

YEAR SEVEN

**BIOLOGY AND GEOLOGY**

Unit	Syllabus	Standards of learning
<b>1<sup>st</sup> Term</b>		
<p><b>Unit 1.</b> <b>Physical magnitudes and scientific activity. [9h]</b></p>	<p>Types of physical magnitudes and their definitions; Fundamental and derived units.</p> <p>The International System of units (SI)</p> <p>Laboratory reports, processing information, tables and graphs, using significant figures.</p>	<p><b>Define</b> types of physical magnitudes: fundamental and derived.</p> <p><b>Recall</b> the International System of Units (SI).</p> <p><b>Analyse</b> and process data using decimals, means and significant figures.</p> <p><b>Process</b> data performing the basic arithmetic functions: addition, subtraction, multiplication and division.</p> <p><b>Organise</b> data using tables and graphs.</p> <p><b>Present</b> a laboratory report.</p>
<p><b>Unit 2.</b> <b>The Planet Earth [9h]</b></p>	<p>Historic models of the Universe. The origins of the universe and the Solar System.</p> <p>Characteristics of the solar system and its components.</p> <p>Characteristics of the planet Earth. Movements of the Earth, rotation and orbit. The Moon.</p>	<p><b>Outline</b> historic models of the Universe.</p> <p><b>Summarise</b> the theories of the origins of the universe.</p> <p><b>Describe</b> the Solar system and its components.</p> <p><b>Recall</b> the characteristics of the Earth.</p> <p><b>Describe</b> the movements of the Earth: rotation and orbit.</p> <p><b>Describe</b> the movements of the Moon.</p> <p><b>Outline</b> the differences between Solar and Moon eclipses.</p>
<p><b>Unit 3.</b> <b>The geosphere and the atmosphere. [9h]</b></p>	<p>The structure and composition of the crust, mantle and core of the Earth.</p> <p>The symbols of the principal elements (groups 1 to 18).</p> <p>Rocks and minerals: properties, characteristics and uses.</p> <p>The composition and</p>	<p><b>Outline</b> the structure and composition of the crust, mantle and core of the Earth.</p> <p><b>Recall</b> the symbols of the principal elements (groups 1 to 18).</p> <p><b>Recall</b> the concept of mineral and rock.</p> <p><b>List</b> the properties, characteristics and</p>

	<p>structure of the atmosphere. The greenhouse effect. Atmospheric pollution. The importance of the atmosphere for living beings.</p>	<p>uses of minerals and rocks.</p> <p><b>Describe</b> the composition of the atmosphere.</p> <p><b>Outline</b> the characteristics of the layers of the atmosphere</p> <p><b>Explain</b> atmospheric pollution and its impact on the Greenhouse Effect.</p> <p><b>Discuss</b> the importance of the atmosphere for living beings.</p>
<b>2<sup>nd</sup> Term</b>		
<p><b>Unit 4</b></p> <p><b>The hydrosphere and the biosphere</b> [6h]</p>	<p>The properties of water. Water on the Earth: the water cycle.</p> <p>The importance of freshwater and saltwater for living beings. Water pollution</p> <p>The characteristics that make Earth a habitable planet.</p>	<p><b>Outline</b> the properties of water.</p> <p><b>Summarise</b> the water cycle.</p> <p><b>Discuss</b> the importance of freshwater and saltwater for living beings.</p> <p><b>Explain</b> water pollution and its impact on living beings.</p> <p><b>Outline</b> the characteristics that make Earth a habitable planet.</p>
<p><b>Unit 5</b></p> <p><b>Living things.</b> [5h]</p>	<p>The cell and cellular theory. The characteristics of life.</p> <p>The Vital Functions. Autotrophic and heterotrophic nutrition.</p>	<p><b>State</b> the concept and examples of bioelements and some examples.</p> <p><b>Differentiate</b> between inorganic and organic biomolecules.</p> <p><b>Outline</b> the characteristics of life.</p> <p><b>Describe</b> the Vital Functions.</p> <p><b>Explain</b> autotrophic and heterotrophic nutrition.</p> <p><b>Differentiate</b> between asexual and sexual reproduction.</p> <p><b>Describe</b> cellular theory.</p> <p><b>Outline</b> the differences between prokaryotic and eukaryotic cells.</p> <p><b>State</b> the function of the main organelles in both plant and animal cell.</p> <p><b>Label</b> the main organelles in both plant and animal cell.</p> <p><b>Differentiate</b> between prokaryotic and eukaryotic (animal or plant) cells in diagrams.</p>

<p><b>Unit 6</b> <b>The diversity of life. [16h]</b></p>	<p>The 5 Kingdoms of life: Monera, Protists, Fungi, Plants, Animals.</p> <p>Scientific Classification.</p> <p>Problems with the classification of viruses.</p> <p>The importance of biodiversity.</p> <p>Adaptations of living things.</p> <p>Identification keys.</p>	<p><b>Describe</b> the 5 Kingdoms of life: Monera; Protist; Fungi; Plant; Animal; and their adaptations.</p> <p><b>Outline</b> the differences that allow to distinguish between the 5 Kingdoms.</p> <p><b>Discuss</b> problems with the classification of viruses.</p> <p><b>Explain</b> the importance of biodiversity.</p> <p><b>Describe</b> Scientific Classification.</p> <p><b>Design</b> identification keys for given examples.</p>
<p><b>3rd Term</b></p>		
<p><b>Unit 7</b> <b>Ecosystems [6h]</b></p>	<p>Concept and components of an ecosystem. Biotic and abiotic factors. Aquatic and terrestrial ecosystems.</p> <p>Factors that affect the equilibrium of ecosystems.</p> <p>Human actions that help to conserve the environment.</p>	<p><b>Outline</b> the concept of an ecosystem and <b>list</b> its biotic and abiotic factors.</p> <p><b>Describe</b> aquatic and terrestrial ecosystems.</p> <p><b>Explain</b> the impact on an ecosystem when one factor is changed.</p> <p><b>Describe</b> human actions that can be done to preserve the environment.</p> <p><b>Discuss</b> the importance of maintaining biodiversity.</p>
<p><b>Unit 8.</b> <b>Internal Geodynamics [9h]</b></p>	<p>Forms of internal energy in the Earth.</p> <p>The types of tectonic plates and its movements. Seismic activity and volcanoes</p> <p>The geographic distribution of earthquakes and volcanoes.</p> <p>The dangers of seismic activity and volcanoes.</p> <p>Prediction and prevention of natural disasters.</p>	<p><b>Describe</b> the dynamics of the Earth's interior.</p> <p><b>Recall</b> the types of tectonic plates and its movements.</p> <p><b>Explain</b> seismic activity and volcano formation.</p> <p><b>Explain</b> the geographic distribution of earthquakes.</p> <p><b>Describe</b> the dangers of seismic activity and volcanoes.</p> <p><b>Discuss</b> the problems of prediction and prevention of natural disasters.</p>
<p><b>Unit 9.</b> <b>External Geodynamics. [12h]</b></p>	<p>Terrestrial landforms. The Rock cycle.</p> <p>External geological factors. Weathering.</p> <p>The ground. Erosion, transport and sedimentation.</p>	<p><b>Describe</b> the processes that form landscapes: the Rock Cycle.</p> <p><b>Describe</b> the effect of external geological factors: weathering (biological, physical and chemical); erosion, transportation and deposition.</p>

	<p>Geological effects of wáter, wind, glaciers and living things.</p>	<p><b>Outline</b> the effect of water, wind, glaciers and living beings as external geological factors.</p> <p><b>Describe</b> the structure and composition of the ground.</p> <p><b>Discuss</b> the importance of the ground.</p>
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