

**MINISTRY OF GENERAL EDUCATION
PROVINCIAL SCHEMES OF WORK FOR SCIENCE 5124**

Subject: INTEGRATED SCIENCE Grade: 8 Term: ONE Year: 20.... Teacher: -----

WEEK	TOPIC	SUBTOPIC	SPECIFIC OUTCOMES	METHODOLOGY	SUGGESTED EXPERIMENTS	REFERENCE
1	GENERAL LABORATORY SAFETY PROCEDURE AND RULES	-Safety rules -Laboratory apparatus	Discuss the personal and general laboratory safety. Introduce the apparatus used in the lab. Demonstrate how to use the apparatus in the lab. .	Discussion Demonstration	Chart having laboratory Rules Introduction of laboratory apparatus	Website
2	THE HUMAN BODY	The human reproductive system puberty	Identify organ of the human reproductive system Explain the function of the of the parts of the reproductive system	Discussion Question and answer Question and	Leaners identify, Draw and label parts of the reproductive system on the chart Field trip to youth	Integrated science pupils book grade 8 Integrated science TG

	THE HUMAN BODY		<p>Define the term puberty.</p> <p>Identify changes associated with puberty for both male and female.</p> <p>Describe the important of observing personal hygiene of the reproductive organs.</p>	<p>answer</p> <p>Discussion</p>	friendly corners at authorised health centre	<p>Integrated science pupils G8</p> <p>Complete biology</p> <p>Biological sciences</p>
3	THE HUMAN BODY	<p>Fertilisation embryo development</p> <p>Gestation</p>	<p>Describe the process of fertilisation in human beings</p> <p>Explain the functions of the parts important for the development of the embryo</p> <p>Describe Gestation period and birth</p>	<p>Discussion</p> <p>Discussion</p>	<p>Learners identify , draw and label parts where Fertilisation takes places using: a model and stages of embryo development on the charts</p>	<p>Integrated Science G8 and Biology G11</p>

4	HEALTH	Nutrition	<p>Describe the different types of food nutrients</p> <p>Describe the dietary needs for different persons</p>	<p>Explanation</p> <p>Discussion</p> <p>Laboratory Demonstration</p>	<p>Identification of food rich in different nutrients using food composition tables</p> <p>Test for the presence of starch in different foods</p> <p>Test for the presence of fat/ oils in different of foods(Fat spot test)</p> <p>Test for proteins</p>	Integrated Science G8, Biology G10
5	HEALTH	Nutrition	<p>Identify common nutritional deficiency diseases and their symptoms</p> <p>Describe the importance of the under- five clinic card</p>	<p>Field trip</p> <p>Discussion</p>	<p>Field to the maternal and child clinic</p> <p>Plotting of children Clinic cards</p>	Integrated Science G8, Biology G10
6	THE ENVIRONMENT	Water, Air & Land pollution	<p>Explain what pollution is</p> <p>Explain different types</p>	Discussion		Integrated Science G8 Complete

			<p>of pollution of the environment</p> <p>Identify causes of pollution of the environment</p>	<p>Field trip Demonstration</p>	<p>Field trips to sites of land , water and air Pollution</p> <p>An experiment to show a substance that would Make water look/appear/feel polluted</p> <p>Observing microbial Organism in water</p>	<p>chemistry</p> <p>Magazines</p>
7	THE ENVIROMENT		<p>Describe the effects of pollution on the environment</p> <p>Describe ways of preventing pollution of the environment</p>	<p>Discussion</p> <p>Question and answer</p>	<p>Chart showing the effect of pollution on environment</p> <p>Cleaning the environment A chart showing pollution</p> <p>Holding discussion causes of pollution</p>	

8	PLANTS AND ANIMALS	Plant cell	<p>Identify the main parts of a microscope.</p> <p>Examine the plant cell structure using a microscope.</p> <p>Describe the functions of the parts of the cell.</p>	<p>Experimental</p> <p>Demonstration</p> <p>Discussion</p>	<p>Conduct an experiment to demonstrate on how to prepare a slide using onion skin</p>	<p>Integrated science G8</p> <p>Biology G10</p>
10		plants growth and nutrients	<p>Identify regions of growth of the plant</p> <p>Demonstrate responses to stimuli in shoots and roots</p> <p>Describe nutrients important to plants growth .</p>	<p>Question and answer using a chart showing the tips of a shoot and root.</p> <p>Experiment</p> <p>Use a chart to explain geotropism and hydrotropism</p>	<p>Conduct an experiment using a potted plant to demonstrate phototropism.</p>	<p>Integrated scienceG8</p> <p>Complete biology.</p>

11		plants growth and nutrients	Investigate how plants obtain dissolved mineral salts from the soil Identify source of plant nutrient	experimental Discussion	Conduct an experiment using a potted plant and coloured.	Integrated science G8
12		plants growth and nutrients	Explain the advantages and disadvantages of inorganic and organic fertilizers Explain the effect of excessive use of inorganic fertilizer to the soil	Discussion Discussion		Integrated science G8 Complete biology
13		END OF TERM TEST				

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PROVINCIAL SCHEMES OF WORK FOR SCIENCE 5124**

Subject: INTEGRATED SCIENCE **Grade:** 8 **Term:** THREE **Year:** 20.... **Teacher:** -----

WEEK	TOPIC	SUB-TOPIC	EXPECTED OUTCOME	METHOD	SUGGESTED EXPERIMENTS	REFERENCE
1	MATERIALS AND ENERGY	density	Demonstrate that an object will sink or Float on a liquid Describe how vessels float Explain the effect of overloading Vessel	Experimental Observation Class discussion	Conduct an experiment to illustrate floatation using salt water and egg Demonstrate by placing a metallic plate on a basin of water.	Integrated science G8 & Physics G10
2		Heat transfer	Demonstrate the type of the heat transfer	Experimental	Conduct an experiment to demonstrate, conduction, convection and ration.	Integrated science G8 & complete Physics

			Investigate the movement heat of in matter			
3		Heat transfer	Describe how the vacuum flask works	Experimental	Use a real vacuum flask to demonstrate	Integrated science G8 & Physics G10
4		Heat transfer	Demonstrate the expansion of substances. Describe the use of expansion of different substances in everyday life.	experimental Question and answer	Conduct an experiment on the ball and ring to demonstrate expansion	Integrated science G8 & complete Physics
5		Heat transfer	Explain the effect of expansion and contraction of substances	Class discussion	Conduct experiments on the effect of heat, on solids, liquids and gases	
6		reflection and refraction of light	Describe what reflection is	Discussion		Integrated science G8 & complete

			Investigate the characteristics of Light on the mirror	Experimental	Conduct an experiment to demonstrate reflection	Physics
7			Describe what refraction is Demonstrate refraction using a glass Block	Experimental	Conduct an experiment to demonstrate refraction	Integrated science G8 & complete Physics
8		reflection and refraction of light	Identify the real and apparent depth of an object under water Explain the application of refraction and reflection	Experimental Class discussion	Conduct an experiment to demonstrate the real and apparent depth by placing a coin in a basin of water in the sun.	Integrated science G8 & complete Physics
9		Composition of air	Identify the components of air Investigate the proportion of each substance in air	Class discussion		Integrated science G8 & complete chemistry

10		composition of air	Describe the nature of each substance in air	Discussion on the physical and chemical properties of each component of air		Integrated science G8 & complete chemistry
11		composition of air	Describe the uses of each substance in air	Group work Class discussion		Integrated science G8 & complete chemistry
12 &13	End of term exams	End of term exams	End of term exams			

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WEEK	TOPIC	SUB-TOPIC	EXPECTED OUTCOMES	METHOD	SUGGESETED EXPERIMENTS	REFERENCE
1	MATERIALS AND ENERGY	composition of matter	Describe composition of matter Describe the structure of an atom	Question and answer Discussion Laboratory	Chart Making of models of atoms and molecules Using clay ,colouring /beads /beans	Integrated Science G8, Biology G10 Integrated Science G8, Chemistry G10
2		composition of matter	Identify common atoms using symbols Demonstrate the formation of simple molecules using models of an atom	Discussion Demonstration	In groups conduct an experiment how to make a model of a molecule using clay or plasticine	Integrated Science G8, Chemistry G10
3		physical changes of matter	State what Physical change is Describe the arrangement of the atoms in the three states of matter. Identify the temperatures at which water changes state.	Question and answer Laboratory Demonstration	Experiment to investigate the physical change of state. (melting , Boiling , evaporation , sublimation, freezing	Integrated Science G8, Physics G10

					Experiment to identify the temperature at which water changes state Use data to plot a graph(temperature against time)	
4		mixture	Explain what a mixture is Identify different types Of mixtures	Question and answer Discussion	In groups to list examples of mixtures	Integrated Science G8, chemistry G10
5		mixture	Identify methods of separating mixtures Explain some of the industrial applications of separation techniques. (Filtration ,Evaporation simple distillation)	Experimental Demonstration	Experiment to separate sand from water. Experiment to separate common salt from a mixture of common salt and sand Experiment to show simple distillation salty water.	Integrated Science G8, chemistry G10
7		mixtures	Explain the method of separating the	Experimental	Experiment to	Integrated

			<p>mixtures (fractional distillation , Floatation , magnetism</p> <p>Explain some of the industrial applications of separations techniques</p>	demonstration	<p>separate miscible liquids using fractional distillation</p> <p>Experiment to separate iron fillings from sand</p> <p>Experiment to separate immiscible liquids (liquid oil and water)</p>	science G8
8		Mass and weight	<p>Define the mass</p> <p>Measure the mass of different objects</p>	<p>Experimental</p> <p>Demonstration</p>	<p>Experiment to show how measure the mass of different objects</p>	<p>Integrated science G8</p> <p>Physics g10</p>
9		Mass and weight	<p>Define the term weight</p> <p>Measure the weight of a given object correctly.</p>	<p>Experimental</p> <p>Demonstration</p>	<p>Experiment to show how to measure the weight of different objects</p>	<p>Integrated science G8</p> <p>Physics G10</p>
10		Mass and weight	<p>Calculate the weight of a substance given the mass</p> <p>Distinguish between mass and weight</p>	<p>Explanation</p> <p>Demonstration</p>	<p>Calculating the weight of substance given the mass</p>	<p>Integrated science G8 & Physics G10</p>

11	MATERIALS AND ENERGY	volume	<p>Define of volume</p> <p>Demonstrate how to find the volume of solids (regular & irregular) objects.</p> <p>Demonstrate how to find the volume of liquids</p>	<p>Laboratory</p> <p>Demonstration</p>	<p>Experiment to determine the volume of regular and irregular solids</p> <p>Experiment to determine the volume of water</p>	<p>Integrated science G8 & Physics G10</p>
12	MATERIALS AND ENERGY	Density	<p>Explain the meaning of density</p> <p>Demonstrate how to determine the densities of different substances</p>	<p>Experiment to find out the density of a liquids</p> <p>Experiment to find out the density of an irregular solids</p>	<p>Calculating densities of different substances</p>	<p>Integrated science G8</p> <p>Physics 10</p>
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