants as producers<br>-food chains<br>-food webs<br>-primary consumers<br>-secondary consumers | • Explaining why plants are producers<br>• Illustrating how plants and animal relate through food chains and food webs.<br>• Identifying organisms in a food chain or web as primary consumer, or secondary consumer<br>• Naming herbivores, omnivores and carnivores from food chains and webs.<br>• Collecting pictures on different animals and classifying them<br>• Simulating interdependence of organism | • Print media<br>• Recommended textbooks<br>• Local Environment<br>• Flowers<br>• Electronic media<br>• Magnifying lens<br>• Forceps |
| | • identify different types of plant reproduction<br>• describe the agents of pollination<br>• discuss advantages and | • Plant reproduction<br>- Sexual (seeds)<br>- Asexual (Vegetative)<br>- Agents of | • Discussing sexual and asexual reproduction in plants<br>• Collecting different types of flowers | |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | methods of plant reproduction<br>• Observing transportation of pollen grains<br>• Listing the agents of pollination | |
| **Animals** | • explain animal reproduction<br>• identify advantages and disadvantages of external and internal fertilization | • Animal reproduction<br>- External fertilization<br>- Internal fertilization | • Listing the various animals<br>• Discussing how animals reproduce<br>• Grouping animals according to methods of fertilization<br>• Watching videos and pictures on animal reproduction<br>• Discussing the advantages and disadvantages of external and internal fertilisation | • Print media<br>• Electronic media<br>• Animal habitat<br>• Recommended textbooks |

## 8.10 TOPIC 10: LANDFORMS AND MAPS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Landforms and Maps** | • explain uses of different landforms found in the environment | • Uses of landforms<br>- socio-cultural such as: rain making ceremonies, boundaries and heritage<br>- economic such as: tourism, sporting, fishing, hunting, employment creation<br>- aesthetic value<br>- habitats for various animals | • Identifying important landforms in Zimbabwe<br>• discussing the uses of landforms<br>• conducting educational tours to various landforms | • Natural and man-made landforms<br>• Electronic media Recommended textbooks<br>• Print media |

## 8.11 TOPIC 11: SUSTAINABLE RESOURCE MANAGEMENT

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Sustainable Resource Management** | • analyse why resource use should be managed<br>• state ways of sustainable use of renewable resources<br>• critic the use of non-renewable resources | • Sustainable use of resources<br>- Renewable<br>- Non-renewable<br>- Good practices<br>- Protected species<br>- Enterprising | • Suggesting how renewable resources can be sustainably used<br>• Discussing ways of sustainably using non-renewable resources | • Plants<br>• Game parks Resource persons from Campfire<br>• Statutory bodies like EMA, Zambezi River Authority |
| | • demonstrate good practices on resource management<br>• identify protected species<br>• state how communities can generate income through sustainable use of resources | | • Naming protected plants and animals in Zimbabwe<br>• Educational touring of good practices in resource management<br>• Viewing videos on good practices on sustainable use of resources | • Electronic media<br>• Print media<br>• Pictures of wild animals<br>• Statutory Instruments |
| | • explain how locally available natural resources are used sustainably<br>• assess the importance of maintaining game parks<br>• outline the consequences of unsustainable use of | • Sustainable use of locally available resources<br>- Renewable<br>- Non-renewable<br>- Good practices<br>- Protected species Enterprising | • Evaluating the benefits of maintaining game parks.<br>• Discussing the consequences of unsustainable use of natural resources<br>Designing a project on sustainably generating income from natural resources | |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | • Designing a project on sustainably generating income from natural resources | |
| | • explain how locally available natural resources are used sustainably<br>• assess the importance of maintaining game parks<br><br>• outline the consequences of unsustainable use of natural resources | | | |
| | • state benefits of natural resources to the community<br><br>• classify hazardous waste<br>• explain safe practices in managing hazardous waste | • Benefits of natural resources<br><br>• Classification of Hazardous waste<br>- Poisonous<br>- Flammable<br>- Sharp objects | • Identifying hazardous waste<br>• Categorising hazardous waste<br>• Demonstrate proper management of hazardous waste within the school and at home | |

# GRADE 6

## 8.1 TOPIC 1: HEALTH AND SAFETY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Human Body** | • identify human reproductive parts<br>• draw and label human reproductive systems<br>• recognize the puberty stage and negative impact on early pregnancy<br>• explain the gestation period in Humans | • Human reproductive system<br>- Female reproductive system<br>- Male reproductive system<br>-Puberty<br>-Pregnancy(gestation) | • Drawing and labeling human reproductive system<br>• Observing a chart and videos showing the reproductive systems<br>• Relating reproductive system to puberty stage<br>• Discussing early pregnancy and the challenges involved.<br>• Explaining gestation (pregnancy)in humans | • Recommended textbooks<br>• Print media<br>• Electronic media<br>• Human Reproductive system model |
| **Nutrition** | • outline methods of preventing deficiency diseases<br>• suggest ways of managing deficiency diseases | • Prevention and management of deficiency diseases | • Identifying nutrients lacking in some deficiency diseases<br>• Discussing the essence of having a balanced diet<br>• Proposing ways of managing deficiency diseases | • Print media<br>• Recommended textbooks<br>• Food samples<br>• Electronic media |
| **Diseases** | • distinguish between natural and artificial | • Immune system<br>- Natural | • Discussing natural and artificial immunity | • Resource person |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | immune system<br>• explain the causes of HIV and AIDS<br>• list sign and symptoms of AIDS<br><br>• accept and accommodate people living positively with HIV and AIDS<br>• engage in peer counseling | • Artificial (immunisation)<br>• HIV and AIDS<br>- Causes<br>- Signs and symptoms<br><br><br><br>• Prevention and living positively with HIV and AIDS | • Observing videos on immunisation campaign<br>• Discussing causes of AIDS<br>• Stating signs and symptoms of HIV and AIDS<br>• Watching video clips showing people living with HIV/AIDS<br>• Discussing ways on how to live positively with HIV/AIDS<br>• Dramatising peer counseling | • Baby health card<br>• Print media<br>• Recommended textbooks<br>• Electronic media<br>• Print media<br>• Recommended textbooks |
| **Safety** | • identify elements of the First Aid Kit<br>• administer First Aid on an unconscious person | • Components of First Aid Kit<br>• First Aid on unconscious persons | • Listing elements of the First Aid Kit<br>• Relating elements of the First Aid Kit to their proper use<br>• Practising the administration of First Aid on an unconscious person | • First Aid Kit<br>• Dummies<br>• Resource person |

## 8.2 TOPIC 2: MATERIALS AND STRUCTURES

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Characteristics of Materials** | • deduce that materials change when subjected to various conditions<br>• describe the changes in materials when subjected to various conditions<br>• compare behavior of materials before and after subjection to change | • Reaction of materials under certain conditions<br>-heat<br>-water<br>-acid<br>-oxygen<br>• Effects on materials when subjected to change | • Observing materials being subjected to different conditions<br>• Recording observed changes<br>• Comparing and contrasting the characteristics of changed materials to original characteristics | • Water<br>• Heat source<br>• Fridge<br>• Metallic and non -metallic objects<br>• Hydrochloric acid |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Elements, mixtures and compounds** | • identify examples of important elements in nature<br>• describe the atomic structure of matter<br>• identify some chemical compounds<br>• explain the difference between a compound and original substances | • Important elements in nature (Oxygen, Nitrogen, Hydrogen, Carbon, Sodium, Chlorine, Iron)<br>• Structure of atoms<br>- Protons<br>- Neutrons<br>• Electrons<br>• Chemical compounds | • Listing important elements in nature<br>• Describing the atomic structure of matter<br>• Drawing the structure of an atom<br>• Viewing videos on atomic structure<br>• Listing chemical compounds<br>• Discussing different compounds | • Electronic media<br>• Print media<br>• Video on atomic structure<br>• Periodic table<br>• Samples of chemical compounds |
| **Tools** | • state functions of machines<br>• design models of machines<br>• Make models of machines | • Functions of machines<br>• Machine design and model | • Discussing the functions of machines<br>• Listing functions of machines<br>• Designing models of machines<br>• Making models of machines<br>• Displaying and demonstrating the use of constructed machines at science exhibition | • Print media<br>• Electronic media<br>• Various materials such as: cardboard boxes, ropes, wood, soil, metal |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Structures** | • relate structures to specific functions<br>• explain how different structures resist force<br>• illustrate tensional and compressional forces exerting on different structures<br>• demonstrate an appreciation of local monuments | • Functions of structure<br>- Bridges<br>- Skyscrapers<br>- Dams<br>- Huts<br>Houses<br><br>• Important monuments such as:<br>- The Tomb of the unknown soldier<br>- Birchenough bridge<br>- Great Zimbabwe | • Discussing the different functions of structures (natural and man-made)<br>• Discussing forces which exert on structures<br>• Demonstrating how the structures can withstand force<br>• Visiting different sites to observe structures such as: Great Zimbabwe, Birchenough Bridge, Dam walls, Heroes Acre<br>• Designing a structure to demonstrate tensional and compressional forces | • Print media<br>• Environment<br>• Man-made and natural structures<br>• Electronic media<br>• Recommended textbooks<br>• Mock ups<br>• Apparatus |

## 8.3 TOPIC 3: ENERGY AND FUELS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Energy** | • explain how electricity is generated<br>• evaluate the various methods of generating electricity<br>• explain how electricity can be conserved.<br>• construct models of different power generation plants<br><br>• outline uses of electrical energy<br>• identify electrical gadgets<br>• develop electrical gadgets | • Electrical energy generation<br>- Thermal<br>- Hydro<br>- Nuclear<br>- Solar<br>- Wind<br>• Conservation of Electrical energy<br><br>• Uses of Electrical energy<br>• Electrical gadgets | • Viewing videos on power generation<br>• Describing different methods of generating electricity<br>• Comparing the different methods of generating electricity<br>• Brainstorming on ways of conserving electricity such as: switching off redundant energy consumers, using energy saving bulbs<br>• Making models of different power plants<br>• Educational tour<br>• Discussing uses of electrical energy<br>• Collecting real or pictures of electrical gadgets<br>• viewing videos on dangers of electricity | • Electric wires<br>• Electrical appliances<br>• Batteries<br>• Generators<br>• Magnets<br>• Solar panel<br><br>• Energy saving bulbs,<br>• Pressure cooker,<br>• Print media<br>• Electronic media<br>• Resource person<br>• Recommended Text books |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | • describe how to prevent electrical accidents | • safety precautions | • Discussing the dangers associated with the use of electricity<br>• suggesting safe ways of using electricity | • pamphlets<br>• print media |
| Fuel | • describe sustainable use of fuels<br>• apply conservation measures in using fuels | • Sustainable use of fuels<br>• Conservation measures such as using green fuels, tsotso stove, solar cooker saw dust blocks and tree planting | - Discussing sustainable uses of fuel<br>- suggesting fuel conservation measures which can be used at home<br>- outlining the advantages of saving fuel | • Recommended textbooks<br>• Electronic Media Print media<br>• Environment |

## 8.4 TOPIC 4: ELECTRICITY AND ELECTRONICS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Electricity and Electronics** | • describe alternating current (a.c) and direct current (d.c)<br>• identify the advantages and disadvantages of transmitting current as alternating current or direct current<br>• make models of electronic devices | - a.c and d.c<br>- Models of electronic devices | • Explaining the a.c and d.c<br>• Discussing advantages and disadvantages of a.c and d.c current<br>• Connecting devices to power source<br>• Making models of electronic devices | • Electronic devices<br>• Print media<br>• ICT tools<br>• Power source<br>• Electronic components |

## 8.5 TOPIC 5: FORCES AND MAGNETS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Forces** | • identify magnets as a source of force<br>• explain action of magnet as force at a distance<br>• classify materials as magnetic or non-magnetic<br>• assess the use of magnets in devices<br>• explain behavior of two magnets depending on poles. | • Magnets<br>- Magnetic force<br>- Magnetic materials<br>- Non-magnetic materials<br>- Uses of magnets | • Observing and recording the action of magnets on magnetic and non-magnetic materials<br>• Identifying devices with magnets<br>• Discussing the use of magnets in devices<br>• predict whether two magnets attract or repel depending on poles facing each other | • Magnets<br>• Magnetic materials<br>• Iron fillings<br>• Non-magnetic materials<br>• Strings<br>• wires<br>• Rods<br>• Broken down devices with magnets<br>• Electronic tools |

## 8.6 TOPIC 6: DESIGN AND TECHNOLOGY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Design and Technology** | • illustrate models of mechanical systems<br>• apply principles and elements of design to mechanical models | • Elements and principles of design<br>• Models of mechanical systems<br>• -engines<br>• -Generators<br>• -pumps | • Sketching designs of mechanical systems<br>• Making the models of mechanical systems<br>• Calculating proportions | • Print media<br>• Electronic media<br>• Materials from the environment<br>• Recommended textbooks |

## 8.7 TOPIC 7: WATER

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Properties of Water** | • identify substances that dissolve in water | • Water as a universal solvent<br>- Solutes<br>- Liquids<br>**NB: Fuels do not dissolve in water** | • Collecting different substances<br>• Carrying out an experiment with substances to establish solubility<br>• Recording soluble and insoluble substances | • Water<br>• Soluble substances<br>• Insoluble substances<br>• beakers |
| **Sources of Water** | • describe stages of the water cycle<br>• experiment ways of changing the state of water | • Water cycle<br>- Stages of water cycle(evaporation, condensation, freezing, precipitation) | • Discussing stages of the water cycle using diagrams<br>• Demonstrating the stages of the water cycle<br>• Drawing and labeling water cycle<br>• Simulating stages of the water cycle using video animations | • Water<br>• Heat source<br>• Cold surface<br>• Containers<br>• Recommended textbook<br>• Print media<br>• Electronic Media |
| | • identify human activities that affect the water cycle<br>• explain the impact of | - Human activities impact on the water cycle such as<br>- deforestation, | • Discussing human activities that affect the water cycle<br>• Discussing the impact | • Local environment<br>• Videos on water cycle |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | human activities on the water cycle<br>• suggest ways to reduce effects of human activities on the water cycle | - pollution,<br>- siltation,<br>- settlement,<br>- Ways to reduce effects of human activities such as:<br>- afforestation,<br>- damming,<br>- cloud seeding | of human activities on the water cycle in the local environment<br>• Brainstorming on ways to reduce the effects of human activities on water cycler Watching animation videos on water cycle | |
| **Water and the Environment** | • identify organisms living in water<br>• discuss how plants and animals use water<br>• explain the role of plants and animals in the water cycle | • Water as an ecosystem<br>• Water as a habitat<br>• Importance of water to life<br>• Role of plants and animals in the water cycle | • Observing plants and animals living in water<br>• Describing how plants and animals use water for survival<br>• Illustrating how plants and animals help in the water cycle<br>• Watching video animations on life in water | • Water body in the local environment<br>• Print media<br>• Electronic media<br>• Recommended textbooks |

## 8.8 TOPIC 8: WEATHER AND CLIMATE

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Weather and Climate** | • explain weather patterns for a specified place over a long period of time<br>• distinguish the difference between weather and climate<br>• compare daily, weekly and monthly rainfall and temperature records | • Weather patterns<br>• Differences between weather and climate | • Observing and recording daily weather conditions of the local area.<br>• Analysing daily weather conditions of the local area<br>• Interpreting daily, weekly and monthly<br>• Rainfall and temperature records of the last months.<br>• Discussing how the daily, weekly, monthly and annual weather records determine weather patterns<br>• Comparing weather and climate | • Weather stations<br>• Weather Maps<br>• Weather records<br>• Electronic media<br>• Recommended textbooks<br>• Print media<br>Weather Instruments<br>• Local environment |
| **Seasons** | • explain shape, rotation and revolution of the earth<br>• compare the effect of rotation and revolution to the environment | • The earth and space<br>- Shape<br>- Rotation<br>- Revolution | • Observing the model of the earth<br>• Discussing the shape of the earth<br>• Simulating earth rotation as cause of day and night | • Earth model<br>• Wire<br>• Clay<br>• Plastics<br>• Papers<br>• Torch<br>• Glue |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | | | • Simulating earth revolution on its orbit around the sun<br>• Differentiate the effect of rotation and revolution<br>• Modeling of the globe (earth) | • Balloon |
| **Weather and Climate Hazards** | • describe hazards caused by direct heat from the sun on the environment<br>• discuss the impact of global warming on rainfall patterns<br>• explain how people and animals are protected from direct heat of the sun<br>• suggest ways of reducing the impact of climate change | • Effects of global warming Effects of climate change<br>• Mitigation on global warming and climate change | • Stating hazards caused by direct heat from the sun.<br>• Surveying the community on causes of global warming and climate change<br>• Discussing ways of reducing the impact of climate change | • Electronic media Print media<br>• Resource person from e.g. EMA<br>• Questionnaires and observation schedules |

## 8.9 TOPIC 9: SOIL, PLANTS AND ANIMALS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Soil** | • describe soil erosion<br>• identify agents of soil erosion<br>• Identify types of soil erosion<br>• explain the effects of soil erosion<br>• explain effects of gradient on soil erosion<br><br>• demonstrate ways of mitigating soil erosion | • Soil erosion<br>- Agents of soil erosion<br>- Types of soil erosion such as: sheet, gulley, rill<br>- Effects of soil erosion<br><br>• Soil conservation<br>- Contour ridges<br>- Afforestation<br>- Paddocking<br>- Improved farming methods | • Discussing soil erosion<br>• Naming agents of soil erosion<br>• Visiting eroded sites<br>• Scanning the environment for effects of soil erosion<br>• Experimenting with different gradient to observe soil erosion<br><br>• Making contours/terracing<br>• Planting trees and grass such as vetver grass<br>• Protecting various terrains against erosion | • Environment<br>• Water<br>• Rocks<br>• Plants<br>• Soil<br>• Print media<br>• Wooden planes/steel rods<br>• Containers<br>• Garden tools<br>• Electronic media |
| **Plants** | • describe germination<br>• identify conditions necessary for germination<br><br>• demonstrate germination in | • Germination<br>• Conditions necessary for germination<br>- Water<br>- Oxygen<br>- Nutrients<br>- Suitable temperature | • Discussing germination<br>• Setting up an experiment to determine conditions for germination<br>• Identifying conditions necessary for germination<br>• Setting experiments to | • Bean and maize seeds<br>• Cotton wool<br>• Beakers<br>• Water<br>• Soil |

| KEY CONCEPTS | OBJECTIVES Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | different seeds | | demonstrate germination of beans and maize seeds.<br>• Constructing and using green houses | • Print media<br>• Electronic media |
| **Animals** | • classify animals according to their diet<br>• differentiate between predators and prey<br>• relate predators to their prey<br>• explain how energy is passed between organisms<br>• construct food chains and food webs | • Animal nutrition<br>- Herbivores<br>- Carnivores<br>- Omnivores<br>- Food chain<br>- Food web | • Listing different types of food eaten by animals<br>• Observing animals feeding<br>• Classifying animals as herbivores, carnivores and omnivores<br>• Distinguishing animals as predators or prey<br>• Illustrating food chains and food webs<br>• Identifying herbivores, carnivores and omnivores from food webs and food chains<br>• Modeling food webs and food chains<br>• Watching videos on prey and predators | • Animal pictures<br>• Recommended textbooks<br>• Electronic media Local environment available materials<br>• Print media |

## 8.10 TOPIC 10: LANDFORMS AND MAPS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Landforms and Maps** | • identify features of a map<br>• draw a sketch map of the local environment showing various landforms | • Features of a map<br>• Representation of landforms on maps | • Listing features of a map<br>• Describing features on a map using a given key<br>• Sketching maps using templates<br>• Drawing maps<br>• Modeling maps showing various landforms | • Maps<br>• Electronic media<br>• Local environment<br>• Print media<br>• Papier marche<br>• Recommended textbooks |

## 8.11 TOPIC 11: SUSTAINABLE RESOURCES MANAGEMENT

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Sustainable Resource Management** | • identify different mineral ores mined in Zimbabwe<br>• summarise the extraction, smelting and refining processes<br>• discuss sustainable extractions of minerals<br>• suggest proper waste disposal in mining<br>• group waste material as bio-degradable or non bio-degradable<br>• discuss sustainable use of minerals | • Mineral ores in Zimbabwe<br>• Sustainable extraction of mineral ores<br><br>• Waste disposal<br>- The five Rs:<br>- Refuse<br>- Recycle<br>- Reuse<br>- Reduce<br>- Re-green<br><br>• Sustainable utilization of minerals | Naming different mineral ores mined in Zimbabwe<br>• Discussing various methods of extracting mineral ores<br>• Suggesting sustainable methods of extraction<br>• Describing the proper disposal of residues of smelting and refining processes<br>• Classifying waste material as bio-degradable or non bio-degradable<br>• Starting a school waste management e.g creating waste disposal sites, awareness raising in the community, production of toys from waste practising the 5 Rs approach.<br><br>• Identifying products made from minerals<br>• Explaining sustainable use of minerals | • Statutory instruments laws<br>• MMCZ<br>• EMA<br>• Different ores<br>• Resource persons from mining companies<br>• Actual mineral products<br>• Electronic media<br>• Print media<br>• Recommended textbooks |

# GRADE 7

## 8.1 TOPIC 1: HEALTH AND SAFETY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Human Body** | • Describe the main parts of the Respiratory System the structure of the respiratory system<br>• Demonstrate the breathing system through manipulating the model<br>• Describe the state components of the circulatory system<br>• Explain the functions of the components of the circulatory system of blood | Respiratory system<br>Mouth<br>Trachea<br>Bronchus<br>Lungs<br>Diaphragm<br>Rib cage<br>Breathing mechanism<br><br>• Circulatory system<br>- Heart<br>- Arteries, veins and capillaries<br>- Blood<br>• Functions<br>- Pumping<br>- Carry the blood to and from the heart around the body<br>- Transport substances<br>- Immunity | • Demonstrating breathing in and out<br>• Describing the respiratory system<br>• Viewing a video clip of the respiratory system<br>• Making a model of the respiratory system<br><br>• Observing and drawing the circulatory system<br>• Watching a video clip of the importance of the circulatory system<br><br>• Discussing the functions of the circulatory system | • Electronic media<br>Models of circulating system and models of Respiratory system<br>• Print media<br>• Baloons<br>• String<br>• Rubber tubing<br>• Plastic sheet.<br><br>• Recommended textbooks<br><br>• Models of the circulatory system and respiratory system, |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Nutrition** | • Identify food preservation methods<br>• Classify food preservation methods<br>• Demonstrate food preservation<br>• Justify the importance of preserving plant food.<br>• List indigenous foods<br>• Recognise the benefits of indigenous foods<br>• Make an indigenous dish | • Food preservation<br>- Indigenous methods such as: Salting, drying<br>- Exotic methods such as: Refrigerating, Canning<br>• Benefits of indigenous foods and herbs. | • Discussing preservation methods<br>• Listing plant foods that can be preserved<br>• Collecting plant foods<br>• Preserving plant foods<br>• Identifying indigenous foods<br>• Discussing the benefits of indigenous foods<br>• Collecting and preparing indigenous foods | • Salt<br>• Trays<br>• Fridges<br>• Vinegar<br>• Sugar<br>• Recommended textbooks<br>• Resource person<br>• Print media<br>• Local environment<br>• Food samples<br>• Utensils<br>• Heat source |
| | • distinguish between the indigenous and the GMOs foods<br>• appraise the indigenous foods | • Effects of genetically modified foods and herbs(GMOs) | • Identifying the GMO foods<br>• Explaining the advantages and disadvantages of GMOs | |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Diseases and prevention** | • explain epidemic diseases<br>• suggest ways of preventing and controlling epidemic diseases | • Epidemic diseases<br>-Ebola<br>-Influenza<br>• Prevention and control of epidemic diseases<br>• Control and management of chronic diseases<br>- Cancer<br>- Diabetes<br>- Hypertension | • identifying epidemic diseases<br>• Discussing the impact of epidemic diseases<br>• Discussing prevention and control of epidemic diseases<br>• Listing chronic diseases<br>• Discussing ways of controlling and managing the chronic diseases<br>• Playing videos on counseling and campaigns<br>• Dramatising peer counseling<br>• Engage in peer counseling on chronic diseases and awareness campaigns | • ICT tools<br>• Recommended textbooks<br>• Health worker/Counselor<br>• Print Media |
| Safety | • Discuss methods of rescuing a drowning person | • Rescuing a drowning person<br>- Methods of rescuing a drowning person | • Listing methods of rescuing a drowning person<br>• Simulating methods of | • First Aid Kit<br>• Dummies<br>• Ropes<br>• Life jackets |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | • demonstrate methods of rescuing a drowning person<br>• administer First Aid on a rescued drowning person | • Administering First Aid | rescuing a drowning person<br>• Practising the administration of First Aid on a rescued drowning person | • Floaters<br>• Water sources<br>• Resource person |

## 8.2 TOPIC 2: MATERIALS AND STRUCTURES

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Elements, Mixtures and Compounds** | • distinguish between metals and non-metals<br>• identify characteristics of metals and non-metals<br>• suggest examples of metals and non-metals | • metals and non-metals<br>• characteristics of metals and non-metals<br>• examples of metals and non -metals | • collecting metals and non-metals<br>• listing metals and non-metals<br>• analysing characteristics of metals and non-metals<br>• discussing characteristics of metals and non- metals | • samples of metals and non-metals<br>• Recommended Textbooks |
| **Tools** | • modify domestic tools<br>• repair tools | • Tool , repair and modification | • Repairing tools that are in use<br>• Modifying domestic tools | |
| | • manipulate ICT to design tools | • Use of ICT to design | • Discussing how ICT can be used to design tools<br>• Demonstrating how to use ICT in tool designing<br>• Designing tools using ICT | • Print media<br>• Electronic media<br>• Tools |
| **Structures** | • make models of mechanical structures | • Models of mechanical structures | • Designing the models<br>• Collecting materials for making models<br>• Making models and exhibiting them at science fairs | • Electronic media<br>• Print media<br>• Model structures<br>• Materials for the model |

## 8.3 TOPIC 3: ENERGY AND FUELS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Energy** | • demonstrate that sound travels through air, solids and water<br>• illustrate different ways of producing sound | • Sound Energy<br>• Producing sound | • Demonstrating that sound travels in air, water and solids<br>• Watching a video on transmission of sound.<br>•<br>• Producing sound using various objects<br>• Playing musical instruments<br>• Simulating a telephone line<br>• Simulating electromagnetic radiation | • Buildings, empty rooms, mountain, wire/string<br>• tins<br>• Marimba<br>• Drums<br>• Guitar<br>• Piano<br>• Electronic media<br>• Print media |
| | • Explain electromagnetic radiation.<br>• identify appliances which generate electromagnetic radiation<br>• demonstrate an understanding of the uses of electromagnetic radiation. | • Electromagnetic radiation<br>• Uses of Electromagnetic radiation<br>• Dangers associated with microwaves | • Describing appliances that generate or use electromagnetic radiation<br>• Discussing how electromagnetic radiation are used<br>• Educational touring visiting a telecommunication plant | • Electromagnetic radiation based appliances such as cellphone, satellite, TVs, boosters<br>• Electronic media<br>• Print media<br>• Recommended textbooks |
| | • describe how energy is converted from one | • Energy conversion<br>- Energy Chains | • Illustrating how energy is converted from one form to | • Solar panel |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | form to another.<br>• Illustrate energy efficiency. | - Energy efficiency | the other<br>• Demonstrating energy efficiency in various appliances | • Battery<br>• Heater<br>• Stove<br>• Light bulb<br>• Wood<br>• Local Environment |
| **Fuel** | • explain the causes of veld fires and their effects<br>• suggest ways of controlling veld fires | • Impact of fuels on the environment<br>• Veld fires<br>- Causes of veld fires<br>- Effects of veld fires<br>• Prevention of veld fires<br>- fire guards | • discussing causes of veld fires<br>• watching videos on fires<br>• touring to observe veld fire effects<br>• discussing ways of preventing veld fires<br>• preparing fire guards around the school garden | • ICT tools<br>• Recommended textbooks<br>• The Local environment<br>• Print media |

## 8.4 TOPIC 4: ELECTRONICS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Electronics** | • State the functions of the components of an electronic device<br>• Make an electronic device of own choice | - Components of an electronic devices<br>-Transistor<br>-Diodes<br>-Inductors<br>-Resistors<br>-Power source | • Identifying components of an electronic device<br>• Discussing the functions of components<br>• Designing an electronic device | • Electronic devices<br>• ICT tools<br>• Recommended textbooks<br>• Resource persons(electronic engineer) |

## 8.5 TOPIC 5: FORCES AND MAGNETS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Gravity** | • deduce that there is a force attracting objects to fall<br>• recognise that gravitational force acts at a distance like magnets<br>• recognise that some mechanisms allow a small force to have a greater effect<br>• design and make a pulley system | • Gravitational force<br>• Force at a distance<br>• Application of gravitational force<br>• Force "magnifying" systems<br>• Pulleys<br>• Levers<br>• Gears | • Demonstrating how water flows by gravity<br>• Letting lifted objects drop<br>• Discussing why objects fall down<br>• Relating the falling of objects to a force<br>• Identifying situations where pulleys, levers and gears are used<br>• Demonstrating the use of pulleys, levers and gears<br>• Explaining how the lever, pulley or gear reduces effort<br>• Designing and making a pulley system | • Objects<br>• Strings<br>• Pulleys<br>• Levers<br>• Rods |

## 8.6 TOPIC 6: DESIGN AND TECHNOLOGY

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Design and Technology** | • construct functional tools of their own choice incorporating the elements and principles of design | • Elements of design<br>• Functional tools | • Sketching models<br>• Designing functional tools<br>• Exhibiting their finished models | • Print media<br>• Electronic media<br>• Recommended textbooks |

## 8.7 TOPIC 7: WATER

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Properties of Water** | • describe the components of water<br>• Write the chemical formula of water | • Water as a chemical compound<br>- Components of water Oxygen and Hydrogen<br>- Chemical formula | • Discussing the components of water<br>• Identifying the components of water<br>• Deriving the chemical formula of water<br>• Watching video on animations on water composition | • Water<br>• Recommended textbooks<br>• ICT tools<br>• Print media |
| **Sources of Water** | • explain why clear water is not always safe to drink<br>• filter dirty water to make it clean<br>• demonstrate how water can be made safe to drink<br><br>• Design a water purification appliance | • Methods of treating and purifying water<br>- Water with<br>Visible impurities<br>(a) Invisible impurities<br><br>• Water purification appliance | • Comparing water with visible impurities and that with invisible impurities<br>• Demonstrating the filtration of water using various methods<br>• Boiling water from unprotected source or adding simple chemicals to make it safe<br><br>• Designing the water purification model<br>• Collecting materials for making the water purification model<br>• Constructing water purification appliance | • Water treatment tablets<br>• Stove/burner<br>• Water with visible impurities<br>• Water with invisible impurities<br>• Cloth<br>• Sand filter<br>• Recommended textbooks<br>• Materials for making the water purification model<br>• Print media |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Water and the Environment** | • explain how people derive income from water related activities | • The economic value of water<br>- Fish farming<br>- Sporting<br>- Tourism | • Discussing the economic value of water such as fishing, sporting and tourism<br>• Designing and costing water related project such as fish farming and aquarium.<br>• Engage in water related projects to generate income. | • ICT tools<br>• Recommended textbooks<br>• Print media<br>• Resource person |

## 8.8 TOPIC 8: WEATHER AND CLIMATE

| KEY CONCEPTS | OBJECTIVES Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Weather and Climate** | • explain factors that influence climate | • Factors that influence climate<br>- distance from sea<br>- altitude (Height above sea level)<br>- vegetation<br>- trade winds<br>- latitude<br>- aspect | • Discussing factors that influence climate<br>• Brainstorming on influence of climate factors on human activities<br>• Educational touring different agro-ecological regions of the country<br>• Observing seasonal effects on the climate | • Local Environment<br>• Print media<br>• Recommended textbooks<br>• Electronic media<br>• Resource person |
| **Seasons** | • Identify impact of technology on seasonal activities.<br>• explain how technology can be applied to improve human seasonal activities | • Impact of technology on seasonal activities<br>- cloud seeding<br>- irrigation<br>- greenhouses<br>- weather forecasting for farming | • Stating technological application on seasonal activities<br>• Describing how technology is used to mitigate seasonal challenges<br>• Using technology to mitigate the seasonal challenges<br>• Educational touring to green houses, irrigation schemes, Agritex, local rainmakers | • Environment<br>• Electronic media<br>• Print media<br>• Resource person |
| **Weather and Climate Hazards** | • Identify technologies that affect weather and climate.<br>• relate the | • Emission of gases from burning of fuels in machinery, aerosols, thermal power stations and other industrial processes | • Discussing how various technologies produce gases that affect the weather and climate<br>• Educational touring industrial places that produce gas emissions<br>• Discussing resultant weather and | • Industrial machinery<br>• Thermal power stations<br>• Electronic media<br>• Print media<br>• Resource person |

| KEY CONCEPTS | OBJECTIVES Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| | effect of technology to weather and climate | • Effects of technology on weather and climate<br>- Ozone layer depletion<br>-Heat waves | climate hazards from the effects of technology. | |

## 8.9 TOPIC 9: SOIL, PLANTS AND ANIMALS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Soil** | • describe the weathering process<br>• explain the effects of weathering<br>• demonstrate the process of weathering | • Weathering<br>- Agents of weathering<br>- Expansion and contraction | • Discussing the weathering process<br>• Listing agents of weathering<br>• Observing the effects of weathering<br>• Experimenting on expansion and contraction of rocks<br>• Watching weathering videos<br>• Educational touring of the local area | • Print media<br>• Recommended textbooks<br>• Rocks<br>• Local Environment<br>• Fire<br>• Water<br>• Electronic media<br>• Top soil<br>• Sub soil<br>• Gravel |
| | • describe the cross section of the soil profile<br>• construct a miniature soil profile | • Soil profile<br>- Horizons of soil profile | • Identifying the horizons of the soil profile<br>• Discussing the soil profile<br>• Designing a model of the soil profile | |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Plants** | • Describe the process of photosynthesis<br>• test a leaf for starch<br>• state the uses of plants<br>• classify plants according to their uses<br>• describe the aesthetic nature of plants<br>• Plant trees in the school woodlot and orchard make compost | • Photosynthesis<br>- Conditions necessary for photosynthesis<br>- Word equation<br>- Test for starch<br><br>• Uses of plants<br>- medicinal<br>- ecological<br>- socio-economic<br><br>- aesthetic<br>- compost making | • Observing plant leaves for relevant characteristics<br>• Describing photosynthesis<br>• Completing the equation for photosynthesis<br>• Carrying out an experiment to show the presence of starch<br>• Discussing the uses of plants and their products<br>• Identifying plant medicines<br>• Stating the beauty aspects of plants<br>• Making flower beds, bouquet<br>• Preparing flowers for sale<br>• Planting and nurturing trees Making a compost | • Magnifying lenses<br>• Slides<br>• Straws<br>• Iodine solution<br>• Leaves<br>• Alcohol<br>• Containers<br>• White surface Burner<br>• Flowers<br>• Seeds<br>• Plantations<br>• Plants in the environment<br>• Electronic media<br>• Print media<br>• Recommended textbooks<br>• Workshop tools<br>• Plant matter<br>• Garden tools<br>• Animal waste |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Animals** | • Identify uses of animal droppings<br>• Discuss the production and use of biogas | • Uses of animal waste<br>-Organic Manure<br>-Coating<br>-winnowing<br>- baskets and floors<br>-Source of heat energy<br>- Softening hides<br>- Biogas production | • Collecting animal droppings from the environment<br>• Discussing uses of animal droppings<br>• Collecting equipment for making biogas plant model<br>• Setting up the biogas plant | • Print media<br>• Electronic media<br>• Sanctuary<br>• Print media<br>• Animal realia<br>• Knives<br>• Containers<br>• Pipes<br>• Organic waste from animals<br>• Local Environment Garden tools<br>• Drum |

## 8.10 TOPIC 10: LANDFORMS AND MAPS

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Landforms and Maps** | • interpret landform features on a map through contour lines<br>• deduce required direction on a map from a given point<br>• Measure lengths on maps and using them to calculate actual distances | • Map reading<br>-Contour lines<br>-Direction<br>-Scale<br>– convectional symbols | • Listing the identified features on a given map<br>• Plotting direction on a map<br>• Calculating actual distances from maps<br>• Drawing latitudinal and longitudinal lines on a globe | • Maps<br>• Mathematical set<br>• Calculator<br>• Electronic media<br>• Recommended textbooks |
| | • locate a place using lines of longitude and latitude<br>• recognize grid references as actual partitions of the map | • Grid reference system<br>- Longitudes<br>- Latitudes<br>- Four figure grid reference | • Reading the four figure grid reference and interpreting the map<br>• Finding different physical positions through four figure grid reference from given points | • Globes<br>• Print media |
| | • describe a suitable scale to construct a map model<br>• Construct a map model | • Map models | • Measuring requisite distance to construct a map model<br>• Making map models using locally available materials | • Kaylite<br>• Cardboard box<br>• Ground<br>• Clay<br>• Grass<br>• wire |

## 8.11 TOPIC 11: SUSTAINABLE RESOURCE MANAGEMENT

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Sustainable Resource Management** | • state the uses of the various natural resources<br>• design and make artefacts made from natural resources<br>• recognise the economic value of natural resources<br>• justify the importance of value addition and beneficiation<br>• Suggest methods employed to add value to natural resources<br>• demonstrate an understanding of treaties governing the exploitation of natural resources | • Aesthetic value –<br>-Jewellery<br>-Accessories on artefacts<br>-Landscaping<br>- Interior décor<br>• Economic value<br>-Employment<br>-Foreign currency<br>- Social-cultural value<br>-food<br>-totems<br>-ceremonies and rituals<br>- Value addition and beneficiation<br>- Tanning<br>- Smelting<br>- Polishing<br>- Refining<br>- Carpentry<br>- Welding<br>- Alloying | • Discussing uses of natural resources<br>• Identifying various artefacts made from natural resources<br>• Designing and making artefacts made from natural resources<br>• Viewing videos on manufacturing of various artefacts from natural resources<br>• Calculating the economic value for a given natural resource<br>• Educational touring of natural resources<br>• Evaluating the importance of treaties on resource management. | • Minerals<br>• Forest<br>• Game parks<br>• Electronic media<br>• UN treaties<br>• Statutory Instruments |

| KEY CONCEPTS | OBJECTIVES<br>Learners should be able to: | CONTENT (ATTITUDES, SKILLS AND KNOWLEDGE) | SUGGESTED NOTES AND ACTIVITIES | SUGGESTED RESOURCES |
|---|---|---|---|---|
| **Uses of waste** | • Identify economical uses of waste<br>• Explain the effects of waste on the environment | • Production of manure, animal feeds, (molasses) bio gas and solid fuel<br>• <u>Impacts of waste on the environment</u><br>-Diseases<br>- Pollution<br>- climate change<br>-Eutrophication | • Discuss the uses of waste<br>• Demonstrate how to separate waste<br>• Discuss effects of waste on the environment<br>• Carry out awareness raising campaigns on waste management | |

# 9.0 ASSESSMENT

## (a) ASSESSMENT OBJECTIVES

By the end of the course candidates will be expected to:

- identify tools and materials used in science and technology
- select, use and take care of scientific and technological tools and materials in the design and construction of artefacts
- apply indigenous scientific and technological concepts and skills for environmental sustainability
- use local materials to design and modify some technological device
- relate how people, environment and economic issues influence and are influenced by science and technology
- Anticipate consequences of the outcomes of scientific and technological processes
- collect and record and analyse data and information in an appropriate way
- demonstrate enterprise skills that are relevant to their market, recognising constraints of time, cost and accessibility of resources
- demonstrate an appreciation of the role of designers, craftsmen, scientists and technologists in industry in the society
- explain the scientific relationship and interdependence between people and their environment
- Use ICT tools to develop innovations
- Make reasoned arguments from given scientific data and information

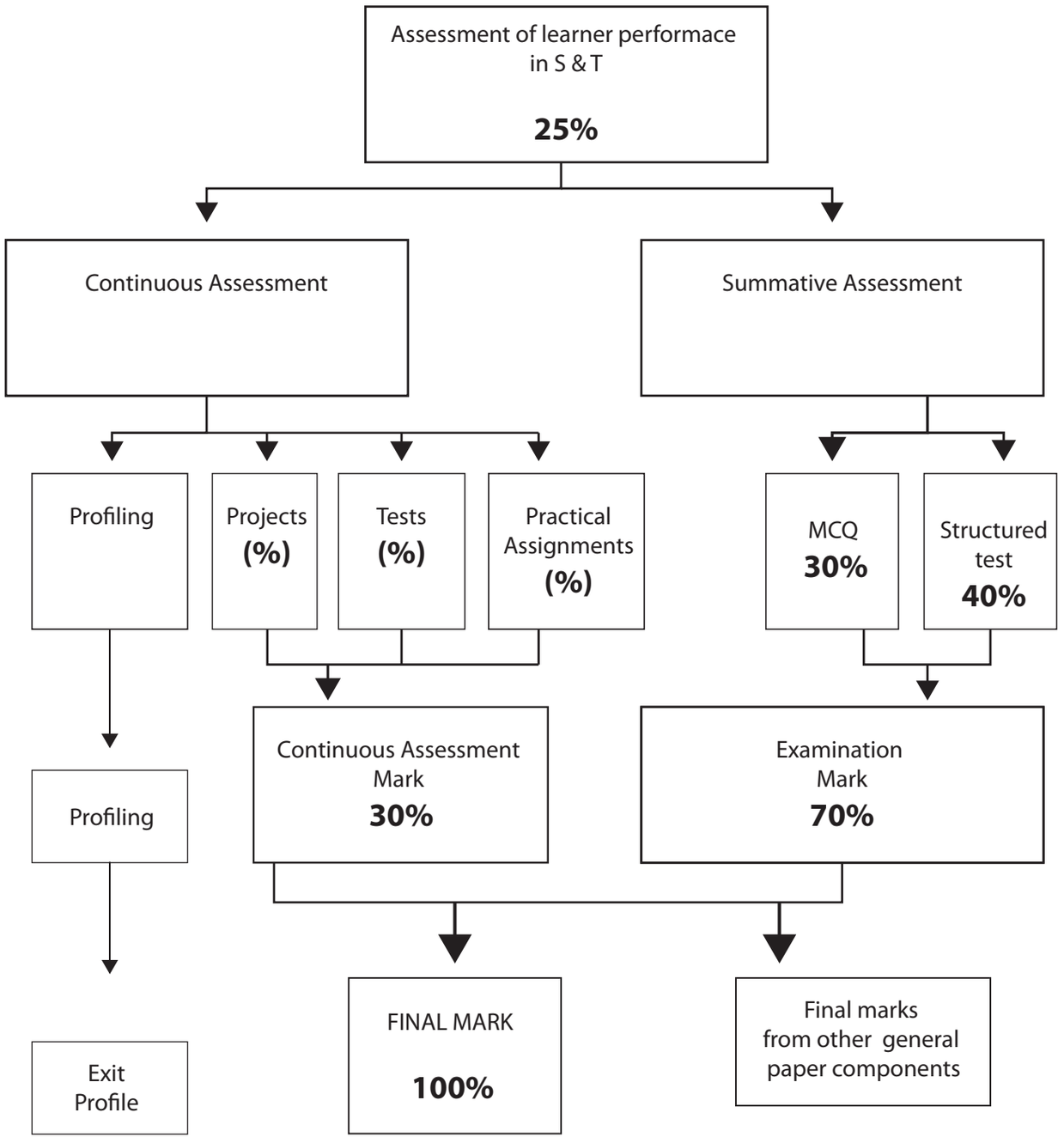
## (b) Scheme of Assessment

The syllabus scheme of assessment is grounded on the principle of inclusivity. Arrangements, accommodations and modifications must be visible in both continuous and summative assessments to enable candidates with special needs to access assessments.

## ASSESSMENT

The Science and Technology Syllabus will be assessed through a separate section in the general paper and shall constitute 25%. The syllabus embraces both Continuous and summative assessments.

# ASSESSMENT MODEL




## CONTINUOUS ASSESSMENT (30%)

Profiling, Test and Practical Assignments are administered and collated from Grade Three through to Grade Seven. Projects, through research and designs start at Grade Five. All the marks contribute to the final mark. All the assessment instruments are developed at district level and standardised nationally.

## SUMMATIVE ASSESSMENT (70%)

The setting and designing of test items in S & T is guided and informed by the skills weighting chart and the specification grid.

## Skills Weighting Chart

| | |
|---|---|
| Knowledge and Comprehension | 40% |
| Application | 30% |
| Deductive Reasoning(analysis, evaluation and creative) | 30% |

| Topic | Skill 1 40% | Skill 2 30% | Skill 3 30% | Total 100% |
|---|---|---|---|---|
| Healthy and Safety | 2 | 2 | 2 | 6 |
| Water | 2 | 2 | 2 | 6 |
| Weather and Climate | 2 | 2 | 2 | 6 |
| Materials and Structures | 2 | 1 | 1 | 4 |
| Forces and Magnets | 1 | 1 | 1 | 3 |
| Design and Technology | 2 | 1 | 1 | 4 |
| Energy and Fuels | 2 | 1 | 1 | 4 |
| Electronics | 1 | 1 | 1 | 3 |
| Soil, Plants and Animals | 2 | 2 | 2 | 6 |
| Landforms and Maps | 2 | 1 | 1 | 4 |
| Sustainable Resource Management | 2 | 1 | 1 | 4 |
| TOTAL | 20 | 15 | 15 | 50 |

## DESCRIPTION OF THE SUMMATIVE ASSESSMENT STRUCTURE

The Summative assessment comprises two components as follows:

**Paper 1**.
1hr 30 minutes (50 marks) 30%
There are 50 multiple-choice questions and candidates are required to answer all.

**Paper 2**.
1hr 30minutes (50 marks) 40%
Paper 2 comprises of Section A and B. Section A with approximately 30 questions is compulsory and carries 30 Marks. Section B is a choice section which carries 20 marks. A candidate is expected to choose 4 out of 6 questions. Each question carries 5 marks.