Cambridge INTERNATIONAL SCHOOL
Co-Educationial (Senior Secondary)

First Term Curriculum
Session: 2022-23
Subject: Science
Class: VIII

	February/March	April	May	June
Content	***Production Of Crops** ***Microorganisms** ***Synthetic Fibers And Plastics**	***Wise Use Of Natural Resources.** ***Combustion And Fuel** ***Conservation Of Biodiversity**	***Metals And Non-Metals** ***Some Natural Phenomena**	***Force And Pressure** ***Friction**
Learning Outcomes	**Students will be able to:** -Identify the various agricultural tools. -Familiarize with the steps involved in crop production. - Explain Nitrogen cycle and Nitrogen fixation. - Observe and identify the slides of various types of microorganisms under the microscope. -Categorize the types of microorganisms and differentiate between useful and harmful microorganisms -Compare the ways of food preservation(Old and Modern) -Analyze the difference between the types of fibres. -Differentiate thermoplastic and thermosetting plastics. - Evaluate the impact of plastic on our environment.	**Students will be able to:** -Discuss the formation and processing of coal and petroleum. -List the products of coal and petroleum. -Interpret the importance and conservation of forest and fossil fuel. -Explain the terms-Calorific value,Fuel efficiency,ignition temperature and enlist characteristics of a good fuel. -Differentiate between the types of combustion and types of fuels. -Analyze different zones of a candle flame. -Explain the reasons responsible for the loss of biodiversity. - Classify animals on the basis of level of threat. - Explore the ways to conserve biodiversity.	**Students will be able to:** -Differentiate between metals, non-metals and alloys on the basis of their properties. -Enlist Practical utility of metals and non-metals. -Writing formulae, Equations, Balancing of equations. -Recognize the different methods to charge a body(Friction, Conduction and Induction). -Discuss Lightning and its after effects. -Explain causes,effects and precautions in case of earthquakes.	**Students will be able to:** -Explain the terms like force, pressure and atmospheric pressure. -Identify and differentiate the types of Forces. -Relate Pressure with area and analyze it for fluids. -Identify and differentiate the types of friction - Infer the advantages and disadvantages of friction. -Tabulate methods of increasing and reducing the friction.
Skills	**Knowledge/Understanding/ Application/Analysis/Evaluation**	**Knowledge/ Understanding/ Application/Analysis/ Evaluation**	**Knowledge/ Understanding/ Application/ Analysis/ Evaluation**	**Knowledge/ Understanding/ Application/ Analysis/ Evaluation**
Activities	**Competency Skill based Activities/Experiential learning Activities:** **Searchwork**: *Students will search about the methods of various types of crop production (Library or interaction with any scientist).Then Students will be asked to give a brief write up of the same. *Find out areas or states where crop rotation is most commonly used.Mark the areas/states on the political map of India.Also mark the states which are leading producers of wheat,rice,sugarcane and jute. **Class-Activity**: Students will be asked to identify and compare the various tools during the ancient and modern age with the help of video shown.They also will be asked to draw them. ***Outdoor-Activity** Students will be given a small area in the	**Competency Skill based Activities/Experiential learning Activities:** **Class-Activities:** *Students Will be shown a video on extraction of coal and Petroleum and then they write paragraphs on the extraction processes. ***Debate** on the impact of extraction of fossil fuels on the environment. ***Group discussion** on the health problems faced by the people working in the coal mines. *Students will be asked to mark the areas which are covered by dense forest on a physical Map of India and On a world map,mark the countries where petrol is extracted.	**Competency Skill based Activities/Experiential learning Activities:** **Class-Activities:** *Students will be asked to observe objects such as, gold ring, silver ring, copper wire or utensil, fresh iron nail etc.on the basis of some criteria : such as: Appearance, hard or soft,conductivity by using the electric circuit made by them.Then there will be a class discussion on physical properties. *Students will learn to calculate the	**Competency Skill based Activities/Experiential learning Activities:** **Class-Activities:** *Students will observe magnetism with Horseshoe magnet and iron nails. *Students will demonstrate electrostatic force with balloons,bits of paper and plastic comb. *Teacher will cut any fruit with the blunt side and sharp side of the knife to explain the term pressure. *Students will solve numericals related to pressure and area.

	school campus where they will be asked to grow the crops, by following the proper sequencing required for the crop production. *<**Lab Activities**- To Show the various slides: Students will be shown various slides of the microorganisms, they will be asked to draw the observed slides and write observations. *To study fermentation of sugar into alcohol by the action of yeast. *<**Search work**- Make a detailed report on the recent Outbreak of disease due to Coronavirus.(Impact of various strains of virus) *<**Investigation** – To find various preservative methods which were used earlier by the people and also compare them with the modern preservative methods. Checking the preservatives used in the packed food items and to check the expiry date. Students made a table of various items they had in their home showing their expiry date, Manufacture date and the preservatives added to them. **Class-Activities:** ***Students will be asked to think of various things they use at home as well as observe in their classroom and sort these things as natural and synthetic. *Students will be asked to make a list of plastic items they use in their daily life and sort these materials/items into thermoplastic and thermosetting plastics. **Lab-Activities:** *To compare the tensile strength of natural and synthetic fibres *To find out the nature of different types of fibres through burn test. **Group-Activity**: Students will be asked to make an awareness program to sensitise people about the ill-effects of using plastic materials. Suggest the kind of materials with which we can replace plastic materials. (**Integration either,Social Science IT and English)**	**Class-Activities:** -Students will investigate the ignition temperature with simple experiments using paper cups,water and candles. -Students will burn a candle and identify the various zones of a candle, and colour of various zones. -Students will make models of fire extinguishers using PET bottles,vinegar,baking soda and tissue paper. **Lab-Activities:** ***** To show that air is a supporter of combustion. *To show that the non-luminous zone is the hottest part of the candle flame. *<**Powerpoint presentation:** Students choose any one topic of their own interest from the chapter and will make a ppt. *Students will locate the wildlife sanctuaries,National parks on the political map of India. *Students will write an essay on Conservation of animals. **(Integration with Social Sciences, IT and English)**	valency through magic numbers. **Lab-Activities:** ***To demonstrate the formation of metal oxide and show that they are basic in nature. *To study the reaction between acids and metals and liberation of hydrogen gas. *To observe the displacement reaction using copper sulphate and iron nail. **Research Activity:** *Students will be divided into groups.Each group will give one metal to another group to research using reference books and will make a beautiful collage showing location,properties,uses and interesting facts of that metal. **Class-Activities:** *Students will demonstrate electric charges with balloons and using the walls of the classroom. *Students will make an Electroscope with polythene strips,screwdriver,glass rod and silk cloth -**Search Work:** *Students will be asked to find out and make a list of areas prone to earthquake.Enlist the precautions to be followed during the earthquake.Students will write all information in a notebook. *Students will be asked to design a layout of a house which can be earthquake resistant. **(Integration with English,IT and Art)**	**Lab-Activities:** ***To show that pressure exerted by liquid increases with depth using two containers, pencil,water and sellotape. *To prove air exerts pressure using cardboard,glass tumbler and water. **Class-Activities:** ***Students will check the factors affecting friction by using books,cardboard and sandpaper.They will be asked to write their observations and conclusions. **Group-Discussion:** Students will discuss the topic"Imagine a world without friction".Then they will write a paragraph on the topic. **(Integration with English and Mathematics**
Assessments	**Pen – Paper test, Observations, diagrams,Tabular information, Map work,report,Concept map , HOTs , Quiz , reasoning questions,Value Based Questions,collage,Search work,Model,C.W. and H.W.**			
	Main- Book: Cambridge Science Voyage			

Cambridge INTERNATIONAL SCHOOL
Co-Educationial (Senior Secondary)

Final Term Curriculum
Session: 2022-23
Subject: Science
Class: VIII

	July/August	September	October	November
Content	***Reproduction** ***The Age Of Adolescence** ***Sound**	***Cell Structure And Function** ***Light**	***Electricity And Circuits**	***Pollution Of Air And Water** ***Night Sky And Solar System**
Learning Outcomes	**Students will be able to:** -Interpret the methods of sexual and asexual reproduction in animals. -Distinguish male/female reproductive parts in human beings along with their functions. -Discuss the sex determination in human -Discuss the changes occurring during puberty and adolescence. -Locate the endocrine glands in the body. -Interpret the functions of glands/hormones. -Describe the concept of sound and noise. -Explain the mechanism of hearing in human beings. - Compare the frequency, pitch,amplitude and loudness of various types of sound. -Create musical instruments and bring one change to understand change in amplitude and sound.	**Students will be able to:** -Know about the discovery of cells and cell theory. - Differentiate between animal and plant cells and their cell organelles. - Understand the cell division. -Recall reflection,laws of reflection and characteristics of image formation by plane mirror. -Comprehend multiple reflections and working of the Human eye. -Analyze the Phenomenon of refraction and dispersion of light.	**Students will be able to:** - Explain the terms anode, cathode, electrolysis and electroplating. -Analyze the process of electrolysis and its applications. -Interpret chemical effects of current in case of electroplating.	**Students will be able to:** **-** Classify the types of pollution. - Identify and Analyze the causes,impact of air and water pollution. - Interpret methods of purification of water. -Recognize and classify various celestial objects. -Identify members of the solar system other than planets.
Activities	**Competency skill based Activities/Experiential learning Activities:** **Class-Activities** *Students will draw Male and female reproductive systems. *Students will be asked to make powerpoint presentations on topics:Fertilization,Embryo development in human beings,metamorphosis in insects and frog.Then they will explain these topics during the class. **Search -Work:** ,*Students will collect information about **Beti Bachao,Beti Padhao Scheme** initiated by the Government of India.They will make a report on it. **Class-Activities:** ***Group Discussion**: Students will discuss changes that occur during adolescent age. How to maintain health and Hygiene during the Adolescent age. **Group Activity:** *Students(Group of 4 or 5 children) will study the diet pattern.They will collect data in tabular form on the basis of balanced diet,need improvement and undernourishment,	**Competency skill based Activities/Experiential learning Activities** ***Observation Activities:-** Students will Identify the parts of a Microscope. *Students will Observe the slides of plant,animal cells and draw the diagram of the microscope and slides shown. **Lab-Activities:** Teacher will demonstrate a method to make temporary slides using an onion peel and cheek cell. Students will try to write a procedure to make a temporary slide ***Model Making** –Making the models of a plant cell or an animal cell. Students will be asked to make a model of an animal or a plant cell, with the waste material found in their home or maybe they use some threads, stones etc.	**Competency skill based Activities /Experiential learning Activities** **Lab-Activities:** *****To demonstrate conductivity through water using beaker,salt,water, battery,metal wire and bulb *To demonstrate electrolysis using tap-water,electrodes, battery and wires. *To demonstrate electroplating using water,copper sulphate,copper electrode,battery,nail and wires. **Class-Activities:** *****Students will classify the materials they have in class into conductors and insulators with the help of simple electric circuits. *Students will enlist the application of electroplating in their	**Competency skill based Activities/Experiential Learning Activities** **Group discussion** *Students will discuss types and causes of pollution in groups. * Students will share their innovative ways to reduce pollution with their classmates. **Project work:** *Students will make a Report on types of Pollution created in their locality and measures that can be adopted to minimize it.Student will take this project only within their neighboring area,if they need to visit around they will follow the proper precautions as prescribed per COVID-19 protocol.Students will make a collaborative project in groups. They will submit this report to the teacher.Students will also find out the places or monuments which are affected due to

	then they will represent data in the form of pie charts or graphs. Students will also make a healthy diet chart for adolescent age. *Students will draw the diagrams of endocrine glands and Menstrual cycle. ***Data Collection And Deduction:** Students will be asked to measure their height and weight every month for about four or five months with the help of a physical education teacher.Each student will tabulate his reading.After four or five Months Students will compare it with their friends.Finally they will be asked to make a graph of **Age vs Height** and **Age vs Weight** of himself and his friend. **Lab-Activity:** ***To study the sound travels in air and not vacuum(bell jar experiment) **Class-Activities**: *Students will make toy telephones to study propagation of sound through a medium. *Students will draw the internal structure of the human ear. *Students will make models of musical instruments and They will also play musical instruments in school with the help of a music teacher.They will come to know about different sounds and types of musical instruments. *Students will recreate their model after they understand the concept of amplitude,frequency and pitch of a sound. **(Integration with IT English,Mathematics, Physical Education Music and Art)**	**Lab-Activities:** ***To verify the laws of reflection using a drawing board,white sheet,or mirror. *To demonstrate refraction and dispersion through glass slab and prism. **Class-Activities**: *Students will make a model of kaleidoscope. *Students will demonstrate multiple reflections using two plane mirrors. *Students will give diagrammatic representation of the human eye and defects of eyes as well as correction of defects. **(Integration with Art)**	daily life.	pollution,what type of pollution is responsible for the corrosion. *Students will write an acrostic poem using the word: Solar system. *Students will refer to the websites of National Geographic or NASA and find out about how the universe was formed. **(Integration with English)**
Skills	**Knowledge/Understanding/ Application/Analysis/ Evaluation**	**Knowledge/ Understanding/ Application/Analysis/ Evaluation**	**Knowledge/ Understanding/ Application/Analysis/ Evaluation**	**Knowledge/ Understanding/ Application/Analysis/ Evaluation**
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