THE REVOLUTIONARY GOVERNMENT OF ZANZIBAR

MINISTRY OF EDUCATION AND VOCATIONAL TRAINING

SCIENCE

SYLLABUS FOR PRIMARY SCHOOLS

STANDARD V – VI

2009

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INTRODUCTION

This is the syllabus for Science which is a new subject. In the 1998 curriculum Science topics were taught under Sayansi Subject which was taught in Kiswahili medium from Standard IV to VII. This introduction consists of explanations on the background to the improved curriculum (2009) and the importance of Science Subject in the curriculum. This is followed by lists of the Goals of Education in Zanzibar and the Objectives of Primary Education. Then there are lists of general subject competences and objectives followed by explanations on the selection of topics/content. Finally, there are explanations on the contents of the teaching/learning tables.

Reasons for the Development of the New Primary Education Curriculum

In 2008/09 the Revolutionary Government of Zanzibar undertook the revision, condensation and improvement of the curriculum for primary education. Its goal was to make the curriculum conform with the focus of Zanzibar Education Policy (2006). The policy seeks to improve the unsatisfactory structure, quality and relevance of primary education. Furthermore, it makes pre-primary education part of basic education. Similarly, it reduces the primary education cycle from seven (7) to six (6) years. Finally provides that English shall be use as a medium of instruction for some of the subject in Standard V and VI

Other reasons for the revision, condensation and improvement of the curriculum were as follows:

- Government response to global trends regarding social, scientific and technological changes /advancements.
- Government response to public pressure for expanding access and promoting the quality of education.
- Government response to the findings of the 2008 Needs Assessment Survey for Primary Curriculum Review.

The 2008 survey pointed out the following weakness in the 1998 curriculum:

- Failure of primary education curriculum to promote communication skills and creative thinking.
- Inadequate focus on the needs of the disadvantaged learners/pupils, cross-cutting issues, life-skills and globalization.
- The predominance of teacher-centred approaches (instead of learner-centred ones).
- The overuse of theoretical teaching/learning (instead of applying interactive or participatory techniques).
- Minimal assignments to pupils geared to English usage and the teaching/learning of English language.

In response to those challenges the government made a number of basic decisions. For example, it directed that more subjects be taught in English at upper primary level (Standard V – VI). The curriculum of Science subject was designed and developed as a result of that decision. It was also decided to provide competence based education in order to enable the pupils develop basic skills and attitudes needed by the society. More over, the government Thirdly, it was resolved that the primary education curriculum be linked carefully with both pre-primary and secondary curricula. This caution aimed at avoiding repetition or duplication of subject content across levels of the education system.

Importance of Science Subject

Science enables pupils to acquire useful knowledge, skills and attitudes through inquiry and investigation. In the process, their intellectual and practical abilities are developed. Thus, they are enabled to manage the changes brought by modern science and technology.

When Science is taught appropriately, pupils apply the acquired knowledge, skills and attitudes to for example, investigate and appreciate the relationship between body health and nutrition, machines and work, soil fertility and local productivity. Furthermore, science enables pupils to realize that problems can be solved. It enables them to search for information, try-out new ideas and become creative.

Goals of Education in Zanzibar

The goals of education are:

1. To promote and sustain cultural values, attitudes, customs of the peoples of Zanzibar/Tanzania to enhance unity and cultural identity.
2. To promote the acquisition and appropriate use of all forms of knowledge and skills for the full development of the human personality and quality life improvement of the society.
3. To enable every citizen to understand and respect the fundamentals of the National Constitution as well as the enshrined human and civic rights, obligations and responsibilities.
4. To promote and enable rational use, management and conservation of the environment.
5. To instill love and respect for work, self and wage employment, self work discipline and best performance.
6. To inculcate principles and practices of tolerance, peace, love, justice, understanding, Human Rights and fundamental freedoms, national unity and international cooperation as enshrined in the international basic charters.

General Objectives of Primary Education in Zanzibar

The General Objectives of Primary Education are as follows:

1. To enable all children of school going age develop and sustain strong foundations of skills in reading, writing, counting, creativity and communication in Kiswahili, English and other foreign languages.
2. To enable learners understand the application of science and technology and recognize its contribution to national and international development.

3. To lay, develop and sustain in learners strong foundations of thinking skills and inquisitiveness in order to understand their environment and social relationships.
4. To enable the learners understand how past events influence present events as well as future ones.
5. To discover learner's talents from their early age in order to sustain and develop them.
6. To lay strong foundations of skills of observation, thinking and co-operation in solving problems which hinder their personal development and the development of their society.
7. To prepare learners for joining secondary education.
8. To enable the learners develop mental abilities and interest in continuous search for knowledge.
9. To familiarize learners with productive vocational activities and promote their readiness for fulfillment of their social responsibilities.
10. To enable learners recognize and uphold national unity as well as the cooperation between their nation and other nations and people.
11. To enable the learners develop acceptable moral, cultural and ideological values in order to promote patriotism and enable them to understand their country's historical, political and social situation.
12. To develop and sustain learners' self – discipline, observance of gender equality and maintenance of personal and other peoples' health.
13. To enable the learners develop habits of smartness, cleanliness and proper use of their leisure time.
14. To promote learners' love for their environment and interest in environmental conservation.

General Competences in Science

This curriculum is competence-based. Therefore, after studying Science up to Standard VI the pupils shall demonstrate the ability to:

1. Maintain body health and explain the human body system.
2. Identify and explain the characteristics of living and non-living things.

3. Identify the causes of hazards and protect themselves from those hazards.
4. Identify factors of environmental pollution and take steps to protect it.
5. Identify and apply principles, laws and knowledge of science to solve daily problems.
6. Make and apply simple machines for simplification of work and generation of energy.
7. Search knowledge and science skills from libraries and ICT facilities.

General Objectives of Science

Science subject is taught in primary schools in order to enable the pupils to:

1. Understand the requirements of body health and body systems.
2. Understand the characteristics of living and non-living things.
3. Develop habits of applying skills, knowledge, laws and concepts of science in solving daily life problems.
4. Develop habits of using library and ICT facilities to acquire scientific knowledge and skills.
5. Understand the applications of machines for personal and community development.

Selection of Topics

This syllabus is presented in a sequence of science topics, each with its corresponding sub-topics. Also included are topics on cross-cutting issues such as HIV and AIDS as well as the environment. These are arranged such that the knowledge and skills acquired in Standard V form the basis for learning other aspects of the same topics in Standard VI. Teachers are advised to teach related topics in the same order they appear in the syllabus. Below follow the main topics covered in the syllabus and their sequence:

NO	MAIN TOPICS	STANDARD V	STANDARD VI
1.	Body Health.	√	√
2.	Food and Nutrition.	√	√
3.	Body systems.	√	√
4.	Animals.	√	√
5.	Plants.	√	√
6.	Matter.	√	√
7.	Water.	√	√
8.	Air.	√	√
9.	Soil.	√	√
10.	Light.	√	√
11.	Sound.	√	-
12.	Heat.	√	√
13.	Electricity.	√	√
14.	Magnets.	√	√
15.	Machines.	√	√

Structure of the Syllabus

This syllabus consists of two main sections the preliminary matters and the teaching/learning tables. Below follows an explanation of each section:

Preliminary matters

This section is consists of the cover page, title page, issuing authority page and table of contents. Then, there is information on the background to the 2009 curriculum, Goals of Education in Zanzibar and the Objectives of Primary Education. Other matters include the general competences in Science subject, general objectives of Science subject and explanations on the components of the teaching/learning tables.

The Teaching/Learning Tables

This section of the syllabus is divided into two main parts representing Standard V and VI. The syllabus for each class is preceded by lists of class level competences and objectives. These are followed by a table composed of six sub-headings, namely: topics/sub-topics, specific objectives, teaching/learning techniques, materials/aids, assessment and periods. Below follow explanations of the components mentioned above:

Topics and sub-topics

The main topics reflect the subject content to be taught/learnt. Under each main topic follow its sub-topics. These determine the scope of coverage of the main topic.

Specific Objectives

These are statements about knowledge, skills and attitude that learners should achieve after being taught/learnint the given sub-topic. For each specific objective there is corresponding content in the form of a sub-topic. Specific objectives suggest the scope of the content to be taught/learnt at each level. They also guide the teacher in the development of lesson objectives as well as in the teaching/learning process. Specific objectives focus each individual pupils. Therefore, sign language and hearing aids shall be applied for pupils with hearing impairmen. Tactile materials, materials in Braille notation and the Braille machine shall be applied for pupils with visual impairment. The teaching/learning process for other categories of pupils with special needs shall follow current policies and procedures as well as appropriate techniques and materials/aids.

Teaching/Learning Techniques

This column consists of some recommendable teaching/learning techniques. Participatory or learner – centred techniques are proposed because they promote interaction and activity – based teaching and learning. Therefore, they enable the pupils to construct meaning from what they learn. Teachers are encouraged to read extensively materials on participatory or learner – centred techniques. This will enable them to select the most suitable techniques to apply when teaching.

Materials/aids

These are suggestions of teaching materials/aids for given topics/sub-topics. Textbooks and teacher's guides are among the essential textual materials. The teacher is encouraged to apply other suitable resources at his/her disposal. Moreover, it is advisable for teachers to improvise or make materials/aids for effective teaching/learning of the given topic/subtopic.

Assessment

In this column are given suggestions about assessment of pupils' achievement of teaching/learning objectives. Assessment should be done on all instructional objectives. Varieties of ways of assessment should be applied and given daily, weekly, monthly, at the end of the term and at the end of the academic year.

Periods

This column shows the estimated number of periods for teaching a given topic. They are calculated on the basis of the number of days in the academic year (224) divided by the number of days per week and multiplied by the number of periods per week. The total number of periods is further divided by the number of sub-topics in the syllabus to get the average number of periods per sub-topic. Eight (8) periods have been reserved for examinations. However, the teacher may slightly adjust the estimated number of periods for a given topic or sub-topic depending on the needs of his/her class.

Science has been allocated four (4) periods per week. From Monday to Thursday, during the morning sessions, the duration of each period shall be 40 minutes. It shall be 35 minutes in the afternoon sessions. On Fridays the duration of each period shall be 35 minutes only. The allocated time should be utilized fully. Lost instructional time should be compensated through the school's local arrangements.

PRINCIPAL SECRETARY
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ZANZIBAR

STANDARD FIVE

COMPETENCES

By the end of Standard V the pupils shall demonstrate the ability to:-

1. Explain the causes of STIs, HIV/ AIDS and protect themselves against those infections.
2. Investigate three states of water and apply them in daily life.
3. Identify the characteristics of animals and plants and explain their interdependence.
4. Identify and explain the hazards of water and electricity and take precautions against them.
5. Identify the causes of air and water pollution and take measures to control them.
6. Identify and explain the nutritional needs of different groups of people.
7. Show the properties of forms of energy and apply them in daily life.
8. Identify and explain the functions of human body systems.
9. Identify, construct and use simple machines to simplify work.
10. Use library and ICT facilities in order to acquire scientific knowledge and skills.

OBJECTIVES

The objectives of teaching Science subject in Standard V are to enable the pupils to:-

1. Describe the causes of STIs, HIV and AIDS and protect themselves against those infections.
2. Describe the nutritional needs of different groups of people and serve them appropriately.
3. Acquire knowledge of the three states of water, their characteristics and their applications.
4. Show an understanding of the impact and protection against hazards caused by water and electricity.
5. Show knowledge on the characteristics of animals and plants and their interdependence.
6. Describe the functions of human body systems and maintain them properly.
7. Describe the properties of forms of energy and their applications in daily life.
8. Use library and ICT facilities to get scientific knowledge and skills.
9. Describe the applications of simple machines for personal and community development.

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
1. BODY HEALTH a) Sexually Transmitted Infections (ST Is)	The pupil should be able to: (i) Mention different sexually transmitted infections.	By using brainstorming technique, the teacher to guide the pupils to name different sexually transmitted infections.	1. Chart of sexually transmitted infections. 2. Chart of sexually transmitted infections in Braille notation.	Can the pupil mention different sexually transmitted infections?	6
	(ii) Identify causes mode of transmission and symptoms of STIs.	1. By using the group discussion technique, the teacher to guide the pupils to identify different causes of STIs. 2. By using the group discussion technique, the teacher to guide the pupils to discuss the mode and symptoms of each of the named STIs.	1. Chart showing causes and symptoms of STIs. 2. Tactile chart showing causes mode of transmission and symptoms of STIs. 3. Video cassettes on STIs of transmission	Can the pupil 1. Identify causes of STIs? 2. Identify the mode of transmission symptoms of STIs?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) Explain methods of prevention of STIs.	1. The teacher to guide pupils to read on pamphletes and brochures on methods of prevention of STIs. 2. By using the group discussion technique the teacher to guide the pupils to discuss methods of prevention of STIs.	1. Pamphletes and brochures. 2. Pamphletes and brochure in Braille notation.	Can the pupil explain the methods of prevention of STIs?	
b) HIV and AIDS.	The pupil should be able to: (i) Explain cause, mode of transmission and symptoms of HIV and AIDS.	1.The teacher to guide pupils to read on pamphletes and brochures on causes, mode of transmission and symptoms of AIDS. 2. By using the group discussion technique, the teacher to guide the pupils to discuss causes mode of transmission and symptoms of AIDS.	1. Pamphletes and brochures on HIV and AIDS. 2. Pamphletes and brochures on HIV and AIDS in Braille notation. 3. Video cassettes on HIV/AIDS	Can the pupil: 1. Explain the causes of HIV and AIDS? 2. Explain mode of transmission of HIV? 3. Explain the symptoms of HIV and AIDS?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Mention methods of prevention.	By using the group discussion technique, the teacher to guide the pupils to discuss the methods of prevention of HIV infections.	1. Brochures. 2. Brochures in Braille notation.	Can the pupil mention methods of prevention of HIV and AIDS?	
c) Care for People Living with HIV and AIDS.	The pupil should be able to: (i) Explain how to care for the people living with HIV/AIDS.	By using the guest speaker technique, the teacher to guide the pupils to explain how to care for the people living with HIV and AIDS.	1. Pamphlets and brochures on caring for PLWA. 2. Video cassettes and CD/DVD concerning people living with HIV/AIDS. 3. Pamphlets and brochures on caring for PLWA in Braille notation.	Can the pupil explain how to care for people living with HIV and AIDS?	4
	(ii) Explain the precautions to be taken when caring for people living with HIV and AIDS.	By using guest speaker technique, the teacher to guide pupils to explain the precautions to be taken when caring for people living with HIV and AIDS.	1. Charts showing precautions to be taken when caring for people living with HIV and AIDS. 2. Tactile charts showing precautions to be taken when caring for people living with HIV and AIDS.	Can the pupil explain the precautions to be taken for caring people living with HIV and AIDS?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
2. FOOD AND NUTRITION a) Nutrition for Children.	The pupil should be able to identify nutritional needs for the children.	By using the brain storming technique, the teacher to guide the pupils to identify the nutritional needs for children.	1. Chart of types of food needed by children (protein, carbohydrate, vitamin, and fats). 2. Tactile charts on types of foods needed by children.	Can the pupil identify nutritional needs for children?	4
b) Nutrition for the Elderly and the Sick.	The pupil should be able to: (i) Identify nutritional needs for elderly.	By using the group discussion technique, the teacher to guide the pupils to identify the nutritional needs for elderly.	1. Chart of foods containing vitamins, protein and carbohydrates. 2. Tactile charts of foods containing vitamins, protein and carbohydrates.	Can the pupil identify nutritional needs for elderly?	4
	(ii) Identify nutritional needs for the sick.	1. By using the group discussion technique, the teacher to guide the pupils to identify the nutritional needs for the sick. 2. The teacher to guide the pupils to conduct library study in order to identify the nutritional needs for the sick.	1. Books concerning nutritional needs for the sick. 2. Books concerning nutritional needs for the sick in Braille notation.	Can the pupil identify nutritional needs for the sick?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
3. BODY SYSTEMS a) Digestive System.	The pupil should be able to: (i) Identify different parts of digestive system.	By using the short lecture technique, the teacher to guide the pupils to identify different parts of the digestive system.	1. Chart and model of the digestive system. 2. Tactile chart of the digestive system.	Can the pupil identify different parts of the digestive system?	6
	(ii) Draw and label the digestive system.	By using the drawing technique, the teacher to guide the pupils to draw and label the human digestive system.	1. Chart and model of the digestive system. 2. Tactile chart of the digestive system.	Can the pupil draw and label the digestive system?	
	(iii) State the functions of various parts of the digestive system.	1. The teacher to guide pupils to conduct library study to collect facts about the functions of various parts of the digestive system. 2. By using the group discussion technique, the teacher to guide the pupils to state the functions of various parts of the digestive system.	1. Chart and model of the digestive system. 2. Tactile chart of the digestive system. 3. Books concerning digestive system. 4. Books concerning digestive system in Braille notation. 5. Dissected rat to show the digestive system of a mammal.	Can the pupil state the functions of various parts of the digestive system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Respiratory System.	The pupil should be able to: (i) Identify different parts of the respiratory system.	By using the short lecture technique, the teacher to guide the pupils to identify different parts of respiratory system.	1. Chart showing different parts of the respiratory system. 2. Tactile chart showing different parts of the respiratory system.	Can the pupil identify different parts of respiratory system?	6
	(ii) Draw and label the respiratory system.	By using the drawing technique, the teacher to guide the pupils to draw and label respiratory system.	1. Chart showing different parts of the respiratory system. 2. Tactile chart showing different parts of the respiratory system.	Can the pupil draw and label the respiratory system?	
	(iii) State the functions of various parts of the respiratory system.	1. The teacher to guide pupils to conduct library study to collect facts about the functions of various parts of the respiratory system.	1. Chart showing different parts of the respiratory system. 2. Tactile chart showing different parts of the respiratory system.	Can the pupil state the functions of various parts of respiratory system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
		2. By using the group discussion technique, the teacher to guide the pupils to state the functions of various parts of the respiratory system.	3. Books concerning respiratory system. 4. Books concerning respiratory system in Braille notation.		
c) Skeletal System.	The pupil should be able to: (i) Identify different parts of the skeletal system.	By using the short lecture technique, the teacher to guide the pupils to identify different parts of the skeletal system.	1. A labelled chart of the skeletal system. 2. Model of human skeleton. 3. A labelled tactile chart of the skeletal system.	Can the pupil identify different parts of skeletal system?	4
	(ii) Draw and label the skeletal system.	By using the drawing technique, the teacher to guide the pupils to draw and label skeletal system.	1. A labelled chart of skeletal system. 2. Model of human skeleton. 3. A labelled tactile chart of skeletal system.	Can the pupil draw and label the skeletal system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) State the functions of skeletal system.	The teacher to guide the pupils to conduct library study in order to find information on the functions of various parts of skeletal system.	1. A labelled chart of skeletal system. 2. Model of human skeleton. 3. A labelled tactile chart of human skeletal system. 4. Books concerning skeletal system. 5. Books concering skeletal system in Braille notation.	Can the pupil state the functions of skeletal system?	
d) Blood Circulatory System.	The pupil should be able to: (i) Explain the components of blood.	By using the short lecture technique, the teacher to guide the pupils to explain the components of blood.	1. A labelled chart of blood components. 2. A labelled tactile chart of blood components.	Can the pupil explain the components of blood?	6

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) State the functions of blood.	By using the brainstorming technique, the teacher to guide the pupils to state the functions of blood.	1. A labelled chart of blood components. 2. A labelled tactile chart of blood components.	Can the pupil state the functions of blood?	
	(iii) Explain the blood circulatory system.	The teacher to guide the pupils to read text books to explain the blood circulatory system.	1. A labelled chart of the blood circulatory system. 2. A labelled tactile chart of the blood circulatory system. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain the blood circulatory system?	
	(iv) Draw and label blood circulatory system.	By using the drawing technique, the teacher to guide the pupils to draw and label blood circulatory system.	1. Blood circulatory system chart. 2. Tactile chart of the blood circulatory system.	Can the pupil draw and label blood circulatory system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
4. ANIMALS a) Herbivorous Animals	The pupil should be able to: (i) Explain the meaning of herbivorous animals.	1. By using the reading technique, the teacher to guide the pupils to read textbooks to explain the meaning of herbivorous animals. 2. By using out-door activities, the teacher to guide the pupils to observe herbivorous animals in the field.	1. Pictures and drawings of some herbivorous animals. 2. Tactile pictures and drawings of some herbivorous animals. 3. Textbook. 4. Textbook in Braille notation. 5. Actual herbivorous animals	Can the pupil explain the meaning of herbivorous animals?	4
.	(ii) Mention some herbivorous animals	By using the brain storming technique, the teacher to guide the pupils to mention some of the herbivorous animals.	. 1. Pictures and drawings of some herbivorous animals. 2. Tactile pictures and drawings of some herbivorous animals. 3. Actual herbivorous animals	Can the pupil mention some herbivorous animals?	
	.(iii) Draw the pictures of herbivorous animals	By using the drawing technique, the teacher to guide the pupils to draw some of the herbivorous animals.	.1. Pictures/drawings of some herbivorous animals (e.g. cow, goat, donkey.) 2. Tactile pictures/drawings of some herbivorous animals	Can the pupil draw pictures of herbivorous animals?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Carnivorous Animals .	. The pupil should be able to: (i) Explain the meaning of carnivorous animals	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of carnivorous animals.	. 1. Pictures and drawings of some carnivorous animals. 2. Tactile pictures and drawings of some carnivorous animals.	Can the pupil explain the meaning of carnivorous animals?	4
	. (ii) Mention some carnivorous animals.	By using the brainstorming technique, the teacher to guide the pupils to mention some of the carnivorous animals.	1. Pictures and drawings of some carnivorous animals. 2. Tactile pictures and drawing of some carnivorous animals. 3. Actual carnivorous animals.	Can the pupil mention some carnivorous animals?	
	(iii) Draw the pictures of carnivorous animals	By using the drawing technique, the teacher to guide the pupils to draw some of the carnivorous animals.	1. Picture and drawings of some carnivorous animals. 2. Tactile pictures and drawings of some carnivorous animals.	Can the pupil draw pictures of carnivorous animals?	
c) Omnivorous Animals.	. The pupil should be able to: (i) Explain the meaning of omnivorous animals.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of omnivorous animals.	1. Pictures and drawings of some omnivorous animals. 2. Tactile pictures and drawings of some omnivorous animals.	Can the pupil explain the meaning of omnivorous animals?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Mention some omnivorous animals	By using the group discussion technique, the teacher to guide the pupils to mention some of the omnivorous animals	1. Pictures and drawing of some omnivorous animals. 2. Tactile pictures and drawings of some omnivorous animals. 3. Actual omnivorous animals 4. Video cassettes of animals	Can the pupil mention some omnivorous animals?	
	.(iii) Draw the pictures of omnivorous animals.	. By using the drawing technique, the teacher to guide the pupils to draw the omnivorous animals.	1. Pictures and drawings of some omnivorous animals. 2. Tactile pictures and drawings of some omnivorous animals.	Can the pupil draw pictures of omnivorous animals?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
d) Care for the animal	The pupil should be able to identify the basic animal needs for their survival and welfare.	1. By using the brain storming technique the teacher to guide the pupils to mention the basic animal need. 2. By using field visit technique, pupils to visit a veterinary centre to observe medical care given to animals.	1. Charts on basic needs for animals welfare. 2. Charts in Braille notation. 3. Pampheletes on animal's needs. 4. Video cassettes/CDs/DVD on animal's needs.	Can the pupils identify the animal's basic needs ?	4
5. PLANTS a) Flower Structure.	The pupils should be able to: (i) Identify different parts of a flower.	By using the observation technique, the teacher to guide the pupils to identify different parts of a flower .	1. Actual flowers(varieties) 2. Drawings showing parts of flowers. 3. Tactile drawings showing parts of flowers.	Can the pupil identify different parts of a flower?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Explain the functions of each part of the flower.	1. The teacher to guide pupils to read textbooks in orders get information on the function of each part of a flower. 2. By using the group discussion technique, the teacher to guide the pupils to explain the functions of each part of the flower.	1. Actual Flower. 2. Drawings showing parts of a flower. 3.Tactile drawings showing parts of a flower. 4. Textbook. 5. Textbook in Braille notation.	Can the pupil explain the functions of each part of the flower?	
	(iii) Draw and label parts of the flower.	By using the drawing technique, the teacher to guide the pupils to draw and label the parts of a flower.	1. Drawings showing parts of the flower. 2. Tactile drawings showings parts of the flower.	Can the pupil draw and label the parts of the flower?	
b) Pollination.	The pupil should be able to: (i) Explain the meaning of pollination.	By using short lecture technique, the teacher to guide the pupils to explain the meaning of pollination.	1. Chart showing the process of pollination. 2. Tactile chart showing the process of pollination.	Can the pupil explain the meaning of pollination?	6

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Identify the types of pollination.	1. By using the library reading technique , the teacher to guide pupils to conduct library reading on types if pollination. 2. By using the brainstorming technique, the teacher to guide the pupils to identify types of pollination.	1. Charts of different types of pollination. 2. Tactile charts of different types of pollination. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil identify the types of pollination?	
	(iii) Explain the agents of pollination.	1.By using the group discussion technique, the teacher to guide the pupils to discuss the agents of pollination. 2.By using an outdoor activity, the teacher to guide the pupils to shake different flowers so as to observe how is pollination taking place.	1. Charts showing some agents of pollination. 2. Tactile charts showing some agents of pollination. 3. Variety of flowers on field.	Can the pupil explain the agents of pollination?	
	(iv) Explain the importance of pollination.	The teacher to guide the pupils read text book in order to explain the importance of pollination.	1. Charts showing the process of pollination. 2. Tactile charts showing the process of pollination. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain the importance of pollination?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
c) Fertilization.	The pupil should be able to:- (i) Explain the meaning of fertilization.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of fertilization.	1. Textbook. 2. Textbook in Braille notation.	Can the pupil explain the meaning of fertilization?	4
	(ii) Explain the process of fertilization.	1. The teacher to guide pupils to conduct library study in order to find facts about the process of fertilization. 2. By using the group discussion technique, the teacher to guide the pupils to explain the process of fertilization.	1. Charts and diagrams showing the process of fertilization. 2. Tactile charts and diagrams showing the process of fertilization. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain the process of fertilization?	
	(iii) Explain the importance of fertilization.	By using the group discussion technique, the teacher to guide the pupils to explain the importance of fertilization.	1. Charts and diagrams showing the importance of fertilization. 2. Tactile charts and diagrams showing the importance of fertilization.	Can the pupil explain the importance of fertilization?	
d) Interdependence of Animals and Plants.	The pupil should be able to explain the interdependence of animals and plants.	By using the group discussion technique, the teacher to guide the pupils to explain the interdependence of animals and plants.	1. Charts showing interdependence of animals and plants. 2. Tactile charts showing interdependence of animals and plants.	Can the pupil explain the interdependence of animals and plants?	3

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
6. MATTER a) States of Matter.	The pupil should be able to:- (i) Explain the meaning of matter.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of matter.	1. Water/Boiling water. 2. Stone. 3. Stick. 4. Oil. 5. Dish.	Can the pupil explain the meaning of matter?	3
	(ii) Identify the states of matter.	1. The teacher to guide pupils to read text books in order to find facts about states of matter. 2. By using the brainstorming technique, the teacher to guide the pupils to identify the states of matter.	1. Water/Boiling water. 2. Stones. 3. Oil. 4. Textbook. 5. Textbook in Braille notation.	Can the pupil identify the states of matter?	
b) Characteristics of Matter.	The pupil should be able to explain the characteristics of matter.	By using the group discussion technique, the teacher to guide the pupils to explain the characteristics of matter.	1. Water/Boiling water. 2. Stone. 3. Kerosine.	Can the pupil explain the characteristics of matter?	3

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
7. WATER a) States of Water and their Application.	The pupil should be able to:- (i) Identify the states of water.	By using the brainstorming technique, the teacher to guide the pupils to identify the states of water.	1. Water. 2. Ice. 3. Boiling water.	Can the pupil identify the states of water?	3
	(ii) Explain the uses of states of water.	By using the group discussion technique, the teacher to guide the pupils to explain the uses of states of water.	1. Chart showing uses of states of water. 2. Tactile chart showing uses of state of water . 3. Water. 4. Ice. 5. Boiling water.	Can the pupil explain the uses of states of water?	
b) Freezing and Boiling Points.	The pupils should be able to explain the freezing and boiling points of water.	The teacher to guide the pupils to conduct library study in order to find information about freezing and boiling points.	1. Refrigerator. 2. Water. 3. Thermometer. 4. Dishes. 5. Kerosine stove.	Can the pupil: 1. Explain the freezing point of water? 2. Explain the boiling point of water?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
c) Types of Water.	The pupil should be able to:- (i) Identify the types of water.	By using the brainstorming technique, the teacher to guide the pupils to identify the types of water.	1. Sea water. 2. Spring water. 3. Rain water. 4. Tape water. 5. Soap.	Can the pupil identify the types of water?	4
	(ii) Differentiate the types of water.	By using the experimentation technique, the teacher to guide the pupils to differentiate the types of water.	1.Sea water. 2. Spring water. 3. Rain water. 4. Tape water. 5. Soap.	Can the pupil differentiate the types of water?	
d) Water Pollution.	The pupil should be able to:- (i) Explain the meaning of water pollution.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of water pollution.	1. Charts/Pictures showing water pollution. 2. Tactile charts/pictures showing water pollution.	Can the pupil explain the meaning of water pollution?	3

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Explain the causes and effects of water pollution.	1. By using internet, the teacher to guide pupils to acquire information about causes and effects of water pollution. 2. By using the group discussion technique, the teacher to guide the pupils to explain the causes and effects of water pollution.	1. Charts /Pictures showing water pollution. 2. Tactile charts/pictures showing water pollution. 3. Computer with internet. 4. Computer with internet and narrator.	Can the pupil: 1. Explain the causes of water pollution? 2. Explain the effects of water pollution?	
e) Water Borne Diseases.	The pupil should be able to:- (i) Identify the water borne diseases.	By using the short lecture technique, the teacher to guide the pupils to identify the water borne diseases.	1. Chart showing water born diseases. 2. Tactile chart showing water born diseases.	Can the pupil identify the water borne diseases?	4
	(ii)Explain the causes and mode of transmission of waterborne diseases.	1. Pupils to watch a video cassettes on water contamination by people due to poor sanitary /sewerage systems. 2. By using the group discussion technique, the teacher to guide the pupils to explain causes and mode of transmission of the named waterborne diseases.	Video cassettes.	Can the pupil explain the cause and mode of transmission of the named water- borne diseases?	
	(iii) Explain the symptoms of the named waterborne diseases.	1. The teacher to guide pupils to read textbooks in order to find information on symptoms of the named water borne diseases.	1. Textbooks. 2. Textbooks in Braille-notation.	Can the pupil explain the symptoms of the named water borne diseases?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
		2. By using the group discussion technique, the teacher to guide the pupils to explain the symptoms of the water borne diseases.			
	(iv) Explain the prevention of the named waterborne diseases.	By using the group discussion technique, the teacher to guide the pupils to explain the prevention of the named water borne diseases.	1. Textbooks. 2. Textbooks in Braille notation. 3. video cassette on good sanitary habits.	Can the pupil explain the prevention of the named water borne diseases?	
f) Hazards of Water and Related Precautions.	The pupil should be able to: (i) Identify different hazards of water.	By using the short lecture technique, the teacher to guide the pupils to identify different types of hazards of water.	1. Picture showing hazards of water. 2. Tactile picture showing hazards of water.	Can the pupil identify different hazards of water?	3
	(ii) Describe safety measures of water hazards.	By using the small group discussion technique, the teacher to guide the pupils to describe safety measures of water hazards.	1. Pictures showing safety measures of water hazards. 2. Tactile pictures showing safety measures of water hazards.	Can the pupil describe safety measures of water hazards?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) Explain the related precautions on water hazards.	1. By using the library research technique, the teacher to guide pupils find information about the precautions to take in order prevent water hazards. 2. By using the group discussion technique, the teacher to guide the pupils to explain the precautions to be taken in order to prevent water hazards.	1. Pictures showing precautions to be taken on water hazards. 2. Tactile pictures showing precautions to be taken on water hazards. 3. Books concerning precautions on water hazards. 4. Books concerning precaution on water hazard in Braille notation. 5. Video cassettes.	Can the pupil explain the related precautions of water hazards?	
8. AIR a) Composition of Air.	The pupil should be able to: (i) Identify the composition of air.	1. By using the library study technique, the teacher to guide pupils to find information on composition of air. 2. By using the brainstorming technique, the teacher to guide the pupils to identify the composition of air.	1. Chart showing composition of air. 2. Tactile chart showing composition of air.	Can the pupil identify the composition of air?	3
	(ii) Explain the uses of air.	By using the group discussion technique, the teacher to guide the pupils to explain the uses of air.	1. Pictures of uses of air. 2. Textbook.. 3. Textbook in Braille.	Can the pupils explain the uses of air.	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Combustion.	The pupil should be able to: (i) Explain the concept of combustion.	By using the short lecture technique, the teacher to guide the pupils to explain the concept of combustion.	Various substances such as: 1. Piece of paper. 2. Dry piece of wood. 3. Match box.	Can the pupil explain the concept of combustion?	4
	(ii) Burn various substances in air.	By using the demonstration technique, the teacher to guide the pupils to burn different substances in air.	Various substances such as: 1. Candle. 2. Pieces of paper. 3. Phosphorus metal.	Can the pupil burn various substances in air?	
c) Pollution of Air.	The pupil should be able to: (i) Explain the meaning of air pollution.	The teacher to guide the pupils to read text books in order to find explanations of air pollution.	1. Pictures showing pollution of air. 2. Tactile pictures showing pollution of air. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain the meaning of air pollution?	3
	(ii) Explain the causes of air pollution.	By using the group discussion technique, the teacher to guide the pupils to discuss the causes of air pollution.	1. Charts/picture showing the causes of air pollution. 2. Tactile charts/pictures showing causes of air pollution.	Can the pupil explain the causes of air pollution?	
	iii) Explain the effects of air pollution.	The teacher to guide the pupils to read texts on the effects of air pollution.	1. Written text on the effects of air pollution. 2. Written text in Braille notation.	Can the pupils explain the causes of air pollution?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
9. SOIL a) Soil Organisms.	The pupils should be able to:- (i) Identify the different soil organisms.	By using the outdoor activity the teacher the to guide the pupils to dig in the school farm/garden and identify different soil organisms.	1. Soil in the garden/farm. 2. Actual soil organism	Can the pupil identify the different soil organisms?	4
	(ii) Explain the importance of soil organisms.	1. By using the library study technique, the teacher to guide pupils to find facts on the importance of soil organisms. 2.By using the group discussion technique, the teacher to guide the pupils to explain the importance of soil organisms.	1. Chart showing various soil organisms. 2. Tactile chart showing various of soil organisms.	Can the pupil explain the importance of soil organisms?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Soil Fertility.	The pupil should be able to: (i) Explain the concept of soil fertility.	By using the short lecture technique, the teacher, to guide the pupils to explain the concept of soil fertility.	1. Textbook. 2. Textbook in Braille.	Can the pupil explain the concept of soil fertility?	4
	(ii) State the components of soil fertility.	By using the brainstorming technique, the teacher to guide the pupils to state the components of soil fertility.	1. Chart showing components of soil fertility. 2. Tactile chart showing components of soil fertility.	Can the pupil state the components of soil fertility?	
	(iii) Explain the importance of soil fertility.	By using the group discussion technique, the teacher to guide the pupils to explain the importance of soil fertility.	1. Chart showing the importance of soil fertility. 2. Tactile chart showing the importance of soil fertility.	Can the pupil explain the importance of soil fertility?	
c) Fertilizers and Manures.	The pupil should be able to: (i) Explain the meaning of fertilizer.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of fertilizer.	1. Fertilizer. 2. Chart/Picture showing fertilizer. 3. Tactile chart showing fertilizer.	Can the pupil explain the meaning of fertilizer?	6

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Identify different types of fertilizers.	By using the brainstorming technique, the teacher to guide the pupils to identify different types of fertilizers.	1. Various types of fertilizers. 2. Chart of different types of fertilizers. 3. Tactile chart of different types of fertilizers.	Can the pupil identify different types of fertilizers?	
	(iii) Explain the importance of fertilizers.	1. By using internet, the teacher to guide pupils to acquire materials from the internet on importance of fertilizers. 2. By using the group discussion technique, the teacher to guide the pupils to explain the importance of fertilizers.	1. Chart of different types of fertilizers. 2. Tactile chart of different types if fertilizers. 3. Computer with internet . 4. Computer with internet and narrator.	Can the pupil explain the importance of fertilizers?	
	(iv) Explain the meaning of manure.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of manure.	1. Manure. 2. Chart/Picture showing manure. 3. Tactile chart/picture showing manure.	Can the pupil explain the meaning of manure?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(v) Identify different types of manures.	By using the brainstorming technique, the teacher to guide the pupils to identify different types of manures.	1. Chart of different types of manure. 2. Tactile chart of different types of manure.	Can the pupil identify different types of manures?	
	(vi)Prepare compost manure.	By using a project technique, the teacher to guide students to prepare compost manures using house hold organic refuse,	House hold organic refuse.	Can the pupil prepare compost manure?	
	(vii) Explain the importance of manure.	By using the group discussion technique, the teacher to guide the pupils to explain the importance of manure.	1. Chart of different types of manure. 2. Tactile chart of different types of manure.	Can the pupil explain the importance of manure?	
	(viii) Use fertilizers and manures.	By using the practical technique, the teacher to guide the pupils to use fertilizers and manure in the school garden.	1. School garden. 2. Fertilizers. 3. Manures.	Can the pupil use fertilizers and manures?	
10 LIGHT a) Properties of Light.	The pupil should be able to explain the properties of light.	1. By using the short lecture technique, the teacher to guide the pupils to explain the properties of light. 2. By using the experiment technique, the teacher to guide the pupils to explain the properties of light.	1. Source of light. 2. Four cards with a small hole at the centre. 3. Mirror. 4. Optical pins. 5. Glass. 6. Pencil. 7. Water.	Can the pupil explain the properties of light?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Formation of Images in Plane Mirrors.	The pupil should be able to demonstrate formation of image in plane mirrors.	By using the demonstration technique, the teacher to guide the pupils to demonstrate formation of image in plane mirrors.	1. Plane mirrors. 2. Optical pins. 3. Piece of paper. 4. Pencil. 5. Ruler.	Can the pupil demonstrate formation of images in plane mirrors?	4
11. SOUND The Structure of the Ear and Mechanism of Hearing.	The pupil should be able to: (i) Identify the different parts of the ear.	The teacher to guide the pupils to read textbooks in order to identify different parts of the ear.	1. Charts/model showing parts of ear. 2. Tactile charts showing parts of ear. 3. Textbook 4. Textbook in Braille notation.	Can the pupil identify the different parts of the ear?	4
	(ii) Draw and label the internal structure of the ear.	By using the drawing technique, the teacher to guide the pupils to draw and label the structure of the ear.	1. Charts/model showing parts of the ear. 2. Tactile charts showing parts of the ear.	Can the pupil draw and label the structure of the ear?	
	(iii) Explain the functions of different parts of the ear.	By using the group discussion technique, the teacher to guide the pupils to explain the functions of different parts of the ear.	1. Charts/model showing parts of the ear. 2. Tactile charts showing parts of the ear.	Can the pupil explain the functions of different parts of the ear?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iv) Explain the hearing mechanism in human being.	By using the short lecture technique, the teacher to guide the pupils to explain the hearing mechanism in human being.	-	Can the pupil explain the hearing mechanism in human being?	
	(v) Take care of their ears	1. By using demonstration technique, the teacher to lead the pupils to clean their internal ears weekly 2. By using practice techniques, the teacher to lead the pupils to clean their weekly.	1.Cotton buds 2.Clean handkerchief	Can the pupils the internal part Of their ears	
12. HEAT a) Body Heat Control.	The pupil should be able to:- (i) Identify the different parts of the skin.	By using the short lecture technique, the teacher to guide the pupils to identify different parts of the skin.	1. Chart/Model showing parts of the skin. 2. Tactile charts showing parts of the skin.	Can the pupil identify the different parts of the skin?	4
	(ii) Explain how human skin controls heat.	By using the library study technique, the teacher to guide the pupils to find explanations on how the human skin controls heat.	1. Chart/model showing parts of the skin 2. Tactile charts showing parts of the skin. 3. Text concerning heat control of the skin. 4. Text concerning heat control of the skin in Braille notation..	Can the pupil explain how human skin controls heat?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Sustainable Use of Plants as Fuel.	The pupil should be able to: (i) Identify different plants that are used for fuel.	By using the brain-storming technique, the teacher to guide the pupils to identify different plants that are used for fuel.	1. Photograph and pictures showing some plants that are used as fuel. 2. Tactile pictures showing some plants that are used as fuel. 3. Actual plants that are used as fuel.	Can the pupil identify different plants that are used for fuel?	3
	(ii) Mention the advantages and disadvantages of using plants as a source of fuel.	By using the group discussion technique, the teacher to guide the pupils to mention the advantages and disadvantages of using plants as a source of fuel.	1. Photographs and pictures showing positive and negative impact of using plants as a source of fuel. 2. Tactile pictures showing positive and negative impact of using plants as a source of fuel.	Can the pupil: 1. Mention the advantages of using plants as a source of fuel? 2. Mention the disadvantages of using plants as a source of fuel?	
	(iii) Explain sustainable use of plants as fuel.	By using the library study technique, the teacher to guide the pupils to find explanations on sustainable use of plants as fuel.	1.Chart/Picture showing the methods of sustainable use of plants as fuel. 2. Tactile chart showing the methods of sustainable use of plants as fuel. 3. Books concerning sustainable use of plants. 4.Books in Braille notation concerning sustainable use of plants.	Can the pupil explain sustainable use of plants as fuel?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
13. ELECTRICITY a) Components of Electric Circuits.	The pupil should be able to identify components of electric circuits.	By using the demonstration technique, the teacher to guide the pupils to prepare an electric circuit.	1. Cells. 2. Wires. 3. Bulbs. 4. Switch.	Can the pupil identify components of electric circuits?	3
b) Symbols of Electric Circuit Components.	The pupil should be able to: (i) Identify symbols of electric circuit components.	By using the short lecture technique, the teacher to guide the pupils to identify the symbols of electric circuit components.	1. Charts showing symbols of electric circuit components. 2. Tactile charts showing symbols of electric circuit components.	Can the pupil identify the symbols of electric circuit components?	3
	(ii) Draw the symbols of electric circuit components.	By using the drawing technique, the teacher to guide the pupils to draw the symbols of electric circuit components.	1. Chart showing symbols of electric circuit components. 2. Tactile chart showing symbols of electric circuit components.	Can the pupil draw the symbols of electric circuit components?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
c) Cells and Battery.	The pupils should be able to: (i) Explain the meaning of a cell.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of a cell.	1. Cells. 2. Diagram of a cell. 3. Diagram of a cell in Braille.	Can the pupil explain the meaning of cell?	4
	(ii) Identify the types of cells.	By using the group discussion technique, the teacher to guide the pupils to identify types of cell.	1. Diagrams of different types of cells. 2. Dry cell and wet cell. 3. Diagram of different types of cells in Braille.	Can the pupil identify the types of cells?	
	(iii) Draw a dry and wet cells.	By using the drawing technique, the teacher to guide the pupils to draw a dry cell and wet cell.	1. Diagram showing dry and wet cells. 2. Diagram showing dry and wet cells in Braille.	Can the pupil draw a dry cell and a wet cell?	
	(iv) Explain the meaning of battery.	The teacher to guide the pupils to read textbook in order to explain the meaning of battery.	1. Diagram of battery. 2. Battery. 3. Diagram of battery in Braille. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain the meaning of battery?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
d) Electric Hazards and Related Precautions.	The pupil should be able to: (i) Identify different types of electric hazards.	By using the brainstorming technique, the teacher to guide the pupils to identify different types of electric hazards.	1. Charts showing electric hazards. 2. Tactile chart showing electric hazards.	Can the pupil identify different types of electric hazards?	3
	(ii) Describe safety measures when dealing with electric hazards.	By using the library study technique, the teacher to guide the pupils to find information about safety measures to be taken when dealing with electric hazards.	1. Charts showing safety measures of electric hazards. 2. Tactile charts showing safety measures of electric hazards. 3. Books concerning electric hazards. 4. Books concerning electric hazards in Braille notation.	Can the pupil describe safety measure when dealing with electric hazards?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
14. MAGNETS Laws of Magnets.	The pupil should be able to explains the laws of magnets.	By using the experimentation technique, the teacher to guide the pupils to explain laws of magnets.	1. Bar magnets. 2. Textbook. 3. Textbook in Braille notation.	Can the pupil explain the laws of magnets?	3
15. MACHINES Simple Machine.	The pupil should be able to: (i) Explain the concept of simple machine.	By using the short lecture technique, the teacher to guide the pupils to explain the concept of simple machine.	Various substances such as: 1. Sped. 2. Scissors. 3. Wheel barrow. 4. Sand. 5. Stone. 6. Balance.7. Opener. 8. Nut cracker.	Can the pupil explain the concept of simple machine?	5
	(ii) Mention parts and groups of a simple machine.	By using the group discussion technique, the teacher to guide the pupils to discuss the parts and groups of a simple machine.	1. Sped 2. Scissors. 3. Wheel barrow. 4. Sand. 5. Stone. 6. Balance. 7. Opener. 8. Nut cracker.	Can the pupil mention parts and groups of simple machine?	
	(iii) Show how a simple machine simplifies work.	1.By using the demonstration technique, the teacher to guide the pupils to show how simple machine simplify work. 2.By using practice techniques, pupils to use various simple machines to simplify work.	1. Textbook. 2. Textbook in Braille notation.	Can the pupil show how simple machines simplifies work?	

STANDARD SIX

COMPETENCES

By the end of Std VI the pupils shall demonstrate the ability to:-

1. Identify and apply services for controlling the transmission and effects of STIs, HIV and AIDS.
2. Identify water applications and use them in daily life.
3. Identify and explain the characteristics of living and non-living things.
4. Identify the causes of soil pollution and take steps to control them.
5. Demonstrate the properties of forms of energy and take precautions to prevent their hazards.
6. Identify and explain the hazards of heat and take precautions against them.
7. Identify and explain the functions of human body systems.
8. Identify and explain the uses of complex machines.
9. Use library and ICT facilities in order to acquire scientific knowledge and skills.

OBJECTIVES

The objectives of teaching Science subject in Standard VI are to enable the pupils to:-

1. Describe the importance and application of available community services in controlling the transmission and effects of STIs, HIV and AIDS.
2. Show knowledge of water applications and their usage in daily life.
3. Describe the importance and characteristics of living things.
4. Acquire skills of applying forms of energy and protecting themselves against their related hazards.
5. Describe the applications of complex machines for personal and community development.
6. Acquire knowledge of the functions of human body systems.
7. Use library and ICT facilities to get scientific knowledge and skills.

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
1. BODY HEALTH a) Voluntary Counselling and Testing (VCT).	The pupil should be able to: (i) Explain the concept of voluntary counselling and testing (VCT).	By using the guest speaker technique, the teacher to guide the pupils to explain the concept of voluntary counselling and testing.	1. Chart showing services provided by VCT centre. 2. Tactile chart showing services provided by VCT centre.	Can the pupil to explain the concept of voluntary counselling and testing?	6
	(ii) Explain the importance of voluntary counselling and testing.	1.By using the guest speaker technique, the teacher guide the pupils to explain the importance of voluntary counselling and testing. 2. By using the field trip technique, the teacher to guide the pupils visit VCT centre to observes provided.	1. Chart showing importance of voluntary counselling and testing. 2. Tactile chart showing importance of voluntary counselling and testing. 3.Video cassettes showing volunteers attending counselling and testing session.	Can the pupil explain the importance of voluntary counselling and testing?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) The use of Anti - Retroviral Drugs (ARVs).	The pupil should be able to explain the advantages of Anti Retroviral Drugs (ARVs).	By using the guest speaker technique, the teacher to guide the pupils to explain the advantages of ARVs.	Samples of ARVs drugs.	Can the pupil explain the advantages of Anti-Retroviral drugs?	4
c) Stigmatization.	The pupil should be able to: (i) Explain the meaning of stigmatization.	By using the case study technique, the teacher to guide the pupils to explain the meaning of stigmatization.	Video cassettes showing stigmatization.	Can the pupil explain the meaning of stigmatisation?	4
	(ii) Explain the effects of stigmatization.	By using the pair and group work technique, the teacher to guide the pupils to explain the effects of stigmatization.	Video cassettes showing the effects of stigmatization.	Can the pupil explain the effects of stigmatisation?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
2. FOOD AND NUTRITION a) Nutrition for Pregnant and Lactating Mothers.	The pupil should be able to identify the food requirements for pregnant and lactating mothers.	1. By using the library study technique, the teacher to guide pupils to find information on food requirements for pregnant and lactating mothers. 2. By using the group- work technique, the teacher to guide the pupils to identify the food requirements for pregnant and lactating mothers.	1. Protein food (meat, fish, milk). 2. Carbohydrates (cassava, rice, irish potatoes). 3. Vitamins (fruits, carrots). 4. Minerals (seafood). 5. Fats/Lipids (butter, groundnuts). 6. Roughages (spinach) 7. Books concerning diet for pregnant and lactating mothers. 8. Books in Braille notation concerning diet of pregnant and lactating mothers foods.	Can the pupil identify the food requirements for pregnant and lactating mothers?	4
b) Nutritional Disorders.	The pupils should be able to: (i) Identify different types of nutritional disorders.	By using the short lecture technique, the teacher to guide the pupils to identify different types of nutritional disorders.	1.Chart showing different types of nutritional disorders (marasmus, kwashiorkor, obesity, goitre, rickets etc). 2. Tactile chart showing different types of nutritional disorders.	Can the pupil identify different types of nutritional disorders?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Explain the signs and symptoms of each type of nutritional disorder.	1. By using the library research technique, the teacher to guide the pupils to find facts on the signs and symptoms of each type of the named nutritional disorders. 2. By using study visit technique, pupils to attend the MCH clinic to observe malnourished children.	1. Chart showing nutritional disorders. 2. Tactile chart showing nutritional disorders. 3. Books concerning nutritional disorders. 4. Books in Braille notation concerning nutritional disorders.	Can the pupil explain the signs and symptoms of each types of nutritional disorder?	
	(iii) Explain the treatment of each types of nutritional disorder.	By using the guest speaker technique, the teacher to guide the pupils to explain the treatment of each types of nutritional disorder.	1. Chart showing nutritional disorder. 2. Tactile chart showing nutritional disorders. 3. Video tapes/CDs/DVD concerning treatment of nutritional disorder.	Can the pupil explain the treatment of each types of nutritional disorder?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
3. BODY SYSTEMS a) Excretory System.	The pupil should be able to: (i) Identify different parts of the human urine- excretory system.	The teacher to guide the pupils read textbooks in order to identify different parts of the human urine-excretory system.	1. Chart showing human urine- excretory system urine. 2. Model of the human urine excretory system. 3. Tactile chart showing human urine- excretory system. 4. Textbook. 5. Textbook in Braille notation .	Can the pupil identify different parts of the human urine- excretory system?	6
	(ii) Draw and label the human urine-excretory system.	By using the drawing technique, the teacher to guide the pupils to draw and label the human urine- excretory system.	1. Chart showing the human urine- excretory system. 2. Model of the human urine-excretory system. 3. Tactile chart showing the human urine- excretory system.	Can the pupil draw and label the human urine-excretory system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) Explain the functions of each part of the human urine- excretory system.	By using the discussion technique, the teacher to guide the pupils to explain the functions of each part of the human urine- excretory system.	1. Chart showing human urine- excretory system. 2. Model of the human urine-excretory system. 3. Tactile chart showing human urine- excretory system.	Can the pupil explain the functions of each part of the human urine- excretory system?	
b) Reproductive System.	The pupil should be able to: (i) Identify different parts of the human reproductive system.	1. By using the short lecture technique, the teacher to guide the pupils to identify different parts of the human reproductive system. 2. By using internet, the teacher to guide pupils to search information on different parts of the human reproductive system.	1. Charts showing the human reproductive system of male and female. 2. Tactile charts showing human reproductive system of male and female. 3. Computer with internet. 4. Computer with internet and narrator.	Can the pupil identify different parts of the human reproductive system?	8

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Draw and label male and female reproductive organs.	By using the drawing technique, the teacher to guide the pupils to draw and label the male and female reproductive organs.	1. Charts showing the human reproductive system of male and female. 2. Tactile charts showing human reproductive system of male and female.	Can the pupil draw and label the male and female reproductive organs?	
	(iii) Explain the functions of each part of the reproductive system.	1. By using the library study technique, the teacher to guide pupils to find information on the functions of each part of the reproductive system. 2. By using the group discussion technique, the teacher to guide the pupils to explain the functions of each part of the reproductive system.	1. Charts showing the human reproductive system of male and female. 2. Tactile charts showing human reproductive system of male and female. 3. Books concerning human reproductive system. 4. Books in Braille notation concerning human reproductive system.	Can the pupil explain the functions of each part of reproductive system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iv) Explain the meaning of puberty.	By using the brainstorming technique, the teacher to guide the pupils to explain the meaning of puberty.	-	Can the pupil explain the meaning of puberty?	
	(v) Identify secondary sexual characteristics.	By using the library research technique, the teacher to guide the pupils to find facts on the male and female secondary sexual characteristics.	1. Different books. 2. Books in Braille notation.	Can the pupil identify the secondary sexual characteristics?	
	(vi) Explain the meaning of ovulation and menstruation.	By using the short lecture technique the teacher, to guide the pupils to explain the meaning of ovulation and menstruation.	1. Chart showing ovulation and menstruation. 2. Tactile chart showing ovulation and menstruation.	Can the pupil explain the meaning of ovulation and menstruation?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(vii) Explain the process of fertilization in human beings.	By using the library research technique, the teacher to guide the pupils to find explanations on the process of fertilization in human beings.	1. Chart showing stages of fertilization. 2. Tactile chart showing stages of fertilization . 3. Books concerning reproductive system. 4. Books in Braille notation concerning reproductive system.	Can the pupil explain the process of fertilization in human beings?	
	(viii) Explain the disorders of the reproductive system.	1. By using the library study technique, the teacher to guide the pupils to find information on the disorders of the reproductive system. 2. By using the group discussion technique teacher to guide the pupils to explain the disorders of the reproductive system.	1. Charts showing disorders of the reproductive system. 2. Tactile charts showing disorders of the reproductive system. 3. Books concerning disorders of the reproductive system. 4. Books in Braille notation concerning disorders of the reproductive system. 5. Video cassettes/CDs/DVD concerning disorders of the reproductive system.	Can the pupil explain the disorders of the reproductive system?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
c) Nervous System.	The pupil should be able to: (i) Explain the term nervous system.	By using the short lecture technique, the teacher to guide the pupils to explain the term nervous system.	1. Chart of the human Nervous system. 2. Tactile chart of the human nervous system.	Can the pupil explain the term nervous system?	6
	(ii) Draw and label the nervous system.	By using the drawing technique, the teacher to guide the pupils to draw and label the parts of the nervous system.	1. Chart of the human nervous system. 2. Tactile chart of the human nervous system.	Can the pupil draw and label the nervous system?	
	(iii) Explain the functions of each part of the nervous system.	By using the discussion technique, the teacher to guide the pupils to discuss the functions of each part of the nervous system.	1. Chart of the human nervous system. 2. Tactile chart of the human nervous system.	Can the pupil explain the functions of each part of nervous system?	
	(iv) Draw different sense organs.	1. By using the question and answer technique, the teacher to guide the pupils to identify different sense organs. 2. By using the drawing technique, the teacher to guide the pupils to draw and label different sense organs.	1. Charts of the sense organs (eye, ear, nose, tongue, skin). 2. Model of the eye. 3. Model of the ear. 4. Tactile charts of the sense organs.	Can the pupil draw different sense organs?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(v) Explain the functions of each sense organ.	1. The teacher to guide pupils to read text books on the functions of each of the sense organ. 2. By using the group discussion technique, the teacher to guide the pupils to discuss the functions of each sense organ.	1. Charts of the sense organs. 2. Tactile chart of the sense organs. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain the functions of each sense organ?	
d) Challenges of Adolescence.	The pupil should be able to: (i) Identify the challenges of adolescence.	1. By using the library research technique, the teacher to guide the pupils to find information on the identify and challenges of adolescence. 2. By using gallery walk technique, the teacher to guide the pupils to identity the challenges of adolescence.	1. Charts/Pictures showing different challenges of adolescence. 2. Tactile charts/pictures showing different challenges of adolescence. 3. Books concerning adolescence. 4. Books in Braille notation oncerning adolescence. 4. Video tape/CDs/DVD concerning challenges of adolescence .	Can the pupil identify the challenges of adolescence?	4

TOPICS/ SUB-TOPIC	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Identitfy the ways of coping with the challenges of adolescence.	By using the discussion technique, the teacher to guide the pupils to identity the ways of coping with challenges of adolescence.	1. Charts/Pictures showing different challenges of adolescence. 2. Tactile charts/pictures showing different challenges of adolescence.	Can the pupil identify the ways of copying with the challenges of adolescence?	
4. ANIMALS a) Types of Aquatic Animals.	The pupil should be able to identify different types of aquatic animals.	1. By using the brainstorming technique, the teacher to guide the pupils to identify different types of aquatic animals. 2. By using study visit technique, the teacher to guide pupils to a nearby fish market/beach to observe aquatic animals.	1. Different types of aquatic animals (Turtles, octopus, fish, oysters). 2. Pictures showing types of aquatic animals. 3. Tactile pictures showing types if aquatic animals. 4. Video cassettes/ CDs/DVD concerning aquatic animals.	Can the pupil identify different types of aquatic animals?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
b) Economic Importance of Aquatic Animals.	The pupil should be able to explain the economic importance of aquatic animals.	By using the gallery walk technique, the teacher to guide the pupils to explain the economic importance of aquatic animals.	1. Charts showing the economic importance of aquatic animals. 2. Tactile charts showing the economic importance of aquatic animals.	Can the pupil explain the economic importance of aquatic animals?	2
c) Threats to aquatic animals	The pupils should be able to explain the threats facing aquatic animals	By using library research, pupils to read leaflets / pamphletes on threats to aquatic animals	Pamphletes/leaflets on threats, to aquatic animals (e.g poison fishing, dynamite, seine – net fishing, sewerage emission into the sea, plastic bags etc)	Can the pupil explain the threats facing aquatic animals.	2
5. PLANTS a) Fruits and Seeds.	The pupil should be able to: (i) Distinguish between fruits and seeds.	By using the observation technique, the teacher to guide the pupils to distinguish between fruits and seeds.	1. Actual fruits (maize grain, bean pod, pea pod, oranges, pawpaw). 2. Actual seeds (cereals, bean seed, cowpea).	Can the pupil distinguish between fruits and seeds?	4
	(ii) Mention different examples of fruits and seeds.	By using the brain storming technique, the teacher to guide the pupil to mention different example of fruits and seeds.	1. Actual fruits. 2. Actual seed. 3. Pictures/charts showing fruits and seeds. 4. Tactile charts showing fruits and seeds.	Can the pupil mention different examples of fruits and seeds?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) Draw and label parts of fruits and seeds.	By using the drawing technique, the teacher to guide the pupils to draw and label the parts of fruits and seeds.	1. Pictures/Drawings showing fruits and seeds. 2.Textbook. 3.Tactile pictures/drawing showing fruits and seeds. 4. Textbook in Braille notation..	Can the pupil draw and label parts of fruits and seeds?	
b) Germination.	The pupil should be able to: (i) Explain the term germination.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of germination.	1. Chart showing germination of seeds. 2. Tactile chart showing germination of seed.	Can the pupil explain the term germination?	6
	(ii) Identify the conditions necessary for germination.	By using the experimentation technique, the teacher to guide the pupils to identify conditions necessary for germination.	1. Viable seeds. 2. Water. 3. Cotton wool. 4. Empty tins. 5. Soil. 6. Cooking oil. 7. Refrigerator.	Can the pupil identify the conditions necessary for germination?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) Germinate different seeds.	By using the practical technique, the teacher to guide the pupils to germinate different types of seeds.	1. Viable seeds. 2. Water. 3. Cotton wool. 4. Empty tins. 5. Soil. 6. Cooking oil. 7. Refrigerator.	Can the pupil germinate different seeds?	
	(iv) Identify different types of germination.	By using the observation technique, the teacher to guide the pupils to identify different types of germination.	Potted germinated seeds of maize grains and bean seeds to show hypogeal and epigeal types of seed germination.	Can the pupil identify different types of germination?	
6. MATTER Effects of Heat on Matter.	The pupil should be able to: (i) Investigate the effects of heat on matter.	By using the experimentation technique, the teacher to guide the pupils to investigate the effects of heat on matter.	1. Source of heat – (candle, Spirit lamp, stove). 2. Iron bar. 3. Tin. 4. Copper .	Can the pupil investigate the effects of heat on matter?	4

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Measure the temperature in degrees centigrade.	By using the practical technique, the teacher to guide the pupils to measure the temperature in degree centigrade.	1. Ordinary thermometer. 2. Beaker. 3. Heat source. 4. Water. 5. Tripod stand.	Can the pupil measure the temperature in ^{o}C (degree centigrade)?	
7. WATER a) Solvent Characteristics of Water.	The pupil should be able to identify characteristics of water as a solvent.	By using the demonstration technique, the teacher to guide the pupils to identify characteristics of water as a solvent.	1. Water. 2. Sugar. 3. Salt. 4. Soap powder.	Can the pupil identify characteristics of water as a solvent?	4
b) Solutions.	The pupil should be able to: (i) Explain the meaning of solution.	By using the experimentation technique, the teacher to guide the pupils to explain the meaning of solution.	1. Salt. 2. Sugar. 3. Water. 4. Beakers. 5. Stirrers. 6. Spatula. 7. Watch glasses. 8. Soap.	Can the pupil explain the meaning of solution?	4
	(ii) Prepare different solutions.	By using the inquiry technique, the teacher to guide the pupils to prepare different solutions.	1. Salt. 2. Sugar. 3. Water. 4. Beakers. 5. Stirrers. 6. Spatula. 7. Watch glasses. 8. Soap.	Can the pupil prepare different solutions?	

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c) Water Pressure and its Applications.	The pupil should be able to: (i) Explain the concept of water pressure.	By using the short lecture technique, the teacher to guide the pupil to explain the concept of water pressure.	1. Container with water (e.g. can, bucket, tins). 2. Plastic bottles with holes on the sides. 3. Water tanks. 4. Thistle funnel. 5. Ureka can.	Can the pupil explain the concept of water pressure?	5
	(ii) Identify the parameters on which water pressure depends.	By using the experimentation technique, the teacher to guide the pupils to identify the parameters on which water pressure depends.	1. Container with water. 2. Plastic bottles with holes on its sides. 3. Water tanks. 4. Ureka - can.	Can the pupil identify the parameters on which water pressure depends?	
	(iii) Explain the applications of water pressure in daily life.	By using the group discussion technique, the teacher to guide the pupils to discuss the application of water pressure in daily life.	1. Container with water. 2. Water tanks. 3. Pictures/diagrams of overhead tanks and dams. 4. Tactile pictures/diagrams of overhead tanks and dams.	Can the pupil explain the applications of water pressure in daily life?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iv) Identify the effects of water pressure.	1. By using the library reading technique, the teacher to guide pupils to find facts about the effects of water pressure. 2. By using the written exercise technique, the teacher to guide the pupils to identify the effects of water pressure.	1. Picture /chart showing effects of water pressure. 2. Tactile picture/chart showing effects of water pressure. 3. Books concerning effects of water pressure. 4. Books in Braille notation concerning effects of water pressure.	Can the pupil identify the effects of water pressure?	
d) Floatation and Sinking of Bodies.	The pupil should be able to: (i) Explain the concepts of floatation and sinking.	By using the demonstration technique, the teacher to guide the pupils to explain the concepts of floatation and sinking.	1. Container with water. 2. Floating bodies (e.g. corks, piece of wood). 3. Sinking bodies (e.g. stone, piece of iron coins). 4. Textbook. 5. Textbook in Braille notation.	Can the pupil explain the concepts of floatation and sinking?	6

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Identify objects which float and objects which sink.	By using the experimentation technique, the teacher to guide the pupils to identify objects which float and those which sink.	1. Container with water. 2. Floating bodies. 3. Sinking bodies.	Can the pupil identify objects which float and objects which sink?	
	(iii) Identify the shapes which facilitate floatation.	By using the demonstration technique, the teacher to guide the pupils to identify the shapes which facilitate floatation.	1. Objects with spherical shape. 2. Objects with cylindrical shape. 3. Ring shaped objects.	Can the pupil identify the shapes which facilitate floatation?	
	(iv) Explain the reasons which bring about floatation.	By using the question and answers technique, the teacher to guide the pupils to explain the reasons which bring about floatation.	1. Air filled objects (e.g. air filled scaled bottles). 2. Submarine. 3. Ship made from pieces of paper. 4. Bucket full of water.	Can the pupil explain the reasons which bring about floatation?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(v) Explain the reasons which bring about sinking.	1. The teacher to guide pupils to read textbook on reasons for sinking. 2. By using the group discussion technique, the teacher to guide the pupils to explain the reasons which bring about sinking.	1. Air filled objects. 2. Submarine. 3. Model of a ship made from pieces of paper. 4. Bucket full of water. 5. Textbook. 6. Textbook in Braille notation.	Can the pupil explain the reasons which bring about sinking?	
8. AIR a) Air bone Diseases.	The pupil should be able to: (i) Identify different types of airborne diseases.	By using the short lecture technique, the teacher to guide the pupils to identity different types of airborne diseases.	1. Chart showing airborne diseases. 2. Tactile chart showing airborne diseases.	Can the pupil identify different type of airborne diseases?	4
	(ii) Explain the preventive measures against air borne diseases.	By using the group work technique, the teacher to guide the pupils explain the preventive measures against airborne diseases.	1. Picture/chart showing illustration of preventive measures of airborne diseases. 2. Tactile picture/chart showing preventive measures of airborne diseases. 3. Video cassettes/CDs/DVD concerning prevention of airborne diseases.	Can the pupil explain the preventive measures against airborne diseases?	

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9. SOIL a) Soil Degradation.	The pupil should be able to: (i) Explain the meaning of soil degradation.	By using the library research technique, the teacher to guide the pupils to find facts on the meaning of soil degradation.	1. Picture/chart showing soil degradation. 2. Tactile picture/ chart showing soil degradation . 3. Books concerning soil degradation. 4. Books in Braille notation concerning soil degradation.	Can the pupil explain the meaning of soil degradation?	**4**
	(ii) Identify factors which lead to soil degradation.	By using the group discussion technique, the teacher to guide the pupils to identity the factors which lead to soil degradation.	1. Chart showing factors leading to soil degradation. 2. Tactile chart showing factors leading to soil degradation.	Can the pupil identify factors which lead to soil degradation?	
b) Soil Erosion.	The pupil should be able to: (i) Explain the meaning of soil erosion.	By using the short lecture technique, the teacher to guide the pupil to explain the meaning of soil erosion.	1. Picture/chart showing soil erosion. 2. Tactile picture chart showing soil erosion.	Can the pupil explain the meaning of soil erosion?	6

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(ii) Mention agents which cause soil erosion.	By using the question and answers technique, the teacher to guide the pupils to mention agents which causes soil erosion.	1. Chart illustrating agents of soil erosion. 2. Tactile chart illustrating agents of soil erosion.	Can the pupil mention agents which cause soil erosion?	
	(iii) Explain types of soil erosion.	1. The teacher to guide pupils to read textbook on types of soil erosion. 2. By using the written exercise technique, the teacher to guide the pupils to explain types of soil erosion.	1. Pictures showing types of soil erosion. 2. Tactile picture showing types of soil erosion. 3. Textbook. 4. Textbook in Braille notation.	Can the pupil explain types of soil erosion?	
	(iv) Explain effects of soil erosion.	1. By using the group discussion technique, the teacher to guide the pupils to explain effects of soil erosion. 2. By using study visit technique, the teacher to guide the pupils observe the eroded areas (specially along the beaches) and then explain the effects of soil erosion.	1. Chart showing effects of soil erosion. 2. Tactile chart showing effects of soil erosion. 3. Video cassettes/ CDs/DVD concerning effects of soil erosion.	Can the pupil explain effects of soil erosion?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(v) Explain the preventive measures of soil erosion.	By using the pair work technique, the teacher to guide the pupils to explain the preventive measures of soil erosion.	1. Pictures showing preventive measures of soil erosion. 2. Tactile pictures showing preventive measures of soil erosion.	Can the pupil explain preventive measures of soil erosion?	
c) Soil Pollution.	The pupil should be able to: (i) Explain the meaning of soil pollution.	By using the short lecture technique, the teacher to explain to the pupils the concept of soil pollution.	1. Chart illustrating soil pollution. 2. Tactile chart illustrating soil pollution.	Can the pupil explain the meaning of soil pollution?	4
	(ii) Describe the effects of soil pollution on the environment.	1. By using the internet, the teacher to guide pupils to acquire information from the internet on effects of soil pollution on the environment. 2. By using the group discussion technique, the teacher to guide the pupils to describe the effects of soil pollution on the environment.	1. Chart showing effects of soil pollution on the environment. 2. Tactile chart showing effects of soil pollution on the environment . 3. Computer with internet. 4. Computer with internet and narrator.	Can the pupil describe the effects of soil pollution on the environment?	

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	(iii) Identify ways in which soil pollution can be prevented.	By using the brainstorming technique, the teacher to guide the pupils to identify ways in which soil pollution can be prevented.	1. Chart showing ways of preventing soil pollution. 2. Tactile chart showing ways of preventing soil pollution.	Can the pupil identify ways in which soil pollution can be prevented?	
10. LIGHT a) Lenses and Image Formation.	The pupil should be able to: (i) Explain the meaning of lens.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of lens.	-	Can the pupil explain the meaning of lens?	6
	(ii) Mention types of lens.	By using the observation technique, the teacher to guide the pupils to mention types of lens.	1. Concave lens. 2. Convex lens.	Can the pupil mention types of lens?	
	(iii) Explain the process of image formation in lenses.	By using the short lecture technique, the teacher to guide the pupils to explain the process of image formation in concave and in convex lenses.	1. Drawing showing image formation in concave lens and convex lens. Tactile drawing showing image formation in concave and convex lenses.	Can the pupil explain the process of image formation in lenses?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iv) Demonstrate the process of image formation in lenses.	By using the demonstration technique, the teacher to guide the pupils to demonstrate the process of image formation in concave and in convex lenses	1. Convex lens. 2. Concave lens. 3. Lens stand. 4. White paper. 5. Optical pins.	Can the pupil demonstrate the process of image formation in lenses?	
b) Structure of the Eye, Defects and Corrective Measures.	The pupil should be able to: (i) Identify different parts of the eye.	By using the short lecture technique, the teacher to guide the pupils to identify the different parts of the eye.	1. Model of the eye. 2. Chart illustrating the structure of the eye. 3. Tactile chart illustrating the structure of the eye.	Can the pupil identify different parts of the eye?	7
	(ii) Draw and label the structure of the eye.	By using the drawing technique, the teacher to guide the pupils to draw and label different parts of the human eye.	1. Chart illustrating structure of the eye. 2. Tactile chart illustrating structure of the eye.	Can the pupil draw and label the structure of the eye?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) State the functions of each part of the eye.	By using the group discussion technique, the teacher to guide the pupils to state the functions of each part of the eye.	1. Picture/chart illustrating parts of the eye. 2. Tactile picture/chart illustrating parts of the eye.	Can the pupil state the functions of each part of the eye?	
	(iv) Describe image formation in the eye.	By using the short lecture technique, the teacher to guide the pupils to describe image formation in the eye.	1. Diagram of image formation in the eye. 2. Tactile diagram of image formation in the eye.	Can the pupil describe image formation in the eye?	
	(v) Explain the defects of the eye and their corrective measures.	1. By using the library research technique, the teacher to guide the pupils to find explanations for the defects of the eye and their corrective measures. 2. By using the gallery walk technique the teacher to guide the pupils to give explanations of eye defects and their corrective measures.	1. Library. 2. Charts/Pictures illustrating eyes defects and their corrective measures. 3. Tactile charts/pictures illustrating eyes defects and their corrective measures.	Can the pupil explain the defects of the eyes and their corrective measures?	

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c. Photosynthesis.	The pupils should be able to: (i) Describe internal structure of a leaf.	1. By using short lecture technique, the teacher to guide the pupils to describe the internal structure of a leaf. 2. By using the observation technique, the teacher to guide pupils to observe under the microscope the different parts of the internal structure of a leaf. 3. By using the drawing technique, the teacher to guide the pupils to draw and label different parts of the internal structure of a leaf.	1. Chart/drawing showing internal structure of the leaf. 2. Light microscope. 3. Prepared slides of the internal structure of a leaf. 4. Tactile chart/ drawing showing internal structure of the leaf. 5. Actual leaf.	Can the pupils describe the internal structure of a leaf.	8
	(ii) Define the term photosynthesis.	By using the short lecture technique, the teacher to guide the pupils to define the term photosynthesis.	-	Can the pupil define the term photosynthesis?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
	(iii) State the conditions necessary for photosynthesis.	By using the experimentation technique, the teacher to guide the pupils to state the conditions necessary for photosynthesis.	1. Cards. 2. Potted plants. 3. Sodium hydroxide. 4. Conical flask. 5. Vasseline. 6. Cork. 7. Retort stand. 8. Variegated leaf. 9. Spirit. 10. Iodine solution. 11. Hot water. 12. White tile. 13. Test tube. 14. Wire gauze. 15. Tripod stand. 16. Dropping pipette.	Can the pupil state the conditions necessary for photosynthesis?	
	(iv) Describe the process of photosynthesis.	1. The teacher to guide the pupils to read textbook in order to find facts on the process of photosynthesis. 2. By using the group discussion technique the teachers to guide the pupils to describe the process of photosynthesis.	1. Chart illustrating the process of photosynthesis. 2. Tactile chart illustrating the process of photosynthesis . 3. Textbook. 4. Textbook in Braille notation.	Can the pupil describe the process of photosynthesis?	

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12. HEAT a) Rainfall Formation.	The pupil should be able to explain the stages of the process of rainfall formation.	1. By using the internet, the teacher to guide pupils to acquire information from the internet on rain formation. 2. By using the group discussion technique, the teacher to guide the pupils to explain the stages of the process of rainfall formation.	1. Chart showing stages of the rainfall formation. 2. Tactile chart showing stages of the rainfall formation. 3. Computer with internet. 4. Computer with internet and narrator.	Can the pupil explain the stages of the process of rainfall formation?	3
b) Hazards of Heat.	The pupil should be able to: (i) Identify different hazards of heat.	By using the group discussion technique, the teacher to guide the pupils to identify different hazards of heat.	1. Pictures/charts illustrating hazards of heat. 2. Tactile pictures/charts illustrating hazards of heat.	Can the pupil identify different hazards of heat?	4
	(ii) Explain measures of preventing hazards of heat.	By using the group discussion technique, the teacher to guide the pupils to explain measures needed to prevent hazards of heat.	1. Chart illustrating prevention heat hazards. 2. Tactile chart illustrating prevention of heat hazards.	Can the pupil explain measures of preventing hazards of heat?	

TOPICS/ SUB-TOPICS	SPECIFIC OBJECTIVES	TEACHING/LEARNING TECHNIQUES	MATERIALS/AIDS	ASSESSMENT	PERIODS
13. ELECTRICITY a) Construction of Simple Electric Circuits.	The pupil should be able to: (i) Identify different types of circuits.	By using the group discussion technique, the teacher to guide the pupils to identify different types of circuits.	1. Cells. 2. Wires. 3. Bulbs. 4. Switch.	Can the pupil identify different circuits?	4
	(ii) Construct different circuits.	1. By using the demonstration technique, the teacher to guide the pupils to construct different circuits. 2. By using the practice technique, the teacher to guide pupils to construct different circuits.	1. Cells. 2. Wires. 3. Bulbs. 4. Switch.	Can the pupil construct different circuits?	

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b) Dynamo and Generator.	The pupil should be able to: (i) Identify dynamo and generator.	By using the short lecture technique, the teacher to guide the pupils to identify dynamo and generator.	1. Actual dynamo. 2. Actual generator. 3. Pictures/charts showing dynamo and generator. 4. Tactile pictures/charts showing dynamo and generator.	Can the pupil identify dynamo and generator?	4
	(ii) Explain the uses of dynamo and generator.	By using the demonstration technique, the teacher to guide the pupils to explain the uses of dynamo and generator.	1. Chart showing uses of dynamo and Generator. 2. Tactile chart showing uses of dynamo and generator.	Can the pupil explain the uses of dynamo and generator?	
c) Motor.	The pupil should be able to: (i) Explain the term motor.	By using the short lecture technique, the teacher to guide the pupils to explain the term motor.	1. Motor. 2. Diagram of motor. 3. Diagram of motor in Braille.	Can the pupil explain the term motor?	4

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	(ii) Explain uses of motor.	By using the group discussion technique, the teacher to guide the pupils to explain uses of motor.	1.Actual motor. 2. Diagram of motor. 3. Diagram of motor in Braille.	Can the pupil explain the uses of motor?	
14. MAGNETS a) Magnetic Compass.	The pupil should be able to: (i) Explain the meaning of magnetic compass.	By using the short lecture technique, the teacher to guide pupils to explain the meaning of magnetic compass.	1. Magnetic compass. 2. Chart/diagram of magnetic compass. 3. Tactile chart/ diagram of magnetic compass.	Can the pupil explain the meaning of a magnetic compass?	4
	(ii) Draw the magnetic compass.	By using the drawing technique, the teacher to guide the pupils to draw magnetic compass.	1. Chart/diagram of magnetic compass. 2. Tactile chart/ diagram of magnetic compass.	Can the pupil draw the magnetic compass?	
b) Uses of Magnetic Compass.	The pupil should be able to mention the uses of a magnetic compass.	1. The teacher to guide pupils to read textbooks on the uses of magnetic compass. 2. By using the group discussion technique, the teacher to guide the pupils to mention the uses of a magnetic compass.	1. Magnetic compass. 2. Chart/diagram of magnetic compass. 3. Tactile chart/diagram of a magnetic compass.	Can the pupil mention the uses of a magnetic compass?	4

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c) Electromagnetism.	The pupil should be able to: (i) Give the meaning of the term electromagnetism.	By using the short lecture technique, the teacher to guide the pupils to give the meaning of electromagnetism.	1. Wire. 2. Nail. 3. Cell. 4. Pencil.	Can the pupil give the meaning of the term electromagnetism?	4
	(ii) Demonstrate the concept of electromagnetism.	By using the demonstration technique, the teacher to guide the pupils to demonstrate the concept of electromagnetism.	1. Wire. 2. Nail. 3. Cell. 4. Pencil.	Can the pupil demonstrate the concept of electromagnetism?	
	(iii) Identify the applications of electromagnetism.	1. By using the internet, the teacher to guide pupils to acquire information from the internet on applications of electromagnetism. 2. By using the group discussion technique, the teacher to guide the pupils to identify the applications of electromagnetism.	1. Picture of items that use electromagnetism. 2. Tactile picture of items that uses electromagnetism. 3. Computer with internet. 4. Computer with internet and narrator. 5. Actual items that uses electromagnetism.	Can the pupil identify the applications of electromagnetism?	

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16. MACHINES a) Hydro Electric Power Plants.	The pupil should be able to: (i) Identify the location of Hydro Electric Power plants in Tanzania.	By using the library research technique, the teacher to guide the pupils to identify the location of different Hydro Electric Power plants in Tanzania.	Video cassettes/CDs/DVD concerning Hydro electric power plants in Tanzania.	Can the pupil identify Hydro-electric power plants in Tanzania?	6
	(ii) Explain how electric power is transmitted and distributed.	1. The teacher to guide the pupils to read materials on how Hydro Electric Power (HEP) is transmitted in Tanzania. 2. By using the guest speaker technique the teacher to guide the pupils to discuss how Hydro Electric Power is transmitted and distributed in Zanzibar. 3. By using the group discussion technique the teacher to guide the pupils to explain how electricity is transmitted and distributed in Zanzibar. 4.By using the study visit technique, , the teacher to guide pupils to visit Fumba/Mtoni/Wesha Sub/Power stations to observe how Hydroelectric power is received and distributed.	1. Diagram of Hydroelectric power plant. 2. Tactile diagram of Hydroelectric power plant. 3. Chart showing HEP transmission and distribution. 4. Tactile chart showing HEP transmission and distribution plant.	Can the pupil explain how Electric power is transmitted and distributed?	

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b) Wind Turbines.	The pupil should be able to: (i) Explain the meaning of wind turbine.	By using the short lecture technique, the teacher to guide the pupils to explain the meaning of wind turbine.	1. Diagram of wind turbine. 2. Tactile diagram of wind turbine.	Can the pupil explain the meaning of wind turbine?	4
	(ii) Mention the uses of wind turbines.	1. By using the internet, the teacher to guide pupils to acquire information from the internet on the uses of wind turbines. 2. By using the group discussion technique, the teacher to guide the pupils to mention the uses of wind turbines.	1. Diagram of wind turbines. 2. Tactile diagram of wind turbines. 3. Computer with internet. 4. Computer with internet and narrator.	Can the pupil mention the uses of wind turbines?	
c) Solar Panels.	The pupil should be able to: (i) Explain the term solar panel.	By using the short lecture technique, the teacher to guide the pupils to explain the term "solar panel".	1. Drawing/ diagram of solar panel. 2. Actual solar panels. 3. Tactile drawing/diagram of solar panel.	Can the pupil explain the term solar panel?	4
	(ii) Mention the uses of solar panels.	1. The teacher to guide pupils to conduct library study on the uses of solar panels. 2. By using the study visit technique the teacher to guide pupils to visit areas and buildings that use solar electricity and learn its uses. 3. By using the group discussion technique, the teacher to guide the pupils to mention the uses of solar panels.	1. Solar panels. 2. Drawing/diagram of solar panel. 3. Slides showing the uses of solar panels. 4. Tactile drawing/diagram of solar panels. 5. Books concerning solar panels. 6. Books concerning solar panels in Braille.	Can the pupil mention the uses of solar panels?	