SVKM J.V. Parekh International School

Academic portion for the 1st Term of the session 2014-15

Grade VIII

ENGLISH

Strands	CIE Expectations	Learning Experiences
Phonics, Spelling and Vocabulary	Spell correctly throughout a substantial text including ambitious or complex polysyllabic words. Continue to be aware of spelling errors and correct them. Continue to extend range of language and use it appropriately. Show some appreciation of how the writer's language choices contribute to the overall effect on the reader, e.g. demonstrating the effectiveness of imagery in contrasting texts or arguing that the use of highly emotive language in an advertisement is/is not counterproductive in its effect on an audience. Shape and affect the reader's response through conscious choices and in planned ways by selecting ambitiously from a wide and varied vocabulary for a range of tasks, purposes and readers	Using the dictionary in order to find/ verify the meanings of unknown words: • Contextual meaning of unknown words. Daily exposure and discussion: • Proverbs, sayings and expressions. • Reading original work of great writers • Revising points of view for bias and prejudice. Analysing the choice and use of vocabulary and language.

Grammar and Punctuation	Develop precise, perceptive analysis of how language is used, e.g. explaining how euphemisms conceal bias in a political statement or showing how language use reflects a character's changing emotional state	• Punctuation marks: Identification and usage of appropriate punctuation marks in written and verbal work. • Parts of speech: Identification of various parts of speech, appropriate usage in different contexts, impact of various tenses on verbs, phrasal verbs.
Reading	Analyse and respond to the range of ideas and differing Viewpoints, purposes and themes in a variety of related texts. Analyse in depth and detail writers' use of literary, rhetorical and grammatical features and their effects on different readers. Discuss their own and others' reading, take account of others' views of what they have read, express informed opinions and make recommendations. Develop interpretations of texts, supporting points with detailed textual evidence Analyse the structures of different poetical forms. Demonstrate understanding of impact of vocabulary and meaning through the selection of appropriate quotations. Analyse how texts are shaped by audiences' preferences and opinions.	To comprehend,analyse and interpret given extracts. Understand various techniques for reading for meaning: • Skim • Scan • Reading aloud Reading for literal and figurative meanings. Understanding poetry as a medium to understand the poet's literal and figurative messages. Understand the different genres.

	Develop an understanding of how ideas, experiences and values are portrayed in texts from different cultures and traditions. Understand how words are used for different purposes, e.g. to create atmosphere, to persuade the reader	
Writing	Link a selection of ideas and planning choices explicitly to a clear sense of task, purpose and audience. Use the editing, proofreading and reviewing process, and revise as necessary, to evaluate the effectiveness and likely impact on the reader. Select the most appropriate text format, layout and presentation to create impact and engage the reader. Shape and craft language within paragraphs, and structure ideas between them, to achieve particular effects with purpose and audience in mind. Establish and sustain character, point of view and voice. Begin to develop a range of registers and a personal voice. Add detail, tension and climax to their narratives by shaping the reader's response through conscious choices from a wide and ambitious vocabulary. Understand ways to	• Writing effectively in different genres. • Choosing and using appropriate vocabulary. • Writing to demonstrate understanding of the genre and correct usage of punctuation. • Using effective presentation and layout appropriate to the task. • Using sequencing conventions, connectives, grammar and punctuation. • Using logic.

	deploy a range of formal and informal styles to enhance and emphasise meaning and create a wide range of effects. Understand ways in which writers modify and adapt phrase and sentence structures and conventions to create effects, and how to make such adaptions when appropriate	
Speaking and listening	Use speaking and listening as a method of preparing for written assignments, exploring a wide range of subject matter with precision and effect. • Make increasingly significant contributions both as solo speakers and as members of groups. • Use speaking and listening to build up increasing personal confidence, managing and manipulating the content of their presentation. • Question and respond to others, shaping the direction and content of their talk with well-judged contributions. • Work in groups for a variety of purposes, such as taking decisions and planning and organisation. • Explore complex ideas and issues in drama, establishing roles and applying dramatic approaches with confidence. • Evaluate meaning and impact of a range of features in own and	• Children will participate in class discussions in which they will listen to everyone's point of view and then make appropriate comments. • Children will be exposed to listening comprehensions and will solve verbal exercises based on the same. • Children will incorporate the grammar and punctuation rules while speaking. Children will use appropriate voice modulation techniques based on the task at hand (interactive assemblies, class meets, etc.)

	others' discourse, including broadcast media	

MATHEMATICS

Strands	CIE Expectations	Learning Experiences
Number and Calculation	Add, subtract, multiply and divide directed numbers.	Quick mental tests.
	Recognise the equivalence of 0.1 1/10 and 10^{-1} multiply and divide whole numbers and decimals by 10 to the power of any positive or negative integer.	Quick mental tests and differentiated exercises.
	Round numbers to a given number of decimal places or significant figures; use to give solutions to problems with an appropriate degree of accuracy.	Using similar methods for decimal places and sig figs. Given a rounded result convert it back to find a range of possible answers.
	Estimate square roots and cube roots.	Explain why the $\sqrt{30}$ is between 5 and 6 or $\sqrt[3]{100}$ is between 4 and 5.
	Use positive, negative and zero indices and the index laws for multiplication and division of positive integer powers.	Developing patterns in results to show the effect of negative indices Review and extend index laws from previous work.
	Use the order of operations, including brackets and powers.	Encouraging students to create and share their own questions.
Algebra	Know the origins of the word *algebra* and its links to the work of the Arab mathematician	This could be an internet search.

	Al'Khwarizmi.	
	Use index notation for positive integer powers; apply the index laws for multiplication and division to simple algebraic expressions.	Developing the index laws from expansion of 9^2 x 9^3 to 9x9x9x9x9 = 9^5 group work to develop the logic of index division - collate results.
	Construct algebraic expressions.	Build compound shape from algebraic rectangles and derive expressions for length width perimeter etc.
	Simplify or transform algebraic expressions by taking out single-term common factors.	Simplifying the results found above.
	Understand and use inequality signs (<, >, ≤, ≥,); construct and solve linear inequalities in one variable; represent the solution set on a number line.	Ask the class to list all the values of x that make x>3 true - so we need a better method.
	Construct algebraic expressions.	Build compound shape from algebraic rectangles and derive expressions for length width perimeter etc.
Handling data	Suggest a question to explore using statistical methods; identify the sets of data needed, how to collect them, sample sizes and degree of accuracy.	Generating a Hypothesis, discuss why the survey will be useful if it isn't, don't do. Favourite colour or football team are of little value.
	Identify primary or secondary sources of suitable data.	Research on the internet can be good so can asking people face to face both have their own problems.
	Design, trial and refine data collection sheets.	Follows on from the above. What makes a good question?
	Collect and tabulate discrete and continuous data, choosing suitable, equal class intervals	All one big activity but not all data collected will be suitable for class intervals so encourage a

	where appropriate.	wide scope of questions.
Geometry	Tessellate triangles and quadrilaterals and relate to angle sums and half-turn rotations; know which regular polygons tessellate, and explain why others will not.	Review angle sum at a point and along a line. Prepared diagrams will help here. so that the focus is on the explanation not the draw of shapes.
	Use the coordinate grid to solve problems involving translations, rotations, reflections and enlargements.	Developing the above activity onto graph paper.
	Solve problems using properties of angles, of parallel and intersecting lines, and of triangles, other polygons and circles, justifying inferences and explaining reasoning with diagrams and text.	May need to review the properties we will be working with. Students need to be able to solve Encourage all written and verbal responses to problems.
	Transform 2D shapes by combinations of rotations, reflections and translations; describe the transformation that maps an object onto its image.	The important word is combination. Sometimes the order matters sometimes not.
	Draw 3D shapes on isometric paper.	Build your own shape/solid from blocks and then draw them.
	Analyse 3D shapes through plans and elevations.	Develop plans and side views from the above activities.
	Identify reflection symmetry in 3D shapes.	Use the diagrams above to identify plane of symmetry Build symmetrical models.

HINDI

Strands	Learning Experiences
Speaking and listening	• Students will participate in class discussions and listen to everyone's view. • Students will be exposed to listen to stories and will solve questions based on them. • Students will able to tell their own stories.
Reading	• Students will read books from the library, newspaper, poetry, lessons from textbook. • Explore implicit as well as explicit meanings within the text. • Reading and note making skill will be developed.
Writing	• Students will do appropriate writing exercises through letters, stories, and essay-writing. • Writing number names till100. • Present an explanation in ordered points.
Grammar and punctuation	• Students will be able to understand usage of singulars and plurals in different contexts. • Students will be introduced to the concept of parts of speech [nouns, verbs and adjectives]. Students will be able to understand that different types of the same exist and will learn to identify and use them in their written work. • Students will be able to identify pronouns and understand their importance in a sentence.

FRENCH

Strands	Learning Experiences
Speaking and Listening	Basic ability to communicate on familiar matters and routine situations, topics of personal interest, expressing your opinions and plans and Revision of Personal Information through Question-Answer sessions and Group discussions
Reading	Reference Material and Texts
Writing	Comprehensions, Short Essays (Descriptive and Narrative)
Grammar And Punctuation	Revision of Present Tense, Le passé composé (Perfect Tense) with 'être', Le futur, (Future Tense), L'imparfait (Imperfect Tense), Comparative and Superlative Degrees of Comparison, Introduction of Adverbs

SCIENCE

Strands	CIE Expectations	Learning Experiences
PHYSICS		
Scientific Inquiry	**Ideas and evidence** Make predictions and review them against evidence Be able to talk about the importance of questions, evidence and explanations **Plan investigative work** Suggest ideas that may be tested Choose appropriate apparatus and use it correctly Make predictions referring to previous scientific knowledge and understanding Identify appropriate evidence to collect and suitable methods of collection Outline plans to carry out investigations, considering the variables to control, change or observe **Obtain and present evidence** Make careful observations including measurements Present results in the form of tables, bar charts and line graphs **Consider evidence and approach** Make conclusions from collected data, including those presented Consider explanations for predictions using scientific knowledge and understanding and communicate these in a graph, chart or spreadsheet	Students will draw & label scientific diagrams, design their own experiments, observe & conclude, draw inferences, view videos &ppts, study model systems, make models, play games, answer quizzes, use scientific terminology, use scientific reasoning, make presentations, solve worksheets based on the given topics:
Physics	**Density** Determine the density of a regular solid Determine the density of an irregular solid. Determine the density of a liquid Determine the density of a gas	**Density** Students investigate the density of different sized blocks of material Discuss ways of finding the volume of an irregular solid and a solid that floats in water. Investigate the density of a number of different materials.

		Pupils discuss ways of finding the density of a liquid and then find the density of water, salt water and other non-hazardous liquids Demonstration of finding the density of carbon dioxide
	Pressure Explain that pressure is caused by the action of a force on an area Explain pressures in gases and liquids (qualitative only). Explain the pressure of a liquid in terms of a particle model.	**Pressure** Discuss appropriate examples of experience of pressure such as walking on snow, mud, dry sand. Students explain why knives and drawing pins are effective but only if used the right way round. Students can investigate pressure by pressing objects into plasticine, provided they are pressed with equal forces, shows that the smaller the area of contact the greater the pressure. Use a plastic bottle which has holes in the sides at different heights. When filled, water is forced out sideways, the lower the hole the greater the pressure. Blowing up balloons or tyres or heating tins with a lid on causes an increase of pressure which pupils should explain using a particle model.
	Turning on a Pivot Know that forces can cause objects to turn on a pivot and understand the principle of moments. Introduce the idea of balancing Describe a lever as a simple machine which uses a pivot.	**Turning on a Pivot** Discuss how to open a tin with a tight fitting lid. Explain that they are using a lever with a force and a pivot. Demonstrate other common examples of a lever in action e.g. a wrench, wheel brace. Investigate, as a whole class

	Electrostatics Describe electrostatics and the concept of charge, including digital sensors. Explain that only negative charges move in these circumstances and that by moving away from a neutral site they leave a net positive charge. Investigate the laws of attraction and repulsion. Establish that there seem to be only two types of charge (only two effects are seen). Discuss the electrostatic generator	activity, the effect of changing the distance between the force used and the pivot, and the size of the force on the effectiveness of a lever. Understand the principle of moments by looking at a see saw **Electrostatics** After charging by rubbing, plastic rulers pick up small pieces of paper, strips of cling film spring apart, balloons stick to walls, plastic rods deflect a steady stream of water etc. Suspending one charged item and approaching with another shows that similar charges repel and unlike charges attract Even a simple generator can build up several thousand volts and cause lightning flashes, hair to rise, neon lights to light up, windmills to turn etc. Pupils investigate some problems and some advantages about electrostatics using secondary sources. Presentation of findings to whole class.
CHEMISTRY		
Scientific Inquiry	**Ideas and evidence** • Make predictions and review them against evidence • Be able to talk about the importance of questions, evidence and explanations **Plan investigative work** • Suggest ideas that may be tested • Choose appropriate apparatus and use it correctly • Make predictions referring to	• Be able to talk about the importance of questions, evidence and explanations • Make predictions and review them against evidence • Make conclusions from collected data, including those presented in a graph, chart or

	previous scientific knowledge and understanding • Identify appropriate evidence to collect and suitable methods of collection • Outline plans to carry out investigations, considering the variables to control, change or observe **Obtain and present evidence** • Make careful observations including measurements • Present results in the form of tables, bar charts and line graphs **Consider evidence and approach** Make conclusions from collected data, including those presented	spreadsheet • Recognize results and observations that do not fit into a pattern, including those presented in a graph, chart or spreadsheet • Consider explanations for predictions using scientific knowledge and understanding and communicate these present conclusions using different methods
Chemistry	**<u>Chapter 1: The Structure of the atom</u>** • The ancient Greek original idea of atom • Investigation of chemical reaction that supported the idea of atom • Daltons atomic theory • The structure of the atom • Rutherford investigation of structure of atom • Atomic structure of first 20 elements <u>Chapter 2: The Periodic Table</u> • How 19th century scientists used data about elements to sort them in order • How modern scientist group the elements in the periodic table • The alkali metals • The alkaline earth metals • The halogens • The noble gases • The unique properties of hydrogen	• Describe the structure of an atom and learn about the methods and discoveries of Rutherford • Explains atom sub atomic particles and its properties • Compare the structures of the first twenty elements of the Periodic Table • Describe trends in groups and periods • Talk about the contribution of scientists. • Student able to learn first 20 elements from the periodic table • Student recognize its uses in day to day life

	<u>Chapter 3:Endothermic & Exothermic Reaction</u> • Endothermic reaction , including melting, the reaction of sherbet in the mouth ,cooking , the breakdown of limestone & photosynthesis • Exothermic reaction , including burning respiration & oxidation • Investigating a burning candle • The danger of incomplete combustion • Measuring energy in fuel • Improving fuel efficiency	• Explore and explain the idea of endothermic processes, e.g. melting of ice, and exothermic reactions, e.g. burning, oxidation • Describe the reactivity of metals with oxygen, water and dilute acids • Explore and understand the reactivity series • Give examples of displacement reactions • Explain how to prepare some common salts by the reactions of metals and metal carbonates and be able to write word equations for these reactions Give an explanation of the effects of concentration, particle size, temperature and catalysts on the rate of a reaction

BIOLOGY		
Biology	**Photosynthesis** Define and describe photosynthesis and use the word equation. Summarise the requirements for plant growth Investigate the effect of different nutrients on plant growth Know that carbon dioxide can enter and oxygen escape through stoma. Construct the word equation for photosynthesis Discuss how to investigate the effect of light on growing plants. The importance of water and mineral salts to plant growth. **Reproduction in Flowering Plants** Understand sexual reproduction in flowering plants including pollination, fertilization, seed formation and dispersal Identify the positions and functions of the reproductive parts of a flowering plant. Discuss different ways pollen may travel from one flower to another. Discuss the features of a wind pollinated and an insect pollinated flower. Discuss the advantages and dis-advantages of self-pollination and cross-pollination. Identify pollen as the male sex cell and the ovule as the female sex cell. Introduce 'gamete' as meaning sex cell. Understand sexual reproduction in flowering plants including pollination, fertilization, seed formation and dispersal Identify the positions and functions of the	**Photosynthesis** Set up some quickly germinating seeds in advance, e.g. cress, and leave them in the dark to observe the effects. Some should be set up in the light as a comparison. Construct the word equation for photosynthesis and explain it is an endothermic reaction because of the requirement for energy. Light + Carbon dioxide +water → sugar + oxygen Leaf-peel techniques can be used to see stoma, possibly showing differences on upper and lower surfaces Appreciate the importance of the three essential elements, nitrogen, phosphorus and potassium. Summarise the requirements for plant growth in the form of a diagram of a plant showing the intake and output of items by arrows and including the transport routes of xylem and phloem. **Reproduction in Flowering Plants** For a selection of locally occurring flowering plants, identify the different parts of the plant, including leaf, stem, roots, flower. Draw diagrams of a flower showing the male and female reproductive parts. Include ovules in the ovary Pupils can investigate the structure of the flowers of locally occurring plants

	reproductive parts of a flowering plant. Identify pollen as the male sex cell and the ovule as the female sex cell. Introduce 'gamete' as meaning sex cell. Examine a wide range of fruits and discuss methods of dispersal. Fruits can be seen as the development of the ovary. Investigate reasons for the dispersal of plants. **Adapting to a Habitat** Explain the ways in which living things are adapted to their habitats. Discuss adaptations to habitats Describe adaptations to seasons Discuss extreme adaptations. **Ecosystems** Explain and model food chains, food webs and energy flow. Explain the terms producer, primary consumer, secondary consumer, tertiary consumer, herbivore and carnivore. Introduce the term 'trophic level'. Research the work of scientists studying the natural world. Explain and model food chains, food webs and energy flow. Explain the role of decomposers	Observe pollen grains under the microscope. Investigate examples of wind and insect pollinated flowers (live, diagrams or photographs) and if possible a local flower showing the pollen and sticky stigma clearly. Observe pollen tubes using a microscope. Draw diagrams to show how the pollen causes a tube to grow down the style and into the ovary to allow fertilization A seed such as a large bean can be bisected to identify the parts and a test done for starch. Investigate wind dispersal by making a paper model (two or more wings and a weighted centre). By adjusting the wing size, total mass, shape etc students aim to make it stay in the air for the longest possible time, after dropping it from a certain height. Research the life cycle of a flowering plant and display on a hoop of paper. Students discuss the importance of seeds within the life cycle. Compare the growth of plants which are crowded with those with plenty of space. The same amount of water, light and nutrients should be supplied to, for example, cress seeds. **Adapting to a Habitat** Pupils choose(from a list) an animal and a plant and research and report on how they are adapted to be able to survive, by finding food and shelter and

		avoiding predators in their habitat **Ecosystems** Review work on food chains from stage 7 and discuss need to find out, by observation or from secondary sources, which organism is eaten by which to be able to make a food chain. Make simple food chains from plants and animal identified by their key. Explain that that most food chains are interlinked as food-webs. Pupils identify food chains within an example of a food web, preferably of local species. Discuss the effect of the removal of one type of organism on the other organisms in the food web. Explain that food chains and webs show biomass and not individuals. Introduce the idea of energy flowing along the food chain and so flowing through the food web. Pupils redesign the layout of their food webs to show energy transfer through trophic levels. Demonstrate the breakdown of bread (or fruit) as moulds are allowed to grow on it in a sealed container.

GP

Strands	CIE Expectations	Learning Experiences
Global Perspectives	**Humans & Other Species** Research and understand the overall picture of human/other species interaction Analyse and evaluate different perspectives towards the relationships between animals and other species in my country/locality Explore and reflect on personal and others perspectives about animal welfare Family & Demographic Change Reflect on personal perspectives and those of others on the family and the role of parents Analyse and evaluate the role of a parent Research and understand the makeup of families locally and appreciate different perspective on family life Analyse and evaluate examples of care for elderly people Analyse the reason for population changes linked to birth and death rates	**Humans & Other Species** Class discussion on the key question – include how do humans use other species, importance of some species Groups investigate a particular use/concern/response about other species and their relationship with humans e.g. endangered species, whale hunting, overfishing, animal experimentation, fur trade, conservation activities, being vegetarian/vegan etc. In each case information on nature of relationship and impact of relation is needed. Investigate the perspectives people have about vegetarianism and animal rights in two different cultures. Produce a report highlighting similarities and differences. Discuss the role of a charities like PETA, Endangered Species International, PAWS etc. Family & Demographic Change Survey on family composition. Discuss close/extended family anddomestic set up. Discuss list of parent/child responsibilities with parents at home. Reflect on their reaction. Produce a parent's and children's charter to encourage

		mutualrespect and good relationships in families. Investigate government policy towards the family. Investigate the work of charities in helping the elderly Reflect on the type of care a learner would prefer when they areelderly. Present and interpret maps, graphs and population pyramids for achosen range of countries

Business Studies

Strands	CIE	Learning Experiences
1. Understanding business activity 1.1 Business activity: 1.1.1 The purpose and nature of business activity:	Concepts of needs, wants, scarcity and opportunity cost • Importance of specialisation • Purpose of business activity • The concept of adding value and how added value can be increased	• Writing the key points in the book. • Written assignments.
1.2 Classification of businesses:	1.2.1 Business activity in terms of primary, secondary and tertiary sectors: • Basis of business classification, e.g. by using examples • Reasons for the changing importance of business classification, e.g. in developed and developing economies 1.2.2 Classify business enterprises between private sector and public sector in a mixed economy.	• Oral discussion of activities. • Making mind maps for better understanding.
1.3 Enterprise, business growth and size	1.3.1 Enterprise and entrepreneurship: • Characteristics of successful entrepreneurs	• Group discussion.

	• Contents of a business plan and how business plans assist entrepreneurs • Why and how governments support business start-ups, e.g. grants, training 1.3.2 The methods and problems of measuring business size: • Methods of measuring business size, e.g. number of people employed, value of output, capital employed (profit is not a method of measuring business size) • Limitations of methods of measuring business size 1.3.3 Why some businesses grow and others remain small: • Why the owners of a business may want to expand the business • Different ways in which businesses can grow • Problems linked to business growth and how these might be overcome • Why some businesses remain small. 1.3.4 Why some (new or established) businesses fail: • Causes of business failure, e.g. lack of management skills,	

	changes in the business environment • Why new businesses are at a greater risk of failing	
1.4 Types of business organisation	1.4.1 The main features of different forms of business organisation: • Sole traders, partnerships, private and public limited companies, franchises and joint ventures • Differences between unincorporated businesses and limited companies • Concepts of risk, ownership and limited liability • Recommend and justify a suitable form of business organisation to owners/management in a given situation • Business organisations in the public sector, e.g. public corporations	

Information and Communication Technology (ICT)

Topic	Contents	Learning Experience
Control System	○ Introduction to control system ○ Sensors ○ Designing water chute ○ Water flume ○ Presenting your system using presentation	• Students will learn what is control system? • How computer control system works?
Algorithm and Flowcharts	○ Simple flowcharts ○ Using criteria in flowchart ○ Using loop in flowchart	• Students will learn what is algorithm and flowchart? • They will learn how to write algorithm • They will learn how to draw flowcharts
Types of computer	○ What is hardware and software ○ RAM ROM (components of computer system) ○ Input, output storage devices ○ Microprocessor controlled devices ○ Computer networks	• Student will able to differentiate between hardware and software • Types of primary memory and its features • Different hardware devices • Types of computer networks
Role of ICT	○ Effects of using ICT ○ Copyright and data protection law ○ Reliability and bias	• What is the impact of ICT on society • Copyright and data protection law