CCNN 6TH YEAR

Unit	Syllabus	Standards of learning
1st Term		
Unit 1 **Introduction to investigations [2h]**	What is science? What do scientists do? What achievements have scientists obtained in the past? How to write a laboratory report.	**State** the different branches of science: biology, physics, chemistry. **Recall** knowledge of what scientists do. **Describe** and **discuss** what scientists have done in the past, are doing in the present and should do in the future to improve our lives. **Demonstrate** interest and investigate different aspects of science. **Understand** the different steps necessary to write a laboratory report (background information, hypothesis, materials needed to carry out the investigation, procedures, variables, conclusions**).** **Demonstrate** how to write a laboratory report, with teacher guidance.
Unit 2 **Living things [6h]**	Cells; Tissues; Organs; Systems; Organisms; Animal and plant tissues	**Define** the main functions of cells. **Draw and label** 4 parts of a plant cell and 3 of an animal cell. **Differentiate** between animal and plant cells in diagrams. **Identify** the way cells, tissues, organs and systems are organized in living things. **Differentiate** between tissues, organs and systems. **State** an example of animal and plant tissue. **Discuss and outline** the impact of the invention of a microscope on society.
Unit 3 **The classification of living things [12h]**	How do we classify living things; The five kingdoms; The animal kingdom; The plant kingdoms; Comparison of animals and plants.	**State** the name of the 5 Kingdoms. **Describe** the 5 Kingdoms of life according to their characteristics (number of cells and type nutrition). **Differentiate** between vertebrates and invertebrates. **Describe** the main groups of vertebrates and invertebrates according to their characteristics.

		Differentiate between non-flowering plants and seed plants. **Describe** the main groups of non-flowering plants and seed plants. **Present and design a poster to show s**cientific Classification of living things. **Process data** obtained from the observation of different cells.
Unit 4 **Fungi, protists, bacteria and viruses [5h]**	The fungi kingdom; The protists kingdom	**Outline** the main characteristics of fungi. **State** an example of a unicellular fungi and an example of a multicellular fungi. **State** an example of a harmful and beneficial fungi and how they affect people.
2nd Term		
Unit 4 **(continuation)** **Fungi, protists, bacteria and viruses [5h]**	Bacteria; Viruses; Comparison of protists and bacteria.	**Differentiate** between algae and protozoa. **State** an example of a protozoa. **Differentiate** between bacteria and viruses. **State** why viruses are not classified as living things.
Unit 5 **Nutrition I [10h]**	Nutrients; How nutrients work; the digestive system; Digestion and health; Respiration and health.	**Explain** the process of nutrition. **Identify** groups of nutrients. **State** the function of each groups of nutrients. **Label** a diagram of the digestive system. **Describe** the process of digestion. **Understand** the term of absorption. **Recall** the importance of a well balanced diet. **Design** and present a project on malnutrition. **Label** a diagram of the respiratory system. **Describe** the process of respiration. **Understand** the gas exchange in lungs. **Differentiate** healthy from unhealthy habits that can damage our respiratory system.
Unit 6 **Nutrition II [10h]**	The circulatory system; Pulmonary circulation; Systemic circulation; Circulation and health; The excretory system; Excretion and health	**Identify** the parts of the circulatory system. **Identify** the different components of blood and their function. **Identify** the different blood vessels and their function.

		Label the ventricles, atria and septum in a diagram of a heart. **Describe** how blood circulates around the heart. **Differentiate** between systemic and pulmonary circulation. **Differentiate** healthy from unhealthy habits that can damage our circulatory system. **Label** 4 parts of the excretory system. **Define** the concept of excretion. **Recognize** the function of the sweat glands in the process of excretion. **Differentiate** healthy from unhealthy habits that can damage our excretory system.
3rd Term		
Unit 7 **Matter and energy [9h]**	Types of mixtures; Separation of mixtures. Physical changes; Changes of state; Chemical changes; Forms of energy.	**Differentiate** between pure substances and mixtures. **Distinguish** between homogenous and heterogeneous mixtures. **State** examples of homogenous and heterogeneous mixtures. **Identify and describe** different methods for separations of mixtures. **Distinguish** between physical and chemical changes. **Distinguish** between different changes of state. **Differentiate** between melting and boiling points for water and another substance. **Define** the concept of chemical reactions. **Outline** oxidation, combustion and fermentation as examples of chemical reaction and when they occur. **Define** the concept of energy. **Describe** mechanical, chemical, electrical, light, nuclear and thermal energy and how they are produced.

Unit 8 **Electricity and magnetism [9h]**	Electrical charges; Electric current; Conductors and insulators; Power plants; Electric circuits; Magnetism.	**Identify** different types of electrical charges. **Describe** the interaction between electrical charges. **Define** an electric current. **Distinguish** between good conductors and good insulators. **State** the different effects of electric current. **Understand** the concept of an electric circuit. **Identify and draw** the different components and their symbols in an electric circuit. **Differentiate** between parallel and series circuit. **State** the advantages and disadvantages of a parallel and a series circuit. **State** how we can make light bulbs in parallel and series circuits shine brighter and dimmer and how to stop circuits functioning completely. **Distinguish** between types of power plants and state how electricity travels from a power plant to homes. **Understand** the concept of magnetism. **Describe** how magnetic poles work. **Explain** the difference between geographical and magnetic poles. **Discuss** different types of magnets and uses. **Discuss** different types of energy transformations.
Unit 9 **Reproduction [9h]**	Sexual characteristics; the reproductive system; sex cells; Fertilization; Pregnancy and birth; A healthy pregnancy.	**Differentiate** primary and secondary sexual characteristics. **Understand** the concept of puberty. **Label** 5 parts of the male and female reproductive systems. **Outline** the function of the 5 parts of the male and female reproductive systems. **List** the differences between male and female sexual organs.

		Differentiate and draw male and females sex cells. **Discuss** in detail the route a male sex cell takes to fertilize an ova. **Explain** the process of ovulation, fertilization, pregnancy and birth. **Differentiate** healthy from unhealthy habits that can affect the development of a foetus.