

MINISTRY OF GENERAL EDUCATION



KITWE ZASE

GRADE 8 INTEGRATED SCIENCE SCHEMES

NAME OF TEACHER _____

CLASS: _____

YEAR: _____

WEEK	TOPIC	SPECIFIC OUTCOME	CONTENT	TEACHING AIDS	REFERENCE
	The Human Body Sub topic: The human reproductive system and puberty	<ul style="list-style-type: none"> ➤ Identify organs of the human reproductive system. ➤ Explain the functions of the parts of the reproductive system. ➤ Identify the changes associated with puberty for both male and female. ➤ Explain the importance of observing personal hygiene of the reproductive organs. 	<ul style="list-style-type: none"> ➤ Organs of the reproductive system Male: testes, penis, scrotum, urethra, sperm. Female: Ovaries oviducts, uterus, cervix, vagina ➤ Functions of the reproductive organs. <ul style="list-style-type: none"> • Penis: to deposit sperms. • Ovary: to produce ovules. ➤ Changes associated with puberty <ul style="list-style-type: none"> • Secondary sexual characteristics of males. 	<ul style="list-style-type: none"> • Charts • Modules • Discussions • Brief lecture • Question and answer • Discovery • Inquiry • Class exercise • Home work • Group discussion • Role play 	<ul style="list-style-type: none"> • Progress in science • Biology for beginners • Biology li • The internet • Exam past papers.
		<ul style="list-style-type: none"> ➤ Explain the importance of observing personal hygiene of the reproduction organs 	<ul style="list-style-type: none"> • Avoid infectious diseases • Wash the body regularly 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
	TEST	<ul style="list-style-type: none"> ➤ Describe the process of fertilization in human beings. ➤ Explain the functions of the parts which are so important for the development of an embryo ➤ Describe the gestation period and birth 	<ul style="list-style-type: none"> • Fertilization: the fusing of a sperm and an egg in the oviducts to form a zygote. • Functions of: The placenta, Amnion, Amniotic fluid, Umbilical cord, uterus and cervix. • Gestation period in 	<ul style="list-style-type: none"> • Class discussion • Brief lecture • Class group work • Pupil presentations • Class exercise • Home work • Role play • Game. 	<ul style="list-style-type: none"> •

			months or days from fertilization to birth: Zygote, fetus baby.		
	The Blood Circulatory System	<ul style="list-style-type: none"> ➤ Describe the blood circulatory system ➤ Identify the components of blood and their functions 	<ul style="list-style-type: none"> • The flow of blood in vessels • The heart • The lungs <p>Components of blood</p> <ul style="list-style-type: none"> • Red blood cells: To transport O₂ and CO₂. • White blood cells: To fight against germs and infections • Platelets: For clotting, • Plasma: To transport water, food nutrients, heat. • Internal structure of the heart; atria, ventricles, valves, vessels • Movement of blood • Heat to lungs and vice versa • Heart to the rest of the body and vice versa. 	<ul style="list-style-type: none"> • Charts • Modules • Brief lecture • Group discussions • Pupil presentations • Question and answer • Discovery • Inquiry • Class exercise • Home work 	<ul style="list-style-type: none"> • Progress integrated science of • Biology 10 • Exam past papers • The internet
		<ul style="list-style-type: none"> ➤ Health Nutrition LSBAT ➤ Describe the different types of blood nutrients. ➤ Describe the dietary needs for different persons. ➤ Identify common nutritional deficiency 	<p>Question and answer</p> <ul style="list-style-type: none"> • Inquiry • Discovery • Discussion • Lecture • Demonstration. • Charts 	•	•

	TEST	<p>symptoms.</p> <ul style="list-style-type: none"> ➤ Describe the importance of children's clinics ➤ Sexually transmitted infections (STIs) ➤ Identify the common sexually transmitted infections. ➤ Explain transmission of sexually transmitted infections ➤ Describe the prevention of STIs. ➤ Explain the impact of HIV and AIDS on the population. 			
		<p>The environment: water, air and land pollution LSBAT</p> <ul style="list-style-type: none"> ➤ Explain what pollution is. ➤ Identify different types of pollution to the environment. ➤ Identify causes of pollution of the environment. ➤ Describe the effects of pollution on the environment. ➤ Describe ways of preventing pollution of the environment. <p>Cycles in the Biosphere</p>	<p>Discussion Question and answer</p> <ul style="list-style-type: none"> • Inquiry • Discovery • Homework • Demonstration • Air land water pollution • Define pollution • Types of pollution, land, water, air • Causes of pollution • Effects of pollution • Methods of preventing pollution <p>Cycles in the biosphere</p> <ul style="list-style-type: none"> • Oxygen cycle and factors affecting it 	•	

		<p>LSBAT</p> <ul style="list-style-type: none"> ➤ Describe what oxygen and carbon cycles are ➤ Identify factors affecting oxygen and carbon cycle. ➤ Explain the natural balance of gases in the atmosphere. <p>Water Management LSBAT</p> <ul style="list-style-type: none"> ➤ Describe the importance of water management in our daily life ➤ Describe effective water management system. 	<ul style="list-style-type: none"> • Carbon cycle and factors affecting it • Nitrogen cycle • Natural balance of gases in the atmosphere <p>Water management</p> <ul style="list-style-type: none"> • The importance of water management in our daily life. • Effective water management systems. 		
	Health nutrition	<ul style="list-style-type: none"> ➤ Describe the different types of food nutrients ➤ Describe the dietary need for different persons 	<ul style="list-style-type: none"> • The different types of food nutrients, carbohydrates, proteins, fats, minerals and vitamins • Dietary need <ul style="list-style-type: none"> a. Baby- more proteins and minerals b. Pregnant mothers- more protein, calcium, Fe and vitamin D c. Heavy manual worker needs more carbohydrates d. Sick person- 	<ul style="list-style-type: none"> • Dislay various types of food substances • Brief lecture • Class discussions • Role play • Question and answers • Group discussion 	<ul style="list-style-type: none"> • Progress in integrated science 8. • Biology for beginners • The internet • Exam past papers • Invites a nutritionist from the clinic

		<ul style="list-style-type: none"> ➤ Identify common nutritional deficiency diseases and their symptoms ➤ Describe the importance of children clinics 	<p style="text-align: center;">vitamins/ proteins</p> <ul style="list-style-type: none"> • Kwashiorkor, Marasmus, rickets, anemia, scurvy, over nutrition, under nutrition. • Roles of children's clinics • Growth monitoring • Immunization • Supplements provision • Provision of nutritional advice to mothers 	<ul style="list-style-type: none"> • Charts 	
	Health The under 5 clinic card	<ul style="list-style-type: none"> ➤ Describe the features on the under 5 clinic card 	<ul style="list-style-type: none"> • Trends on the cards; growth, malnutrition, under weight. 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
	Plants and animals TEST	<ul style="list-style-type: none"> ➤ Identify the main parts of a microscope 	<ul style="list-style-type: none"> • Parts include, mirror, stem, lens, stage, eye piece, adjusting knobs. 	<ul style="list-style-type: none"> • Brief lecture • Question and answer • Class discussions • Group work 	<ul style="list-style-type: none"> • Integrated science 8 • Biology 10 progress. • Understanding biology • GCSZ Biology • Exam
	Plant cells	<ul style="list-style-type: none"> ➤ Examine the plant cells structure using a microscope ➤ Describe the functions of the parts of the cells 	<ul style="list-style-type: none"> • Structure of a plant cell; cell wall, cell membrane, cytoplasm, nucleus, vacuole chloroplast. • Functions for each part of the plant cell 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Integrated science 8 • Biology 10 progress. • Understanding biology • GCSZ Biology • Exam

	Plant growth and nutrients	<ul style="list-style-type: none"> ➤ Identify regions of growth of a plant. ➤ Demonstrate the responses to plant stimuli in shoots and roots. ➤ Describe the nutrients important for plant growth. 	<ul style="list-style-type: none"> • Regions of plant growth shoots, roots and stem. • Responses to stimuli phototropism and geotropism • Plant nutrients: potassium nitrogen and phosphorous 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
	TEST	<ul style="list-style-type: none"> ➤ Investigate how plants obtain dissolved mineral salts from the soil. ➤ Identify sources of plant nutrients ➤ Explain the advantages and disadvantages of inorganic and organic fertilizers. ➤ Explain the effects of excessive use of inorganic fertilizer to the soil. 	<ul style="list-style-type: none"> • How plants obtain mineral salts: roots to the stem and from stem to leaves • Sources: organic fertilizers (manure, compost) and inorganic fertilizers (urea D Compound) • Advantages of organic and inorganic fertilizers • Effects of excessive use of fertilizers 	<ul style="list-style-type: none"> • Brief lecture • Question and answer • Group work • Pupil demonstration • Class exercise • Role play • Home work • Provide real examples of organic and inorganic fertilizers • Pictures of land which has been degraded by fertilizers 	<ul style="list-style-type: none"> • Progress in integrated science 8. • Excel grade 8 • Environmental science 8 • Understanding biology. • The internet
	Animal cell	<ul style="list-style-type: none"> ➤ Describe the basic structure of an animal 	<ul style="list-style-type: none"> • Cell membrane, nucleus, cytoplasm 	<ul style="list-style-type: none"> • Brief lecture • Question and 	<ul style="list-style-type: none"> • IGCSE biology • Understanding

		<p>cell.</p> <ul style="list-style-type: none"> ➤ Describe the functions of the parts of the cell ➤ Identify different features in the basic structure of an animal cell and plant cell. 	<ul style="list-style-type: none"> • Functions of the cell parts. • Differences between plant and animal cells 	<p>answer</p> <ul style="list-style-type: none"> • Class group work • Practical experiment on already prepared..... of animal cells 	<p>biology</p> <ul style="list-style-type: none"> • Progress, excel in integrated science • Environmental science 8 • You tube • The charts.
	<p>Sub topic Conservation animals and plants</p> <p>TEST</p>	<ul style="list-style-type: none"> ➤ Explain the importance of domesticating animals and plants ➤ Explain ways of improving domestic breeds of animals and plants ➤ Identify animals and plants threatened by extinction ➤ Describe the importance of protecting endangered animals and plants. ➤ Explain the methods of protecting endangered 	<ul style="list-style-type: none"> • The importance of domesticating animals and plants • Methods of improving plant and animals breeds, cross pollination, grafting, cross breeding, artificial insemination. • Animals threatened with extinction • Plants threatened with extinction • The importance of protecting endangered animals and plants such as tourism, shelter food, economic benefits etc. • Methods such as game parks, forest reserves, 	<ul style="list-style-type: none"> • Brief lecture • Question and answer • Group work • Class discussion • Charts • Pictures • Role play 	<ul style="list-style-type: none"> • Field trip • Nat geo wild • The internet • Environmental science 8 • Progress in TS 9 • Exam past papers

		animals and plants	GMA and stiffening of laws.		
	Photosynthesis is	<ul style="list-style-type: none"> ➤ Its definition ➤ Identify the conditions which are necessary for photosynthesis ➤ Identify the products of photosynthesis. ➤ Compare the process of photosynthesis to that of respiration 	<ul style="list-style-type: none"> • Conditions such as sunlight, CO₂, H₂O and temperature • Products of photosynthesis such as starch. • Comparisons between the two processes. 	<ul style="list-style-type: none"> • Brief lecture • Question and answer • Group work • Class discussion • Charts • Pictures • Role play 	•
	Subtopic Transpiration TEST	<ul style="list-style-type: none"> ➤ Its definition ➤ Describe the process of transpiration ➤ Investigate the factors affecting the rate of transpiration. ➤ Explain the importance of transpiration in plants 	<ul style="list-style-type: none"> • Define the term transpiration • State the factors affecting the rate of transpiration • Give the importance of transpiration in plants 	<ul style="list-style-type: none"> • Brief lecture • Question and answer • Group work • Class discussion • Charts • Pictures • Role play 	•

	Materials and energy	<ul style="list-style-type: none"> ➤ Describe the composition of matter ➤ Describe the basic structure of an atom ➤ Identify common atoms using their symbols ➤ Demonstrate the formation of simple molecules using models of atoms 	<ul style="list-style-type: none"> • Structure of an atom (Al, Fe, Cu, Au, Hg, Pb, Na metals) (Si, As Metalloids) (C, O, H, N, Cl, Non metals) Simple molecules CO₂, O₂, H₂O NaCl • 	<ul style="list-style-type: none"> • Brief lecture • Question and answer • Group work • Class discussion • Charts • Pictures • Role play 	<ul style="list-style-type: none"> • Progress in science 10 • Progress in IS 8 • Chemistry 10 achievers • Exam past papers
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