

**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY**



**SCIENCE AND TECHNOLOGY SYLLABUS
FOR BASIC EDUCATION
STANDARD III-VI**

**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY**

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FOR BASIC EDUCATION
STANDARD III-VI**

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Tanzania Institute of Education

P.O. Box 35094

Dar es Salaam

Tel: 255 22773005/+255 222771358

Fax: 255 222774420

Email: director.general@tie.go.tz

Website: www.tie.go.tz

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FOREWORD

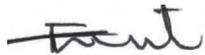
The revised 2014 Education and Training Policy has changed the structure of basic education. Some reforms in the curriculum have been introduced to facilitate its implementation. Some subjects have been retained or reorganised whereas new ones have been introduced in the Standard III- VI curriculum. The Ministry of Education, Science and Technology has, therefore, prepared this syllabus for the Science and Technology subject, for all English-medium schools and other educational stakeholders so as to meet the requirements of the Education and Training Policy.

The Science and Technology syllabus has been prepared from the Basic Curriculum for Standard III-VI of 2016. This syllabus emphasises teaching and learning which produces a well-equipped pupil. Through this syllabus, a pupil will develop the following skills: observation, discovery, creativity, scientific and technological studies.

This syllabus guides a teacher in the teaching of the Science and Technology subject. A teacher is not obliged to follow the sequence of competences as outlined in this syllabus but his/her duty is to consider the inter-connectedness among competences. In preparing a scheme of a work, a teacher has to consider the ability and interest of the pupils in learning. He/she is also advised to use the assessment criteria and benchmarks identified in this syllabus to assess the pupil's performance. However, in some cases the teacher is responsible for translating the benchmarks for the pupil's performance depending on his/her teaching plan.

The Ministry of Education, Science and Technology takes this opportunity to thank all the organisations, co-ordinators and experts who contributed to the designing and writing of this syllabus. It also expresses its gratitude to the teachers for their inputs and regular feedback which contributed significantly to the development of this syllabus.

We will appreciate to receive any relevant feedback from all stakeholders for continual improvement of the Science and Technology Syllabus. All the recommendations should be sent to the Director General of the Tanzania Institute of Education.



Prof. Eustella P. Bhalalusesa
Commissioner for Education
Ministry of Education, Science and Technology

1.0 Introduction

The Syllabus for Science and Technology subject has been prepared from the Basic Educational Curriculum for Standard III-VI, 2016. Science and Technology subject consists of technological skills, including Information and Communication Technology (ICT), experiments, different types of scientific and technological investigation and discovery.

The teaching of the Science and Technology subject will bring about the use of knowledge and scientific innovations in the pupil's everyday life. The knowledge of Science and Technology emphasises developing technology with sustainable resources, develop thinking skills and creativity in learning science and technology. This syllabus is divided into three sections, which are general subject introduction, general curriculum overview and syllabus content.

2.0 General Curriculum Overview

The curriculum process for Basic Education Standard III – VI comprises various aspects which show that the curriculum is holistic as it allows for the understanding of various aspects in an integrative way. This part presents some of the curriculum aspects which include Objectives of Basic Education, Competences of Basic Education for Standard III to VI, Importance and Objectives of Science and Technology, Main and Specific Competences, Teaching and Learning Science and Technology and Assessment of Learning.

2.1 Objectives of Basic Education

The objectives of Basic Education for Standard III-VI are to:

- (a) develop his/her skills in reading, writing, arithmetic and oral communication.
- (b) know, use and appreciate the Kiswahili and English languages.
- (c) know the foundation of the rule of law.
- (d) appreciate the culture of Tanzania and those of other countries.
- (e) enhance the ability of the pupil to think, create and solve problems.
- (f) enable the pupil to recognise the importance of ethics, integrity and accountability as qualities of a good citizen.
- (g) participate in games and sports and appreciate artistic activities.

- (h) discover and develop his/her talents and abilities.
- (i) appreciate and like to work.
- (j) recognise, appreciate and make use of technical skills.
- (k) join the next level of education and enhance a spirit of lifelong learning.

2.2 Competences of Primary Education for Standard III – VI

The competences for Basic Education intend to enable the pupils to demonstrate an ability to:

- (a) communicate correctly in Kiswahili and English orally and in writing.
- (b) read confidently and understand specified texts.
- (c) apply theoretical and mathematical principles in daily life situations.
- (d) apply scientific, technological and vocational skills in real life situations.
- (e) appreciate his/her culture and that of other communities.
- (f) respect the diverse beliefs and ideologies of the community in which he/she lives.
- (g) participate in games and sports and artistic activities.
- (h) respect oneself and others.
- (i) perform patriotic duties.
- (j) participate in different activities which are in line with his/her age.
- (k) participate in activities which enhance his/her logical and analytical thinking.
- (l) collaborate with other people to perform acceptable activities in the community.

2.3 Objectives of Science and Technology Subject

The Science and Technology subject intends to enable the pupil to:

- (a) build understanding and use knowledge to develop science and technology skills.
- (b) build knowledge of using science and technology in solving problems in daily life.
- (c) develop an ability to use different technological tools.

2.4 The Main and Specific Competences

The Science and Technology subject will be taught by developing the competences indicated on Table 1:

Table 1: Competences to be acquired by the pupil in Science and Technology Subject Standard III-VI

Main Competences	Specific Competences
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment. 1.2 Recognise various types of energy and their uses. 1.3 Identify scientific and technological theories.
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT). 2.2 Manage science-related skills. 2.3 Perform science-related practicals correctly.
3. Healthcare and the environment.	3.1 Apply cleanliness principles for health and good environment. 3.2 Apply principles of health for good health. 3.3 Recognise various system of the human body.

2.5 Teaching and Learning Activities

The teaching and learning of Science and Technology subject is based on actions, practicals and investigations aimed to attain the competence intended in the subject. The different teaching and learning participatory techniques which are used include the project, role play, discussion, case study, games, assessment test and practicals.

2.6 Assessment of Learning

The assessment of Science and Technology subject is aimed at assessing the pupil's ability to undertake practicals and scientific investigations, design and develop various scientific and technological objects, use science and technology informations in solving problems. Moreover, assessment evaluates the ability of a pupil in collecting analysing and interpreting information in respect to the quality and quantity and also use scientific and technological tools.

3.0 Syllabus Content

The content of this syllabus is organised and presented as per class level to include: Main Competences, Specific Competences, Activities to be Performed by Pupils, Assessment Criteria and Performance Standards (Benchmarks) as well as the number of periods for each specific competence.

3.1 Main Competence

Main competence is the ability of a pupil to do something correctly and effectively as intended after learning for a particular time. The main competence is developed by several specific competences that a pupil is expected to acquire while carrying out different activities.

3.2 Specific Competences

It is the ability of a pupil to carry out different activities for a specific period.

3.3 Activities to be Performed by the Pupil

These are activities which a pupil ought to carry out to attain a specific competence intended depending on his/her ability and age.

3.4 Assessment Criteria

Assessment criteria are efficiency standards a pupil attains while undertaking a specific competence.

3.5 Benchmarking

Benchmarking is the extent of achievement for each activity performed by a pupil.

3.6 Number of Periods

This refers to the time estimated to be used in the process of teaching and learning according to the specific competence and activities to be performed by a pupil. The total number of periods in the Science and Technology subject is five per week, and each period takes 40 minutes. The number of periods in each specific competence can be changed depending on the teaching and learning circumstances.

3.7 STANDARD III CONTENTS

Table 2: Competences for Standard III

Main Competence	Specific Competence
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment. 1.2 Recognise various types of energy and their uses. 1.3 Identify scientific and technological theories.
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT). 2.2 Manage science-related skills. 2.3 Perform science-related practicals correctly.
3. Healthcare and the environment.	3.1 Apply cleanliness principles for health and good environment. 3.2 Apply health principles for good health. 3.3 Recognise various systems in the human body.

Syllabus Contents

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment.	a) Recognise living and non-living things in the environment.	Living and non-living things in the environment have been recognised correctly.	Recognize living and non-living things in the environment.	Recognise and mention few living and non-living things in the environment.	Recognise living and non-living things in the environment are recognised and explained using examples.	Recognise and explain and then differentiate living and non-living things in the environment.	21
		b) Explain how to take precautions and safety measures against dangerous and poisonous organisms.	Precautions and safety measures against dangerous and poisonous organisms have been explained correctly.	Explain how to take precautions and safety measures against dangerous and poisonous organism unsystematically.	Explain how to take precautions and safety measures against dangerous and poisonous organisms.	Explain how to take precautions and safety measures against dangerous and poisonous organisms correctly using real examples.	Explain how to take precautions and safety measures against dangerous and poisonous organisms and advise others.	
		c) Explain how to value living and non-living things in the environment.	How to value living and non-living things in the environment has been explained correctly.	Explain how to value living and non-living things without following important aspects.	Explain how to value living and non-living things in the environment by considering some aspects.	Explain how to value living and non-living things in the environment correctly.	Explain how to value living and non-living things in the environment by using real examples.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
	1.2 Recognise various types of energy and their uses.	a) Explain the concept of energy.	The concept of energy has been explained correctly by considering the aspects of meaning, type and importance.	Explain the concept of energy through trial and error.	Explain the concept of energy by considering some of the aspects.	Explain clearly the concept of energy.	Explain clearly the concept of energy using real examples.	14
		b) Demonstrate how sound, heat, and light travel.	Demonstration on how sound, heat and light energy travel has been done correctly.	Demonstrate how sound, heat and light energy travel without following procedures.	Demonstrate how sound, heat and light energy travel by following some few procedures.	Demonstrate how sound, heat and light energy travel correctly.	Demonstrate how light, heat and sound energy travel and explain how they are done.	
		c) Explain the uses of sound, heat and light energy.	The use of sound, heat and light energy has been explained correctly.	Explain the use of sound, heat and light energy without clarity.	Explain some of the uses of sound, heat and light energy with a few mistakes.	Explain the use of sound, heat and light energy correctly.	Explain with examples the use of sound, heat and light energy correctly.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
	1.3 Identify scientific and technological theories.	a) Explain the concept of matter.	The concept of matter has been explained correctly by considering the aspects of meaning, type and importance.	The concept of matter has been explained without using the important aspects.	The concept of matter has been explained using some of the aspects.	The concept of matter is explained clearly using all aspects and examples.	The concept of matter has been explained using all aspects and real examples.	28
b) Perform activities concerning characteristics of matter.		Activities on characteristics of matter have been performed correctly.	Perform activities concerning characteristics of matter without following procedures.	Perform some activities concerning characteristics of matter.	Perform activities concerning characteristics of matter correctly.	Perform activities concerning characteristics of matter and explain the relationship between different states of matter correctly.		
c) Make a model which can float on water.		A model which can float on water is made correctly.	Make a model which can float on water without considering the main principles.	Using some principles, he/she can make a model which can float on water.	A model which can float on water is made properly.	Make different models which can float on water correctly.		

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		d) Make a model which can fly in air.	A model which can fly is made properly.	A model which can fly is made with some mistakes.	A model which can fly in air is made without considering some of the principles.	A model which can fly in air is made properly by considering all principles correctly.	Different models which can fly in air are made and explained with examples.	
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT).	a) Explain the concept of communication.	Concept of communication has been explained by correctly considering the aspects of meaning, steps and importance.	Explain the concept of communication without using important steps.	By considering some steps, she/he can explain the concept of communication.	Explain the concept of communication correctly.	Explain the concept of communication using examples.	21
		b) Demonstrate how to use a mobile telephone.	Demonstration on how to use mobile telephone has been done by following procedures.	Demonstrate how to use a mobile telephone without following procedures.	By considering some principles he/she can use a mobile telephone.	Able to use a mobile telephone correctly by following all procedures.	Able to use mobile telephone and can explain the steps of using it.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		c) Explain how to use a telephone in learning.	How to use telephones in learning has been explained correctly.	Explain how to use a telephone in learning without clear explanations.	Explain some of the steps on how to use a telephone in learning.	Explain how to use a telephone in learning clearly using examples.	Explain how to use a telephone in learning using examples and giving advice on taking precautions when using it.	
	2.2 Manage science-related skills.	a) Identify tools used to simplify work.	Tools for simplifying work have been identified correctly.	Identify few tools for simplifying work without clear explanations.	Can identify some tools for simplifying work and differentiates them.	The tools for simplifying work are identified and differentiated with clear explanations.	Can identify and differentiate tools for simplifying work and explain how they are used.	14
		b) Use of tools for simplifying work.	Tools for simplifying work have been used correctly.	Use tools for simplifying work without following procedures for using them.	Use tools for simplifying work by following a few procedures.	Use tools for simplifying work by following procedures correctly.	Use tools for simplifying work and explain to others how to use them.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		c) Practise how to keep tools used to simplify work.	Practise of how to keep tools used to simplify work has been done correctly.	Practise how to keep tools used to simplify work without using principles.	Practise some few procedures on how to keep tools for simplifying work.	Practise how to keep tools for simplifying work properly.	Practise how to keep tools for simplifying work and explain the importance of keeping them.	
	2.3 Perform science related practicals correctly.	a) Explain the concept of measurements in doing scientific experiments.	Concept of measurement in doing scientific experiments have been explained correctly by considering meaning, type and importance.	Explain the concept of measurements in doing experiments without considering the important aspects.	By considering some important aspects, he/she can explain the concept of measurements in doing experiments.	The concept of measurements in doing experiments is explained correctly.	Explain the concept of measurements and explain precautions to be taken when measuring things.	21
		b) Use non standard measurement.	Activities of using non-standard measurement have been done correctly.	Use non-standard measurement without following procedures.	Use non-standard measurement.	Uses non-standard measurement correctly.	Use non-standard measurement and explain how they are used.	
		c) Use standard measurement in scientific experiments.	Activities of using standard measurement in scientific experiments have been done correctly.	Can use standard measurement without considering experiment procedures.	Perform some scientific experiments using standard measurement.	Use standard measurement in scientific experiments by giving real examples.	Use standard measurement in scientific experiments and differentiate them.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
3. Healthcare and Environment.	3.1 Apply cleanliness principles for a healthy and good environment.	a) Explain the importance of body and garments cleanliness.	The importance of body and garments cleanliness has been explained correctly.	The importance of body and garments cleanliness is explained without clear information.	Explain the importance of body and garments cleanliness and being understood to a certain extent.	The importance of body and garments cleanliness is explained correctly.	Explain clearly with examples the importance of body and garments cleanliness.	35
		b) Keep tools for cleaning body and garments.	Tools for cleaning body and garments are kept correctly.	Keep tools for garments and body cleaning unsystematically.	Can keep some body and garments cleanliness tools systematically.	In a correct way, he/she is able to keep body and garments cleanliness tools in a systemic way.	Keep tools for body and garments cleanliness properly and advise others to keep them.	
		c) Maintain the habit of body and garments cleanliness.	The habit of maintaining body hygiene and garments cleanliness has been demonstrated correctly.	Demonstrate how to maintain body hygiene and garments cleanliness at low level.	Demonstrate the habit of maintaining body hygiene and garments cleanliness.	Using procedures he/she can demonstrate the habit of maintaining body hygiene and garments cleanliness.	Using procedures, he/she can show the habit of maintaining body hygiene and garments cleanliness and advising others.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		d) Explain the concept of First Aid.	Concept of First Aid has been explained correctly.	First Aid concept is explained clear information.	By considering some of the important aspects, he/she can explain the concept of First Aid.	Concept of First Aid is explained correctly using real examples.	Explain the concept of First Aid and advising others.	
		e) Give First Aid to a person who has been bitten by poisonous/dangerous insects.	First Aid to the person who has been bitten by dangerous or poisonous insects has been done properly.	Give first Aid to a person who has been bitten by dangerous or poisonous insects without considering important procedures.	By considering some of the principles and procedures, can practice giving first Aid to the person who has been bitten by dangerous/poisonous insects.	Give first Aid to a person who has been bitten by dangerous/poisonous insects properly clearly by considering principles and procedures.	By considering principles and procedures, he/she can give first aid to the person who has been bitten by different dangerous/poisonous insects.	
	3.2 Apply health principles for good health.	a) Explain the concept of a balanced diet.	The concept of a balanced diet has been explained correctly.	Explain the meaning of a balanced diet unclearly.	Explain the meaning of balanced diet and its components.	Explain the meaning and importance of a balanced diet and mention its components correctly.	Explain the meaning, importance of a balanced diet and mentions the components that form it through real examples.	20

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Arrange the food components which form a balanced diet.	Arrangement of food components which form a balanced diet has been done correctly.	Arrange the food components which form a balanced diet without following procedures.	Arrange some of the food components which form a balanced diet.	Arrange a balanced diet by considering all components of food correctly.	Arrange the food components which form a balanced diet properly and give real examples.	
		c) Explain ways of preventing HIV.	Ways of preventing HIV have been explained correctly.	Explain ways of preventing HIV without correct explanations.	Explain some ways of preventing HIV.	Explain ways of preventing HIV correctly.	Explain with examples and give advice on how to prevent HIV correctly.	
	3.3 Recognise various systems in human body.	a) Explain the concept of a digestive system.	The concept of a digestive system has been explained correctly by considering its meaning and importance.	Explain the concept of a digestive system without clear explanations.	Explain the meaning and importance of a digestive system.	The concept of digestive system is explained correctly basing on examples.	The concept of digestive system is well explained basing on the interrelation between different parts of the system.	21
		b) Identify parts of the digestive system.	Parts of the digestive system have been identified correctly.	Parts of the digestive system are identified without proper explanations.	Few parts of the digestive system are identified.	Parts of the digestive system are identified correctly.	Parts of the digestive system are identified, differentiated and explanation on each part made.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		c) Draw the digestive system.	The digestive system has been drawn correctly.	The digestive system is drawn without labelling.	The digestive system is drawn with some few labelling.	The digestive system is drawn and labelled correctly.	Digestive system is well drawn and labelled correctly and its functions are explained properly.	

3.8 STANDARD IV CONTENTS

Table 2: Competences for Standard IV

Main Competence	Specific Competence
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment. 1.2 Recognise various types of energy and their uses. 1.3 Identify scientific and technological theories.
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT). 2.2 Manage science-related skills. 2.3 Perform science-related practicals correctly.
3. Understand healthcare and environment	3.1 Apply cleanliness principles for a healthy and good environment. 3.2 Apply health principles for good health. 3.3 Recognise various systems in the human body.

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Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment.	a) Identify actions which destroy the safety of the environment.	Actions which can destroy the environment have been identified clearly.	Identify actions which destroy the environment without clear explanations.	Identify by mentioning some actions that destroy the environment.	The major actions which destroy the safety of the environment are identified with examples.	Identify through explanations major actions which destroy the environment and advise others to stop these acts.	21
		b) Show the habit of maintaining cleanliness and air safety.	The habit of maintaining cleanliness and safety of air has been shown clearly.	Show the habit of maintaining cleanliness and safety of air at a lower level.	Show some of the habits of maintaining cleanliness and air safety at a moderate level.	The habit of maintaining cleanliness and safety of air is shown clearly.	Show the habit of maintaining cleanliness and safety of air and advise others to develop it.	
		c) Perform activities which verify the important needs for the living things which are water, heat, air, light and soil.	Activities of verifying the important needs for living things have been performed correctly.	Activities to verify the importance of water, heat, air, light and soil are performed unsystematically.	Perform some activities to verify the important needs of living things.	Activities to verify the importance of water, heat, air, light and soil for living things are performed correctly.	Perform experiments to verify the importance of water, heat, air, light and soil for living things and explain their relationships.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
	1.2 Recognise various types of energy and their uses.	a) Identify sources of electric energy.	Sources of electric energy have been identified clearly.	Identify sources of electric energy without clear explanation.	Identify and mention some sources of electric energy.	Identify the main sources of electrical energy clearly.	Identify sources of electric energy and give some real examples.	21
		b) Identify things which allow light to pass through by doing experiments.	Experiments to identify the things which allow light to pass through have been done clearly by considering scientific procedures.	Perform activities to identify things which allow light to pass through without considering scientific procedures.	Perform experiment of identifying things which allow light to penetrate using a few procedures.	Perform activities to identify things which allow light to pass through clearly by considering scientific procedures.	Perform experiment to identify things which allow light to pass through by following all scientific procedures and giving real examples.	
		c) Do activities which show how shadows occur.	Actions to show how shadow occur have been done clearly.	Show how shadows occur without following any procedures.	Show how shadows occur.	Show how shadows occur clearly by following procedures.	Show how shadows occur by following procedures and give examples.	
	1.3 Identify scientific and technological theories.	a) Perform an experiment on three states of water.	Experiment to show three states of water has been done clearly.	Perform experiment to show three states of water without following any procedures.	Experiment to show changes on three states of water has been done.	Perform activities to show three states of water clearly.	Perform experiment to show three states of water and give some examples.	21

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Do experiments on freezing point of water.	Experiments on freezing point of water have been done clearly.	Perform experiment showing freezing point of water unclearly.	By considering some procedures, he/she can do experiment to show freezing point of water.	Perform experiment to show freezing point of water clearly by considering main procedures.	By following all procedures, he/she can do experiment to show freezing point of water and give some real examples.	
		c) Do experiments on boiling point of water.	Experiment on boiling point of water have been done clearly.	Perform experiment showing boiling point of water without following procedures.	By considering some procedures, he/she can do experiments to show boiling point of water.	Perform experiments to show boiling point of water clearly by considering main procedures.	By following all scientific procedures, he/she can do experiments to show boiling point of water and give explanations.	
2. Understand the basics of Science and Technology.	2.1 Apply information and communication technology (ICT).	a) Identify the means of communication.	Means of communication have been identified clearly.	Identify means of communication without clear explanations.	Identify and mention some of the means of communication.	Identify major means of communication with examples found in surrounding area.	Identifies and explain means of communication and advise others to use them.	20

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Perform activities on how to use a radio and television set.	Practice to use a radio and television set has been done clearly.	Practise to use a radio and television set without clear procedures	Practise how to use a radio and television set by following some procedures.	Practise to use a radio and television set by considering procedures correctly.	Practise to use a radio and television set by considering procedures and advise others on how to use them correctly.	
		c) Value tools for information and communication technology.	Tools for information and communication technology have been kept correctly.	Keep tools for information and communication technology unsystemically.	Value some tools for information and communication technology.	Use and value tools for ICT correctly.	Values tools for ICT and advise others to keep them.	
	2.2 Manage science related skills.	a) Explain precautions to take when using refrigerators and various cookers.	Precautions to take when using refrigerators and cookers have been explained correctly.	Precautions to take when using refrigerators and cookers are explained without clear explanations.	Few precautions taken when using refrigerators and various cookers are explained correctly.	The main precautions when using refrigerators and cookers are explained correctly.	The main precautions of using refrigerators and cookers are explained correctly and giving advice to others on how to use them has been given.	21

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Demonstrate how to use cookers.	Demonstrations on how to use cookers have been done correctly.	Demonstrate how to use cookers without considering procedures.	Apply a few procedures to demonstrate how to use cookers correctly.	Demonstrations on how to use cookers are done properly by considering all procedures.	Apply procedures to demonstrate how to use cookers and investigate the implication of the actions.	
		c) Demonstrate how to use a refrigerator.	Demonstrations on how to use refrigerators have been done correctly.	Demonstrate how to use a refrigerator without considering procedures.	Apply few procedures to demonstrate how to use a refrigerator correctly.	Demonstrations on how to use a refrigerator are done properly.	Apply procedures to demonstrate how to use refrigerators and explain the importance of using them correctly.	
	2.3 Perform science related practicals correctly.	a) Explain the concept of scientific experiments.	The concept of scientific experiments has been explained correctly.	The concept of scientific experiments is explained without following procedures.	The concept of scientific experiments is explained using some of the procedures.	The concept of scientific experiments has been explained correctly by using examples.	The concept of scientific experiments has been explained with critical examples.	21

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Identify the steps of conducting a scientific experiment.	Steps towards scientific experiments have been identified correctly.	Steps towards scientific experiments are identified without clear explanations.	Some steps of scientific experiments are identified and mentioned with clear explanations.	The steps of scientific experiments are identified correctly.	Can identify and describe steps of doing scientific experiments and their uses	
		c) Do experiments on the needs of living things.	Experiments on living organisms needs have been done correctly by considering scientific procedures.	Experiments on living organisms needs are done without following procedures.	Experiments on living organisms needs are done using some few procedures.	Experiments on living organisms needs are done using scientific procedures correctly.	Experiments on living organisms needs are done using scientific procedures and the importance of each needs is explained correctly.	
3. Healthcare and the Environment.	3.1 Apply cleanliness principles for a healthy and good environment.	a) Identify the sources of dirt and wastes in the environment.	Sources of dirt and wastes have been identified correctly.	Sources of dirt and waste product are identified without clear understanding.	Identifies through mentioning some few sources of dirt and waste products.	Identifies the main sources of dirt and waste products and give real examples.	Identifies sources of dirt and waste products and advise on how to stop them.	21

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Indicate the habit of maintaining cleanliness at home and the school environment.	The habit of maintaining home and the school environments cleanliness has been indicated correctly.	Maintenance of home and school environmental cleanliness habit is indicated at a very low level.	Maintenance of home and school environmental cleanliness habit is indicated unsatisfactorily.	Maintenance of home and school environmental cleanliness habit is indicated at a high level correctly.	Maintenance of home and school environmental cleanliness habit is indicated and advice is given to maintain them.	
		c) Demonstrate how to give First Aid to a person who has fainted.	Demonstration on how to give First Aid to a fainted person has been done correctly.	Demonstrate how to give First Aid to a fainted person without considering procedures.	Demonstrate how to give First Aid to a fainted person by considering some procedures.	Procedures for giving First Aid to a fainted person are demonstrated correctly.	Demonstrate how to give First Aid to a fainted person correctly and explain the benefit of giving it.	
	3.2 Apply health principles for good health.	a) Identify infectious and non-infectious diseases.	Infectious and non-infectious diseases have been identified correctly.	Infectious and non-infectious diseases are identified without clear explanations.	Identify some infectious and non-infectious diseases correctly.	Identify the infectious and non-infectious diseases correctly.	Identify the infectious and non-infectious diseases and explain precautions to be taken against them.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Identify ways of preventing and controlling epidemics.	Ways of preventing and control epidemics have been identified correctly.	Identify ways of preventing and controlling epidemics without clear explanations.	Identify a few ways of preventing and controlling epidemics correctly.	Identify the ways of preventing and controlling epidemics correctly.	Identify the ways of preventing and controlling epidemics and taking precautions.	
		c) Explain the concept of body immunity.	The concept of body immunity has been explained using all aspects.	The concept of body immunity is explained without a clear explanation.	The concept of body immunity is explained using some important aspects.	The concept of body immunity is explained correctly by giving real examples.	Explain with examples the concept of body immunity and relate it to the body immune deficiency syndrome.	
		d) Show the habit of caring for and respecting HIV and AIDS victims.	The habit of caring for and respecting HIV/AIDS victims has been shown clearly.	The habit of caring for and respecting HIV/AIDS victims is shown at a very low level.	Show some habit of caring for and respecting HIV/AIDS victims.	Give help to HIV/AIDS victims.	Give help by using polite language to people living with HIV/AIDS.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
	3.3 Recognise various systems in human body.	a) Explain the defects that may occur in the digestive system.	The defects that may occur in the digestive system have been explained correctly.	Explain the defects that may occur in the digestive system unclearly.	Explain some of the defects that may occur in the digestive system.	Explain clearly the main defects that may occur in the digestive system.	Explains the defects that may occur in the digestive system correctly and advise others to take precautions.	21
		b) Explain habits to prevent the occurrence of the problems in the digestive system.	Habits of preventing occurrence of the problems in the digestive system have been explained correctly.	Give unclear explanations on the habits of preventing occurrence of the problems in digestive system.	Explain some of the habits that prevent the occurrence of the problems in the digestive system.	The habits of preventing the occurrence of the problems in digestive system are explained correctly.	Explains habits which prevent the occurrence of the problems in the digestive system using examples.	
		c) Demonstrate proper eating habits.	Proper eating habits have been demonstrated correctly.	Poorly demonstrate proper eating habits.	Demonstrate few proper eating habits.	Proper eating habits are clearly demonstrated.	Demonstrate clearly proper eating habits and encourage others to practice them.	

3.9 STANDARD V CONTENTS

Table 3: Competences for Standard V

Main Competence	Specific Competence
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment. 1.2 Recognise various types of energy and their uses. 1.3 Identify scientific and technological theories.
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT). 2.2 Manage science-related skills. 2.3 Perform science-related practicals correctly.
3. Understand health care and the environment.	3.1 Apply cleanliness principles for a healthy and good environment. 3.2 Apply health principles for good health. 3.3 Recognise various systems in the human body.

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Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment.	a) Identify the groups of living things.	Groups of living things have been identified correctly.	Identify groups of living things without a clear explanation.	Mention some of the main groups of living things.	Identify the main groups of living things through real examples.	Identify the groups of living things and describe their characteristics.	30
		b) Explain how plants make their food (photosynthesis)	Explanations on how plants make their food have been made correctly.	Explain unclearly how plants make their food without using clear explanation.	Explain some of the steps on how plants make their food.	Explain how plants make their food clearly (photosynthesis).	Explain how plants make their food clearly and help others to understand the process.	
		c) Explain the concept of reproduction in animals and plants.	The concept of reproduction in animals and plants has been explained correctly.	Explain unclearly the concept of reproduction in animals and plants.	Explain the concept of reproduction in animals and plants with a few details.	Explain clearly the concept of reproduction in animals and plants in detail.	Explain clearly the concept of reproduction in animals and plants with examples.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		d) Explain the interdependence between living things in the environment.	A clear explanation of the interdependence between living things in the environment has been made correctly.	Explain the interdependence between living things in the environment with an unclear explanation.	Explain some of the ways of interdependence between living things in the environment.	Give a clear explanation on the interdependence between living things in the environment.	Clearly explain the interdependence between living things in the environment with concrete examples.	
		e) Explain the concept of adaptation of living things to their environment.	Concept of adaptation of living things to their environment has been explained correctly.	Explain unclearly the concept of adaptation of living things to their environment.	Explain the concept of adaptation of living things to their environment by pointing out some of main features.	Explain clearly the concept of adaptation of living things to the environment by pointing out the main features.	Explain clearly with real examples the concept of adaptation of living things to the environment by pointing out the main features.	
	1.2 Recognise various types of energy and their uses.	a) Demonstrate the uses of convex and concave lenses.	Demonstration on uses of concave and convex lenses has been done correctly.	Demonstrate the uses of concave and convex lenses without applying scientific procedures.	Demonstrate the use of concave and convex lenses by applying some of the scientific procedures.	Uses of concave and convex lenses can clearly be demonstrated.	Demonstrate the uses of concave and convex lenses using scientific procedures and providing examples of their uses.	24

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Conduct experiments on series and parallel electrical circuits.	Experiments on series and parallel circuits have been done correctly.	Conduct experiments on series and parallel circuits without applying scientific procedures.	Apply some scientific procedures to do experiments on series and parallel circuits.	Conduct experiments correctly on series and parallel circuits according to scientific procedures.	Conduct experiments correctly on series and parallel circuits by applying scientific procedures and explains their differences.	
		c) Perform activities on magnetic principles.	Demonstration on magnetic principles has been done correctly and clearly.	Demonstrate magnetic principles without applying scientific procedures.	Demonstrate some of the magnetic principles by applying some of the scientific procedures.	Apply scientific procedures to demonstrate magnetic principles correctly.	Demonstrate actions to identify magnetic principles and explain their uses correctly.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		d) Demonstrate the properties of light when it falls on a plain mirror.	Experiment on properties of light when it falls on a plain mirror has been demonstrated correctly.	Perform an experiment to demonstrate the properties of light when it falls on a plain mirror without applying scientific procedures.	By applying scientific procedures, he/she can do an experiment to demonstrate the properties of light when it falls on a plain mirror.	Demonstrate correctly the properties of light when falls on plain mirror by applying scientific procedures.	Perform correctly an experiment to demonstrate the properties of light and their uses when it falls on a plain mirror and relate them to real examples in the surrounding.	
	1.3 Identify scientific and technological theories.	a) Explain forces which cause changes in matter.	Forces which cause changes in matter have been explained correctly.	Explain forces which cause changes in matter unclearly.	Explains some of the forces which cause changes in matter.	The main forces which cause changes in matter can be explained correctly.	Forces which cause changes in matter and their uses can be explained clearly.	18
		b) Perform activities to show how forces cause changes in matter.	Activities to show how forces cause changes in matter have been performed correctly.	Without using procedures he/she can perform activities to show how forces cause changes in matter.	By applying procedures he/she can perform some activities to show how forces cause changes in matter.	By applying procedures he/she can perform activities to show forces which cause changes in matter correctly.	By applying procedures he/she can perform activities to show forces which cause changes in matter correctly and give explanation.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		c) Differentiate the concepts of physical and chemical changes.	Concepts of physical and chemical changes have been differentiated correctly.	Concepts of physical and chemical change can be explained without clear explanations.	Can explain only one concept either physical or chemical change without showing their differences.	Can differentiate the concepts of physical and chemical changes correctly.	Is able to differentiate the concepts of physical and chemical changes through examples.	
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT).	a) Explain the concept of a computer.	The concept of a computer has been explained correctly.	Explain unclearly the concept of a computer.	By considering some aspects the concept of a computer can be explained.	The concept of a computer can be explained clearly by considering the main aspects.	The concept of a computer can be explained by giving examples.	28
		b) Explain precautions to be taken when using a computer.	Precautions to be taken when using a computer have been explained correctly.	Gives unclear explanation on the precautions to be taken when using a computer.	Explain some precautions to be taken when using a computer.	Give a correct explanation of the precautions to be taken when using a computer.	Give a correct explanation on the precautions to be taken when using a computer with real examples.	
		c) Use a computer word process programmes.	Computer word processing programmes have been used properly.	Use a computer word processing programmes without applying proper procedures.	Use a computer word processing programme by applying some of the procedures.	Use a computer word processing programme by applying all the procedures correctly.	By using procedures, he/she can use a computer word processing programme and explain their importance.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		d) Use computer game programme to promote learning skills (3Rs).	Computer game programme have been used to promote learning skills correctly.	Use a computer game programme to promote learning skills without applying correct procedures.	Use a computer game programme to promote learning skills by applying some of the procedures.	Use a computer game programme to promote learning skills correctly.	By using procedures, he/she can use a computer game programme to promote learning skills and differentiate those games.	
	2.2 Manage science related skills.	a) Identify simple machines.	Simple machines have been identified correctly.	Identify simple machines without clear explanation.	Identify simple machines and some of their components.	Identify simple machines and their components correctly.	Identify simple machines with examples.	12
		b) Demonstrate the position of effort, load and fulcrum on a lever.	Demonstration of the position of effort, load and fulcrum has been done correctly.	Demonstrate the position of effort, load and fulcrum incorrectly.	Demonstrate some of the actions to show position of effort, load and fulcrum.	Demonstration of the position of effort, load and fulcrum is done correctly.	Demonstrate actions to show the position of effort, load and fulcrum with real examples.	
		c) Perform activities on simple machines.	Activities on simple machines have been performed correctly.	Perform activities on simple machines wrongly.	Perform activities on simple machines, using some of the aspects.	Perform activities on simple machines by applying all important aspects correctly.	Perform activities on simple machines and explain how they are used.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
	2.3 Perform science-related practicals correctly.	a) Do scientific experiments on heat energy.	Experiment on heat energy have been done by applying correct scientific procedures.	Perform experiments on heat energy without applying scientific procedures.	Perform experiments on heat energy by applying some steps of scientific procedures.	Perform experiments on heat energy by applying main steps of scientific procedures correctly.	Perform experiments on heat energy correctly and explain their uses.	18
b) Do scientific experiments on light energy by using concave and convex mirror.		Experiments on light energy using the concave and convex mirror have been done by applying scientific procedures correctly.	Perform experiments on light energy by using the concave and convex mirror without applying scientific procedures.	Perform some experiments on light energy using the concave and convex mirror by applying steps of scientific procedures.	Perform experiments on light energy using the concave and convex mirror correctly by applying scientific procedures.	Perform experiments on light energy using a concave and convex mirror correctly by applying scientific procedures and explain their uses in real life situations.		
c) Do experiments on bending of light energy using lenses.		Experiments on bending of light energy using lenses have been done correctly.	Perform experiments on bending of light energy using lenses without applying scientific procedures.	Perform some experiments on bending of light energy using one type of lense.	Perform experiments on bending of light energy using lenses correctly.	Perform experiments on bending of light energy using lenses correctly with examples.		

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
3. Health care and the Environment.	3.1 Apply cleanliness principles for a healthy and good environment.	a) Maintain cleanliness and smartness of body and garments.	Maintenance of cleanliness, and smartness of the body and garments have been done correctly.	Maintain cleanliness and smartness of the body and garments without applying proper aspects.	Maintain cleanliness and smartness of the body and garments by applying some proper aspects.	Maintain high standard of cleanliness and smartness of the body and garments.	Maintain high standard of cleanliness and smartness of the body and garments by encouraging others to do the same.	18
		b) Perform actions which destroy insects that transmit diseases.	Actions which destroy insects that transmit diseases have been performed properly.	Perform, actions of destroying insects which transmit diseases without applying proper aspects.	By applying some procedures, he/she can perform actions of destroying insects which transmit diseases.	Destroy insects which transmit diseases correctly.	By applying procedures, he/she can destroy the insects which transmit diseases and explain the same to others.	
		c) Give First Aid to a person burnt by fire or hot fluid.	Practising to give First Aid to a person burnt by fire or hot fluid have been done correctly.	Practise to give First Aid to a person burnt by fire or hot fluid without considering important steps.	By considering some of the steps, he/she can practise to give First Aid to a person burnt by fire or hot fluid.	The main practices to give First Aid to a person burnt by fire or hot fluid have been done correctly.	Give First Aid to a person burnt by fire or hot fluid and mention other things that may be used in such situations.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
	3.2 Apply health principles for good health.	a) Identify health principles.	Health principles have been identified correctly.	Identify health principles without a clear explanation.	Identify and mention only some of the health principles.	Identify correctly the main health principles.	Identify correctly the main health principles and explain to others.	30
b) Explain the behaviour which help to maintain health.		Explanations of the behaviour which help to maintain health have been explained correctly.	Explain unclearly the behaviour which help to maintain health.	Explain only some of the behaviour which help to maintain health.	Explain clearly the behaviour which help to maintain health.	Explain clearly the behaviour which help to maintain health with real examples.		
c) Explain the concept of epidemics their causes, symptoms and effects.		Concept of epidemics has been explained correctly.	Explain the concept of epidemics without applying the proper aspects.	Explain some of the aspects of the concept of epidemics.	Explain the concept of epidemic diseases correctly with examples.	Elaborate on the concept of epidemics correctly with examples.		
d) Explain the means by which epidemics spread.		Means by which epidemics spread have been explained correctly.	Explain the means by which epidemics spread.	Explain some of the means by which epidemics spread.	Explain the means by which epidemics spread by applying the proper aspects correctly.	Explain means by which epidemics spread by applying the proper aspects correctly and advising to others.		

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		e) Explain main things to be considered by Antiretroviral (ARVs) users.	Main things to be considered by Antiretroviral (ARVs) users have been explained clearly.	Explain without clarity the main things to be considered by Antiretroviral (ARVs) users.	Explain only some of the main things to be considered by Antiretroviral (ARVs) users clearly.	Explain the main things to be considered by Antiretroviral (ARVs) users correctly.	Explain with examples the main things to be considered by Antiretroviral (ARVs) users.	
	3.3 Recognise various systems in the human body.	a) Explain the concept of excretory system in the human body.	The concept of excretory system in the human body has been explained correctly.	Explain without clarity the concept of excretory system.	Explain the concept of excretory system by using some aspects.	Explain the concept of excretory system correctly.	Explain with examples the concept of excretory system correctly.	18
		b) Identify the lifestyles which may cause problems in the excretory system.	The lifestyles which may cause problems in the excretory system have been identified correctly.	Identify the lifestyles which may cause problems in the excretory system.	Identify some of the aspects of lifestyles which may cause problems in the excretory systems.	Identify the main lifestyles which may cause problems in the excretory system correctly.	Identify and explain with examples the lifestyles which may cause problems in the excretory system correctly.	

Main Competence	Specific Competence	Activities to be performed by the pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		c) Identify proper life styles to avoid problems in the excretory system of the human body.	Identify the proper lifestyles which cannot cause problems in the excretory system of the human body correctly.	Identify the proper lifestyles which cannot cause problems in the excretory system of the human body without a clear explanation.	Identify some of the proper lifestyles which cannot cause problems in the excretory system of the human body correctly.	Identify the main proper lifestyles which cannot cause problems in the excretory system of the human body correctly.	Identify the proper lifestyles which cannot cause problems in the excretory system of the human body correctly with real examples.	

3.10 STANDARD VI CONTENTS

Table 4: Competences for standard VI

Main Competence	Specific Competence
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment. 1.2 Recognise various types of energy and their uses. 1.3 Identify scientific and technological theories.
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT). 2.2 Manage science-related skills. 2.3 Perform science-related practicals correctly.
3. Understand health care and the environment.	3.1 Apply cleanliness principles for a healthy and good environment. 3.2 Apply health principles for good health. 3.3 Recognise various systems in human body.

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Main Competence	Specific Competence	Activities to be Performed by the Pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
1. Perform scientific investigation and technological discovery.	1.1 Investigate things that are in the environment.	a) Identify the gases which form air components.	Gases which form air components have been identified correctly.	Identify gases which form air components without clear elaborations.	Identify some of the gases which form air components.	Identify the gases which form air components correctly.	Identify the gases which form air components and explain their uses correctly.	25
		b) Identify essential needs for plant growth.	Essential needs for plant growth have been identified correctly.	Identify essential needs for plant growth without correct explanations.	Identify some of the essential needs for plant growth.	Identify the essential needs for plant growth correctly.	Identify the essential needs for plant growth and explain the effects of their absence.	
		c) Perform experiments to prove how photosynthesis takes place in plants.	The experiments to prove how photosynthesis takes place in plants have been done correctly.	Perform experiments to prove how photosynthesis takes place in plants without considering important procedures.	Perform experiments to prove how photosynthesis takes place in plants by considering some important procedures.	Perform experiments to prove how photosynthesis takes place in plants correctly.	Perform experiments to prove how photosynthesis takes place in plants correctly and explain its importance.	
		d) Identify types of soil.	Types of soil have been identified correctly.	Identify the types of soil without clear explanation.	Identify some of the types of soil correctly.	Identify types of soil correctly with clear explanations.	Identify main types of soil correctly and describe their characteristics.	

Main Competence	Specific Competence	Activities to be Performed by the Pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		e) Identify activities which cause soil effects.	Activities which cause soil effects have been identified correctly.	Identify activities which cause soil effects without clear explanations.	Mention some activities which cause soil effects.	Identify activities which cause soil effects with examples and clear explanations.	Identify activities which cause soil effects with examples and explain their effects correctly.	
		f) Perform soil conservation activities.	Activities to conserve the soil have been performed correctly.	Perform activities to conserve the soil without applying scientific procedures.	Perform some activities to conserve the soil by applying some proper procedures.	Perform activities to conserve the soil correctly.	Perform activities to conserve the soil correctly and explain their benefits.	
	1.2 Recognise various types of energy and their uses.	a) Perform activities which prove the Ohm's law in electrical circuit.	Activities to prove Ohm's law in electrical circuit have been performed.	Perform activities to prove Ohm's law in an electric circuit without applying scientific principles.	Perform some of the activities to prove Ohm's law in an electric circuit.	Perform activities to prove Ohm's law in an electric circuit with examples.	Perform activities to prove Ohm's law in an electric circuit and explain their importance.	25

Main Competence	Specific Competence	Activities to be Performed by the Pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		b) Explain the concept of protecting an electric circuit and buildings against high voltage current.	The concept of protecting an electric circuit and buildings against high voltage current has been explained correctly.	Explain the concept of protecting an electric circuit and buildings against high voltage current without clear explanations.	Explain the concept of protecting an electric circuit and buildings against high voltage current by applying some of the aspects.	Explain the concept of protecting an electric circuit and buildings against high voltage current correctly.	Explain the concept of protecting an electric circuit and buildings against high voltage current correctly with real examples from daily life.	
		c) Explain the concept of renewable energy.	The concept of renewable energy has been explained.	Explain the concept of renewable energy without referring to important aspects.	Explain the concept of renewable energy by applying some important aspects.	Explain the concept of renewable energy by applying important aspects correctly.	Explain the concept of renewable energy with real examples of its uses.	
		d) Explain how to generate electric energy in various ways.	How to generate electric energy in various ways has been explained correctly.	Explain without clarity how to generate electric energy in various ways.	Explain how to generate electric energy in various ways by applying some important aspects.	Explain how to generate electric energy in various ways correctly.	Explain how to generate electric energy in various ways by applying important aspects correctly and explain its benefits.	

Main Competence	Specific Competence	Activities to be Performed by the Pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		e) Explain the concept of complex machine.	The concept of complex machine has been explained correctly.	Explain the concept of complex machine without clear explanations.	Explain the concept of complex machine by mentioning some of the aspects.	Explain the concept of complex machine by applying important aspects correctly.	Elaborate on the concept of a complex machine with examples.	
	1.3 Identify scientific and technological theories.	a) Perform experiment on chemical and physical changes.	Experiment on physical and chemical changes has been done correctly.	Perform an experiment on the physical and chemical changes without considering procedures.	Perform an experiment on the physical and chemical changes by considering some procedures.	Perform an experiment on the physical and chemical changes correctly.	Perform an experiment on the physical and chemical changes with real examples.	16
		b) Conduct experiment on diffusion.	Experiment on diffusion have been done correctly.	Perform an experiment on diffusion without applying procedures.	Perform an experiment on diffusion by applying some procedures.	Perform an experiment on diffusion by applying procedures correctly.	Perform an experiment on diffusion correctly with real examples of its uses.	
		c) Perform experiments on osmosis.	Experiments on osmosis have been done correctly.	Perform experiments on osmosis without applying scientific procedures.	Perform experiments on osmosis by applying some scientific procedures.	Perform experiments on osmosis by applying scientific procedures correctly.	Perform experiments on osmosis correctly with real examples of their uses.	

Main Competence	Specific Competence	Activities to be Performed by the Pupil	Assessment Criteria	Benchmarking				No of periods
				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
2. Understand the basics of Science and Technology.	2.1 Apply Information and Communication Technology (ICT).	a) Use excel programme.	Activities on how to use the excel programme have been performed correctly.	Perform activities on how to use the excel programme without following proper procedures.	Perform activities on how to use the excel programme by following some procedures.	Perform activities on how to use the excel programme by correctly.	Perform activities on how to use the excel programme correctly and explain its uses.	30
		b) Explain the concept of Internet security on any network connection.	The concept of Internet security on any network connection has been explained correctly.	Explain without clarity the concept of Internet security without clear explanation.	Explain the concept of Internet security on the network connection by applying some of the aspects.	Explain clearly the concept of Internet security on the network connection.	Explain the concept of Internet security on the network connection correctly and mention its benefits.	
		c) Explain effects of the Internet network.	The effects of the Internet network have been explained correctly.	Explain effects of the Internet network without considering important aspects.	Explain some of the effects of the Internet network.	Explain the effects of the Internet network correctly.	Explain the effects of the Internet network with clear examples.	
		d) Explain the concept of e-mail.	The concept of e-mail has been explained correctly.	Explain the concept of e-mail without clear information.	Explain the concept of e-mail by applying some of the important aspects.	Explain the concept of e-mail correctly.	Explain the concept of e-mail correctly with its benefits.	

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		e) Practise how to use e-mail.	Practising how to use e-mail has been done correctly.	Practise how to use e-mail without applying important procedures.	Practise how to use e-mail by applying some of the important procedures.	Practice how to use e-mail by applying important procedures correctly.	Practice how to use e-mail by applying important procedures and advise others to use.	
		f) Perform activities on using search engines to find scientific and technological information.	Activities on using search engine to find scientific and technological information have been performed correctly.	Perform activities on using search engines to get scientific and technological information without considering important procedures.	Perform activities on using search engines to get scientific and technological information.	Perform activities on using search engines to get scientific and technological information through examples.	Perform activities on using search engines to get scientific and technological information correctly and to explain their benefits.	
		g) Use telephone and computer to find scientific information.	Telephone and computer have been correctly used to find scientific information .	Use telephone and computer to find scientific information without considering procedures.	Find scientific information using a telephone and computer by following some important procedures.	Use telephone and computer correctly to find scientific information.	Use telephone and computer correctly to find scientific information and advise others on how to do the same.	

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	2.2 Manage science related skills.	a) Identify pulley wheel simple machines.	Pulley wheel simple machines have been identified correctly.	Identify pulley wheel simple machines without clear explanation.	Identify and mention some of the pulley wheel simple machines aspects and explain clearly.	Identify the main pulley wheel simple machines correctly.	Identify pulley wheel simple machines correctly with concrete examples.	20
		b) Do the calculations on load and effort pulley wheel.	Calculations on load and effort have been done correctly.	Perform calculations on load and effort without proper procedures.	Perform calculations on load and effort by applying some procedures	Perform calculations on load and effort by applying proper formula.	Perform calculations on load and effort by applying proper formula, correctly and relate the answers to the value.	
		c) Explain the concept of work.	The concept of work has been explained correctly.	Explain without clarity the concept of work.	Explain with clear elaboration the concept of work.	Explain the concept of work with real examples correctly.	Explain properly the concept of work how work is done.	
		d) Calculate work done.	The work done has been calculated using the correct formula.	Calculate the work done without using the correct formula.	Write the formula without calculating the work done.	Calculate the work done using the correct formula.	Calculate the work done correctly with clear examples.	

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	2.3 Perform science-related practicals correctly.	a) Perform experiments on electric energy.	Experiments on electric energy have been performed by applying scientific procedures correctly.	Perform electric energy experiments without applying scientific procedures.	Perform electric energy experiments by applying some of the scientific procedures.	Perform electric energy experiments by applying scientific procedures correctly.	Perform electric energy experiments by applying scientific procedures correctly and explain their importance.	15
		b) Perform experiments on renewable energy.	Experiments on renewable energy have been done by applying scientific procedures correctly.	Perform experiments on renewable energy without using scientific procedures.	Perform experiments on renewable energy using some scientific procedures.	Perform experiments on renewable energy using scientific procedures correctly.	Perform experiments on renewable energy using scientific procedures and explain their importance correctly.	
		c) Perform practicals on how to generate electricity using the dynamo and a dry cell.	Practicals on how to generate electricity using the dynamo and dry cell have been performed correctly.	Perform practicals on how to generate electricity using the dynamo and dry cell without applying scientific procedures.	Perform some of the practicals on how to generate electricity using the dynamo and dry cell.	Perform practicals on how to generate electricity using the dynamo and dry cell correctly.	Perform practicals on how to generate electricity using the dynamo and dry cell correctly with real examples.	

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3. Health care and Environment	3.1 Apply cleanliness principles for health and good environment.	a) Explain the importance of maintaining cleanliness and smartness of garments.	The importance of maintaining cleanliness and neatness of garments has been explained correctly.	Explain without clarity the importance of maintaining cleanliness and neatness of garments.	Explain some of the aspects of the importance of maintaining cleanliness and neatness of garments.	Explain the importance of maintaining cleanliness and neatness of garments correctly.	Explain the importance of maintaining cleanliness and neatness of garments and explain its benefits.	15
		b) Identify sources of dirty and wastes.	Sources of dirty and wastes have been identified clearly.	Identify sources of dirty and wastes without correct explanations.	Identify some of the sources of wastes and dirty.	Identify sources of dirty and wastes correctly with examples.	Identify sources of dirty and wastes and explain precautions to take to prevent them.	

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				<i>Beginning</i>	<i>Average</i>	<i>Good</i>	<i>Very Good</i>	
		c) Give First Aid to a person who has been bitten by a snake, who has a fractured bone, is drowning in water, is vomiting and has diarrhea.	Practices on how to give First Aid to a person who has been bitten by a snake, has fractured bone, is drowning in water, is vomiting and has diarrhea have been done by applying correct procedures.	Practise how to give First Aid to a person who has been bitten by a snake, has a fractured bone, is drowning in water, is vomiting and has diarrhea without considering procedures.	Give First Aid to a person who has been bitten by a snake, has fractured bone, is drowning in water, is vomiting and has diarrhea by considering some procedures.	Use all main practices for giving First Aid to a person who has been bitten by a snake, has a fractured bone, is drowning in water, is vomiting and has diarrhea by considering procedures.	Gives first Aid to a person who has been bitten by a snake, has fractured bone, is drowning in water, is vomiting and has diarrhea by considering procedures correctly and give advice to others.	
	3.2 Apply health principles for good health.	a) Explain importance of cleanliness and safety of diet to the victim of HIV/AIDS.	The importance of cleanliness and safety diet to the HIV/AIDS victim has been explained correctly.	Explain incorrectly the importance of cleanliness and safety diet to HIV/AIDS victim.	Explain some of the importances of cleanliness and safety diet to the HIV/AIDS victim.	Explain the main importance of cleanliness and safety diet to the HIV/AIDS victim correctly.	Explain the importance of cleanliness and safety diet to the HIV/AIDS victim correctly and advise others accordingly.	20

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		b) Explain the relationship between sexually transmitted diseases and HIV/AIDS.	The relationship between sexually transmitted diseases and HIV/AIDS has been explained correctly.	Explain incorrectly the relationship between sexually transmitted diseases and HIV/AIDS.	Explain some of the relationships between sexually transmitted diseases and HIV/AIDS correctly.	Explain the main relationship between sexually transmitted diseases and HIV/AIDS correctly.	Explain by comparing and differentiating the relationship between sexually transmitted diseases and HIV/AIDS correctly.	
		c) Explain the effects of HIV and AIDS to the family, the society and the nation.	Effects of HIV and AIDS on the family, society and nation have been explained correctly.	Explain the effects of HIV and AIDS on the family, society and nation without clear explanation.	Explain some of the effects of HIV and AIDS on the family, society and nation.	Explain main effects of HIV and AIDS on the family society and nation correctly.	Explain effects of HIV and AIDS on the family society and nation correctly with examples.	
		d) Identify hereditary diseases.	Hereditary diseases have been identified correctly.	Identify hereditary diseases without correct explanations.	Identify some of the hereditary diseases.	Identify the main hereditary diseases correctly.	Identify main hereditary diseases correctly and advise others on things to be considered.	

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		e) Identify different groups of people who need special health services.	Different groups of people who need special health service have been identified clearly.	Identify the different groups of people who need special health services without correct explanations.	Identify some of the groups of people who need special health servicewith some explanation.	Identify groups of people who need special health services correctly.	Identify with examples different groups of people who need special health services correctly and give advice on how to care for them.	
	3.3 Recognise various human body systems.	a) Identify the blood circulation system.	The blood circulation system has been identified correctly.	Identify the blood circulation system without a correct explanation.	Identify some of the parts of the blood circulation system.	Identify main parts of the blood circulation system correctly.	Identify the blood circulation system correctly and explain its importance.	30
		b) To identify defects that may occur in the blood circulation system.	Defects that may occur in the blood circulation system have been identified correctly.	Identify defects that may occur in the blood circulation system without correct explanations.	Identify some of the defects that may occur in the blood circulation system.	Identify the major defects that may occur in the blood circulation system with examples.	Identify defects that may occur in the blood circulation system and advise on necessary precautions to take.	

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		c) Identify parts of the reproductive system.	The parts of the reproductive system are identified correctly.	Identify parts of the reproductive system without correct explanations.	Identify some of the parts of the reproductive system.	Identify the main parts of the reproductive system correctly.	Identify the main parts of the reproductive system and explain their functions correctly.	
		d) Identify the problems that may occur in the female and male reproductive system.	Problems that may occur in the female and male reproductive system have been explained correctly.	Identify some of the problems that may occur in female and male reproductive system without a correct explanation.	Identify some problems that may occur in the female and male reproductive system with correct explanation.	Identify major problems that may occur in the female and male reproductive system correctly.	Differentiate and explain the problems that may occur in the female and male reproductive system correctly.	
		e) Explain the concept of puberty for boys and girls.	The concept of puberty for boys and girls has been explained correctly by considering important aspects.	Explain the concept of puberty for boys and girls without considering the important aspects.	Explain the concept of puberty for boys and girls by considering some of the important aspects.	Explain the concept of puberty for boys and girls correctly by considering all the important aspects.	Explain the concept of puberty for boys and girls correctly and advise accordingly on things to consider.	

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		f) Identify family planning methods.	Family planning methods have been identified correctly.	Identify family planning methods without correct explanations.	Identify some of the family planning methods.	Identify family planning methods correctly.	Identify family planning methods correctly with examples.	