

Ascot High School

Science Department

Grade 10 Integrated Science

September – December 2025

Jamaicans are empowered are to achieve their fullest potential.

Duration	Unit	Topic	Specific Objective	Assignment/ Project & Due Dates	School Based Assessments/Materials Required (S.B.A.s)
<i>September 1- 12 Orientation Activities & Diagnostic Test</i>					
5 Weeks Sept. 15-Oct. 17	Units of Life	1. Diffusion, Osmosis And Active Transport	Students should be able to: 1. Analyse the processes of diffusion, osmosis and active transport. a. Definition of terms must include movement of particles and concentration gradient. b. Role of diffusion, osmosis and active transport in moving substances in and out of cells and from one cell to another in all living organisms. c. Reference to the cell membrane as a selectively permeable membrane.	Conduct simple investigations to demonstrate the processes of diffusion and osmosis. Lab Report Due Date: September 30.2025	Students will carry out experiments to demonstrate the processes of diffusion and osmosis. Required materials: 1. One small Irish potato 2. Small amount of salt 3. S.B.A laboratory book

		2. Plant and Animal Cells	<p>d. Examples of diffusion in artificial and natural environments to include but not limited to ash volcanic eruptions, smog from car exhaust and industries , smoke and landfills.</p> <p>1. Examine plant and animal cells.</p> <p>a. Functions of the cell structures in animal and plant cells (Simple treatment only). For example, nucleus is responsible for cell division, making protein and contains genetic information).</p> <p>b. Structures: cell wall, cell membrane, nucleus, chromosomes, cytoplasm, mitochondria, ribosomes, vacuoles and chloroplasts</p> <p>c. Simple annotated diagrams are required (as seen under the light microscope).</p>	<p>Worksheet on Diffusion, Osmosis and Active Transport (10%)</p> <p>Due Date: October 10, 2025</p> <p><u>CLASSWORK (10%)</u> Draw an annotated diagram of the plant and animal cells seen under the light microscope. Due Date: October 24, 2025</p>	<p>4. Pencil, eraser, ruler & pen</p> <p>5. Potassium permanganate crystals</p> <p>6. Beaker</p> <p>7. Water</p> <p>8. Spatula</p> <p>Drawing of Plant and Animals Cells.</p> <p>Required materials</p> <p>1.Light microscope</p> <p>2. Prepared Slides of Plant and Animals</p> <p>3. Laboratory Book</p>
--	--	---------------------------	---	--	--

Duration	Unit	Topic	Specific Objective	Assignment/Project & Due Dates	4. Pencils, Pens, Ruler, typing sheets School Based Assessments/Materials Required (S.B.As)
SESSIONAL TEST ONE: (20%)					
3 Weeks Nov. 3-21	Reproduction and Growth	Sexual and Asexual Reproduction	<p>Students should be able to:</p> <p>1. Distinguish between asexual and sexual reproduction.</p> <p>a. Role of cell division-meiosis and mitosis (stages are not required)</p> <p>b. Advantages and disadvantages of asexual reproduction (variety, adaptation, livestock and crop)</p> <p>2. Examine various methods of asexual reproduction in plants.</p> <p>- Methods of asexual reproduction:</p> <p>a. Natural vegetative propagation (examples of perennating organs):</p> <p>i. corms</p> <p>ii. bulbs</p> <p>iii. rhizome</p> <p>iv. runners</p> <p>Details of structures not required</p>	<p>Practical Activity: Lab Report (20%)</p> <p>Drawings of Perennating Organs.</p>	<p>Students will examine and draw storage organs;</p> <ul style="list-style-type: none"> - Corms - Rhizomes - Bulbs - Cuttings - Runners <p>Required material(s):</p> <p>1. S.B.A lab book</p>

			b. Brief description of artificial methods of propagation. i. budding ii. cuttings iii. tissue culture iv. cloning v. grafting		2. Pencil, eraser, pen, ruler & calculator, typing sheets
Duration	Unit	Topic	Specific Objective	Assignment/ Project & Due Dates	School Based Assessments/Materials Required (S.B.A.s)
2 Weeks Nov. 24-Dec.5	Reproduction and Growth	Sexual Reproduction in Plants	Students should be able to: 1. Examine the process of sexual reproduction in plants. a. Structure and function of flowers. b. Pollination i. Definition ii. Types-Self and Cross Pollination (Advantages of Cross Pollination) iii. Agent of Pollination (Wind, Animal) c. Fertilisation d. Development of Seeds/Fruits (outline).	Worksheet on Sexual Reproduction in Plants (10%) Due Date: December 5, 2025	
END OF TERM EXAMINATION					