CANADIAN INTERNATIONAL SCHOOL

UNIVERSITY of CAMBRIDGE International Examinations

Cambridge Secondary 1

MIDDLE SCHOOL CURRICULUM

For **English, Maths and Science,** the learning objectives are taken from the Cambridge International Secondary1 Curriculum. For more information, please visit www.cie.org.uk.

For **Technology,** Cambridge Starters, and Next Steps resources provide the learning objectives. Digital Citizenship units with Common Sense Media learning objectives and activities are incorporated. www.commonsensemedia.org

Art, Music, Drama and Physical Education are taught with a school generated curriculum based on Ontario learning objectives, modified to suit our international school setting.
http://www.edu.gov.on.ca/eng/curriculum/elementary/index.html

English as a Second Language follows Cambridge English Learners objective and this intensive English course is not grade level specific as learners new to English join all grades of CIS secondary.
http://www.cambridgeenglish.org/exams/key/

All Additional Languages are created with the same learning objectives using the Common European Framework of Reference for Languages (CEFR)
http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf

MIDDLE SCHOOL CURRICULUM

FOR GRADES 6,7 & 8

CAMBRIDGE
International Examinations

Cambridge International School

Cambridge
Secondary 1

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Cambridge
Secondary 1

CURRICULUM - CORE SUBJECTS | GRADE 6 (STAGE 7)

English as a Second Language (ESL)

Grade 6 (Stage 7)

Reading

- Understand the main points in texts on a limited range of unfamiliar general and curricular topics, including some extended texts.
- Understand specific information in texts on a limited range of unfamiliar general and curricular topics, including some extended texts.
- Understand the detail of an argument on a limited range of unfamiliar general and curricular topics, including some extended texts.
- Understand implied meaning on a limited range of unfamiliar general and curricular topics, including some extended texts.
- Recognise the attitude or opinion of the writer on a limited range of unfamiliar general and curricular topics, including some extended texts.
- Deduce meaning from context on a limited range of unfamiliar general and curricular topics, including some extended texts.
- Recognise typical features at word, sentence and text level in a limited range of written genres.
- Read a limited range of extended fiction and non-fiction texts on familiar and some unfamiliar general and curricular topics with confidence and enjoyment.
- Use familiar and some unfamiliar paper and digital reference resources to check meaning and extend understanding.
- Begin to recognise inconsistencies in argument in short texts on a limited range of general and curricular subjects.

Writing

- Brainstorm, plan and draft written work at text level, with some support, on a range of general and curricular topics.
- Compose, edit and proofread written work at text level, with some support, on a range of general and curricular topics.
- Write, with some support, with moderate grammatical accuracy on a limited range of general and curricular topics.
- Develop coherent arguments, supported when necessary by reasons, examples and evidence, for a limited range of written genres on general and curricular topics.
- Use, with some support, style and register appropriate to a limited range of written genres on general and curricular topics.
- Use appropriate layout for a range of written genres on a growing range of general and curricular topics.
- Spell a growing range of high-frequency vocabulary accurately on a range of general and curricular topics.
- Punctuate, with accuracy, a growing range of written work on a range of general and curricular topics.

Use of English

- Use a growing range of abstract nouns and compound nouns; use a limited range of gerunds as subjects and objects;
- Use a limited range of complex noun phrases;
- Use a range of quantifiers for countable and uncountable nouns including several, plenty, a large/small number/amount on a range of general and curricular topics.
- Use a growing range of past perfect simple forms in narrative and reported speech;
- Use a growing range of compound adjectives and adjectives as participles and a limited range of comparative structures to indicate degree including not as...as, much ...than on a range of general and curricular topics.
- Use a limited range of comparative degree adverb structures (not, as, quickly as,far, less quickly) with regular and irregular adverbs;
- Use a range of prepositions preceding nouns and adjectives in prepositional phrases;
- Use a range of determiners including all, half, both [of] in pre-determiner function on a range of general and curricular topics.

- Use a range of questions using a range of different tense and modal forms on a range of general and curricular topics.
- Use a range of pronouns including indefinite pronouns (anybody, anyone, anything)and quantitative pronouns (everyone, everything, none, more, less, a few) on a range of general and curricular topics.
- Use a growing range of simple perfect forms to express (recent, indefinite, unfinished past) on a range of general and curricular topics.
- Use a growing range of pre-verbal, post-verbal and end- position adverbs; Use prepositions as, like to indicate manner;
- Use a range of active and passive simple present and past forms; on a variety of general and curricular topics.
- Use a limited range of causative forms have/ get done; use a growing range of dependent prepositions following adjectives; on a range of general and curricular topics.
- Use a growing range of present continuous forms and past continuous, including some passive forms, on a range of general and curricular topics.
- Use a growing range of reported speech forms for statements, questions and commands: say, ask, tell, including reported requests, on a range of general and curricular topics.
- Use infinitive forms after a limited range of verbs and adjectives; use gerund forms after a limited range of verbs and prepositions;
- Use a limited range of prepositional verbs and begin to use common phrasal verbs; use a range of relative clauses including why clauses; on a range of general and curricular topics.
- Use a growing range of conjunctions including since, as to explain reasons and the structures so ... that, such a/... that in giving explanations on a range of general and curricular topics.
- Use if/unless/if only in second conditional clauses and wish [that] clauses [present reference]; on a range of general and curricular topics.
- Use a range of modal forms for a range of functions: obligation, necessity, possibility, permission, requests, suggestions, prohibition on a range of general and curricular topics.

Listening

- Understand, with little or no support, the main points in extended talk on a wide range of general and curricular topics.
- Understand, with little or no support, most specific information in extended talk on a wide range of general and curricular topics.
- Understand, with little or no support, most of the detail of an argument in extended talk on a wide range of general and curricular topics.
- Understand, with little or no support, most of the implied meaning in extended talk on a wide range of general and curricular topics.
- Recognise, with little or no support, the opinion of the speaker(s) in extended talk on a wide range of general and curricular topics.
- Deduce, with little or no support, meaning from context in extended talk on a wide range of general and curricular topics.
- Begin to recognise typical features at word, sentence and text level in a limited range of spoken genres.
- Understand extended narratives on a range of general and curricular topics.

Speaking

- Use formal and informal registers in their talk on a limited range of general and curricular topics.
- Ask questions to clarify meaning on a wide range of general and curricular topics.
- Give an opinion, at discourse level, on a range of general and curricular topics.
- Respond, with some flexibility, at both sentence and text level, to unexpected comments on a range of general and curricular topics.
- Link comments, with some flexibility, to what others say at sentence and discourse level in pair, group and whole class exchanges.
- Interact with peers to negotiate classroom tasks.
- Use appropriate subject-specific vocabulary and syntax to talk about a limited range of curricular topics.

Grade 6 (Stage 7)

Phonics, Spelling and Vocabulary

- Spell correctly most words used.
- Increase knowledge of word families, roots, derivations, morphology and regular spelling patterns.
- Use a dictionary and thesaurus effectively to further develop vocabulary.
- Learn a range of vocabulary appropriate to their needs, and use words precisely in speech and writing to clarify and extend meaning and to interest their audience.
- Learn to use the terms 'image', 'simile', 'metaphor', 'onomatopoeia' 'setting' and 'genre'.

GRAMMAR AND PUNCTUATION

Reading

- Comment on the use of formal and informal language and discuss the writer's motivation for making the choice.
- Show awareness of the reasons for using longer and shorter sentences.
- Begin to comment on the control of pace and meaning through choice of sentences and variety of sentence openings.

Writing

- Use a wide range of punctuation to make meaning clear, including generally accurate use of commas in complex sentences and to present dialogue.
- Use correct grammar, including articles, word order and tenses in a range of genres and text types.
- Clarify relationships between ideas with an increasingly accurate and growing use of connectives.
- Provide clarity and emphasis in writing, using a variety of sentence lengths, structures and subjects.
- Use a range of increasingly complex sentence structures to communicate meaning and to give fluency to their writing.
- Build up detail and convey shades of meaning through sentence structure, e.g. controlling order of clauses, expanding verb phrases.

Reading

Fiction and poetry

- Demonstrate understanding of features of narrative and non-narrative texts by explaining and developing these features in their own discussion and writing.
- Use inference and deduction to recognise implicit and inferred meanings.
- Identify and understand the main ideas, viewpoints, themes and purposes in a text. Support comments by quotation from more than one location in the text.
- Identify and describe the effect of writers' and poets' use of literary, rhetorical and grammatical features, including imagery and figurative language.
- Comment on a writer's use of language, demonstrating an understanding of the implication of their use of vocabulary.
- Give an informed personal response to a text and provide some textual reference in support.
- Understand how readers make choices about the texts they like reading, e.g. by author or genre and know a range of ways in which to respond to texts.
- Compare poems, showing awareness of poets' use of language and its intended impact on the reader.
- Understand the different ways texts can reflect the social, cultural and historical contexts in which they were written.

Non-fiction

- Extract the main points and relevant information from a text or ICT.
- Source, using a range of strategies such as skimming and scanning.
- Make relevant notes to select, collate and summarise ideas from texts.

- Explore the range of different ways writers use layout, form and presentation in a variety of texts.
- Explore the variety and range of ways in which the content of texts can be organised, structured and combined.

Writing

Fiction and poetry

- Develop different ways of generating, organising and shaping ideas, using a range of planning formats or methods.
- Understand the conventions of standard English and how to use them consistently in writing.
- Write to express a personal viewpoint.
- Shape the overall organisation, sequence and presentation of a text to convey ideas clearly and effectively.
- Mirror the purpose of the writing by appropriate use of paragraphs and selection of linking words and phrases.
- Use vocabulary precisely and imaginatively to clarify and extend meaning and create specific effects.
- Vary sentence length and structure in order to provide appropriate detail and clarify relationships between setting, characters, themes, plot, etc.
- Begin to develop character and voice in fiction writing.
- Explore some of the key linguistic and literary techniques used by writers, and begin to use them for intended effect.
- Understand and use degrees of formality in a range of texts according to context, purpose and audience.

Non-fiction

- Use features and conventions of a wide variety of text types in order to write to inform, explain, describe, argue, persuade and comment.
- Practise note-taking using different styles for different purposes.

Speaking and listening

- Speak for a variety of purposes, such as to explain, describe, narrate, explore, analyse, imagine, discuss, argue and persuade.
- Deliberately shape talk for clarity and effect and to engage listener.
- Use a range of vocabulary appropriate to context, and use language to clarify meaning and to interest and convince their audience.
- Practise speaking fluently and clearly at an appropriate pace and volume.
- Develop the ability to listen courteously to others and be sensitive to turn taking.
- Begin to make significant contributions to group discussions, engaging with complex material, making perceptive responses and showing awareness of a speaker's aims.
- Work in solo, paired and group assignments, including role-play.
- Through role-play, show insight into texts and issues through choice of speech, gesture and movement.
- Explain features of own and others' language, showing sensitivity to the impact of varying language for different purposes and situations.

Science

Grade 6 (Stage 7)

Scientific enquiry

- Consider evidence and approach
- Make conclusions from collected data, including those presented in a graph, chart or spreadsheet.
- Recognise 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.

Ideas and evidence

- Be able to talk about the importance of questions, evidence and explanations.
- Make predictions and review them against evidence.
- Suggest ideas that may be tested.
- Outline plans to carry out investigations, considering the variables to control, change or observe.
- Make predictions referring to previous scientific knowledge and understanding.
- Identify appropriate evidence to collect and suitable methods of collection.
- Choose appropriate apparatus and use it correctly. Eo Obtain and present evidence

Plan investigative work

- Make careful observations including measurements.
- Present results in the form of tables, bar charts and line graphs.
- Use information from secondary sources.

BIOLOGY

Plants

- Recognise the positions, and know the functions of the major organs of flowering plants, e.g. root, stem, leaf.

Humans as organisms

- Explore the role of the skeleton and joints and the principle of antagonistic muscles.
- Recognise the positions and know the functions of the major organ systems of the human body. Secondary sources can be used.
- Research the work of scientists studying the human body.

Living things in their environment

- Describe how organisms are adapted to their habitat, drawing on locally occurring examples. Secondary sources can be used.
- Draw and model simple food chains.
- Discuss positive and negative influence of humans on the environment, e.g. the effect on food chains, pollution and ozone depletion.
- Discuss a range of energy sources and distinguish between renewable and non-renewable resources. Secondary sources can be used.

Cells and organisms

- Identify the seven characteristics of living things and relate these to a wide range of organisms in the local and wider environment.
- Know about the role of micro-organisms in the breakdown of organic matter, food production and disease, including the work of Louis Pasteur.
- Identify the structures present in plant and animal cells as seen with a simple light microscope and/or a computer microscope.
- Compare the structure of plant and animal cells.
- Relate the structure of some common cells to their functions. Secondary sources can be used.
- Understand that cells can be grouped together to form tissues, organs and organisms.
- Variation and classification
- Understand what is meant by a species.
- Investigate variation within a species. Secondary sources can be used.
- Classify animals and plants into major groups, using some locally occurring examples.

Science

CHEMISTRY

States of matter

- Show in outline how the particle theory of matter can be used to explain the properties of solids, liquids and gases, including changes of state.

Material properties

- Distinguish between metals and non-metals.
- Describe everyday materials and their physical properties.

Material changes

- Use a pH scale.
- Understand neutralisation and some of its applications.
- Use indicators to distinguish acid and alkaline solutions.

The Earth

- Observe and classify different types of rocks and soils.
- Research simple models of the internal structure of the Earth.
- Examine fossils and research the fossil record.
- Discuss the fossil record as a guide to estimating the age of the Earth.
- Learn about most recent estimates of the age of the Earth.

PHYSICS

Forces and motion

- Describe the effects of forces on motion, including friction and air resistance.
- Describe the effect of gravity on objects. Secondary sources can be used.

Energy

- Understand that energy cannot be created or destroyed and that energy is always conserved.
- Recognise different energy types and energy transfers.

The Earth and beyond

- Describe how the movement of the Earth causes the apparent daily and annual movement of the sun and the stars.
- Describe the relative position and movement of the planets and the sun in the solar system.
- Discuss the impact of the ideas and discoveries of Copernicus, Galileo and more recent scientists.
- Understand that the sun and other stars are sources of light and that planets and other bodies are seen by reflected light.

Grade 6 (Stage 7)

Number

Fractions, decimals, percentages, ratio and proportion

- Recognise the equivalence of simple fractions, decimals and Ni Integers, powers and roots / percentages.
- Simplify fractions by cancelling common factors and identify equivalent fractions; change an improper fraction to a mixed number, and vice versa; convert terminating decimals to fractions,e.g. 0.23 = 23 .
- Compare two fractions by using diagrams, or by using a calculator to convert the fractions to decimals, e.g. 3 and 13 .
- Add and subtract two simple fractions; find fractions of quantities (whole number answers); multiply a fraction by an integer.
- Understand percentage as the number of parts in every 100; use fractions and percentages to describe parts of shapes, quantities and measures.
- Calculate simple percentages of quantities (whole number answers) and express a smaller quantity as a fraction or percentage of a larger one.
- Use percentages to represent and compare different quantities.
- Use ratio notation, simplify ratios and divide a quantity into two parts in a given ratio.
- Recognise the relationship between ratio and proportion.
- Use direct proportion in context; solve simple problems involving ratio and direct proportion.

Integers, powers and roots

- Recognise negative numbers as positions on a number line, and order, add and subtract positive and negative integers in context.
- Recognise multiples, factors, common factors, primes (all less than 100), making use of simple tests of divisibility; find the lowest common multiple in simple cases; use the 'sieve' for generating primes developed by Eratosthenes.
- Recognise squares of whole numbers to at least 20 × 20 and the corresponding square roots; use the notation 72 and square root symbol 49.
- Fractions of quantities (whole number answers); multiply a fraction by an integer.

Place value, ordering and rounding

- Interpret decimal notation and place value; multiply and divide whole numbers and decimals by 10, 100 or 1000 fractions of quantities (whole number answers); multiply a fraction by an integer.
- Order decimals including measurements, changing these to the same units.
- Round whole numbers to the nearest 10, 100 or 1000 and decimals, including measurements, to the nearest whole number or one decimal place.

Algebra

- Use letters to represent unknown numbers or variables; know the meanings of the words term, expression and equation.
- Know that algebraic operations follow the same order as arithmetic operations.
- Construct simple algebraic expressions by using letters to represent numbers.
- Simplify linear expressions, e.g. collect like terms; multiply a constant over a bracket.
- Derive and use simple formulae, e.g. to change hours to minutes.
- Substitute positive integers into simple linear expressions/ formulae.
- Construct and solve simple linear equations with integer coefficients (unknown on one side only), e.g. 2x = 8, 3x + 5 = 14, 9 – 2x = 7.

Calculation

- Consolidate the rapid recall of number facts, including positive integer complements to 100, multiplication facts to 10 × 10 and associated division facts.
- Use known facts and place value to multiply and divide two- digit numbers by a single-digit number, e.g. 45 × 6, 96 ÷ 6.

- Know and apply tests of divisibility by 2, 3, 5, 6, 8, 9, 10 and 100.
- Use known facts and place value to multiply simple decimals by one-digit numbers, e.g. 0.8 × 6.
- Calculate simple fractions and percentages of quantities, e.g. one quarter of 64, 20% of 50 kg.
- Use the laws of arithmetic and inverse operations to simplify calculations with whole numbers and decimals.
- Use the order of operations, including brackets, to work out simple calculations.
- Add and subtract integers and decimals, including numbers with different numbers of decimal places.
- Multiply and divide decimals with one and/or two places by single-digit numbers, e.g. 13.7 × 8, 4.35 ÷ 5.
- Know that in any division where the dividend is not a multiple of the divisor there will be a remainder, e.g.157 ÷ 25 = 6 remainder 7. The remainder can be expressed as a fraction of the divisor,
  e.g. 157 ÷ 25 = 6 7.
- Know when to round up or down after division when the context requires a whole-number answer.

Expressions, equations and formulae

- Use letters to represent unknown numbers or variables; know the meanings of the words term, expression and equation.
- Know that algebraic operations follow the same order as arithmetic operations.
- Construct simple algebraic expressions by using letters to represent numbers.
- Simplify linear expressions, e.g. collect like terms; multiply a constant over a bracket.
- Derive and use simple formulae, e.g. to change hours to minutes.
- Substitute positive integers into simple linear expressions/ formulae.
- Construct and solve simple linear equations with integer coefficients (unknown on one side only), e.g. 2x = 8, 3x + 5 = 14, 9 – 2x = 7.

Sequences, functions and graphs

- Generate terms of an integer sequence and find a term given its position in the sequence; find simple term-to-term rules.
- Generate sequences from spatial patterns and describe the general term in simple cases.
- Represent simple functions using words, symbols and mappings.
- Generate coordinate pairs that satisfy a linear equation, where y is given explicitly in terms of x; plot the corresponding graphs; recognise straight-line graphs parallel to the x- or y-axis.

Geometry

Shapes and geometric reasoning

- Identify, describe, visualise and draw 2D shapes in different orientations. Use the notation and labelling conventions for points, lines, angles and shapes.
- Name and identify side, angle and symmetry properties of special quadrilaterals and triangles, and regular polygons with 5, 6 and 8 sides.
- Estimate the size of acute, obtuse and reflex angles to the nearest 10°.
- Start to recognise the angular connections between parallel lines, perpendicular lines and transversals.
- Calculate the sum of angles at a point, on a straight line and in a triangle, and prove that vertically opposite angles are equal; derive and use the property that the angle sum of a quadrilateral is 360°.
- Solve simple geometrical problems by using side and angle properties to identify equal lengths or calculate unknown angles, and explain reasoning.
- Recognise and describe common solids and some of their properties, e.g. the number of faces, edges and vertices.
- Recognise line and rotation symmetry in 2D shapes and patterns; draw lines of symmetry and complete patterns with two lines of symmetry; identify the order of rotation symmetry.

- Use a ruler, set square and protractor to:

1. measure and draw straight lines to the nearest millimetre
2. measure and draw acute, obtuse and reflex angles to the nearest degree
3. draw parallel and perpendicular lines construct a triangle given two sides and the included angle (SAS) or two angles and the included side (ASA)
4. construct squares and rectangles
5. construct regular polygons, given a side and the internal angle

Position and movement

- Read and plot coordinates of points determined by geometric information in all four quadrants.
- Transform 2D points and shapes by: – reflection in a given line – rotation about a given point – translation
- Know that shapes remain congruent after these transformations.

Measure ,Length, mass and capacity

Time and rates of change

- Choose suitable units of measurement to estimate, measure, calculate and solve problems in everyday contexts.
- Know abbreviations for and relationships between metric units; convert between:
- Know the abbreviations for and relationships between square metres (m2), square centimetres (cm2), square millimetres (mm2).
- Derive and use formulae for the area and perimeter of a rectangle; calculate the perimeter and area of compound shapes made from rectangles.
- Derive and use the formula for the volume of a cuboid; calculate volumes of cuboids.
- Calculate the surface area of cubes and cuboids from their nets.
  - kilometres (km), metres (m), centimetres (cm), millimetres (mm)
  - tonnes (t), kilograms (kg) and grams (g)
  - litres (l) and millilitres (ml)
- Read the scales on a range of analogue and digital measuring instruments.

Planning and collecting data

- Decide which data would be relevant to an enquiry and collect and organise the data.
- Design and use a data collection sheet or questionnaire for a simple survey.
- Construct and use frequency tables to gather discrete data, grouped where appropriate in equal class intervals.

Processing and presenting data

- Find the mode (or modal class for grouped data), median and range.
- Calculate the mean, including from a simple frequency table.
- Draw and interpret: – bar-line graphs and bar charts – frequency diagrams for grouped discrete data – simple pie charts – pictograms

Interpreting and discussing results

- Draw conclusions based on the shape of graphs and simple statistics.
- Compare two simple distributions using the range and the mode, median or mean.

Probability

- Use the language of probability to describe and interpret results involving likelihood and chance.
- Understand and use the probability scale from 0 to 1.
- Find probabilities based on equally likely outcomes in simple contexts.
- Identify all the possible mutually exclusive outcomes of a single event.
- Use experimental data to estimate probabilities.
- Compare experimental and theoretical probabilities in simple contexts.
- Using techniques and skills in solving mathematical problems.
- Use the laws of arithmetic and inverse operations to simplify calculations with whole numbers and decimals.

Mathematics

Using understanding and strategies in solving problems

- Manipulate numbers, algebraic expressions and equations, and apply routine algorithms.
- Understand everyday systems of measurement and use them to estimate, measure and calculate.
- Recognise and use spatial relationships in two and three dimensions.
- Draw accurate mathematical diagrams, graphs and constructions.
- Check results of calculations by using inverse operations.
- Identify and represent information or unknown numbers in problems, making correct use of numbers, symbols, words, diagrams, tables and graphs.
- Recognise mathematical properties, patterns and relationships, generalising in simple cases.
- Work logically and draw simple conclusions.
- Relate results or findings to the original context and check that they are reasonable.
- Record and explain methods, results and conclusions.
- Discuss and communicate findings effectively, orally and in writing.
- Estimate, approximate and check their working.
- Solve word problems involving whole numbers, percentages, decimals, money or measures: choose operations and mental or written methods appropriate to the numbers and context, including problems with more than one step.
- Identify and represent information or unknown numbers in problems, making correct use of numbers, symbols, words, diagrams, tables and graphs.
- Recognise mathematical properties, patterns and relationships, generalising in simple cases.
- Work logically and draw simple conclusions.
- Relate results or findings to the original context and check that they are reasonable.
- Record and explain methods, results and conclusions.
- Discuss and communicate findings effectively, orally and in writing.

Grade 6 (Stage 7)

Investigating the Past

- Explain how social scientists such as archaeologists, historians, and geographers investigate the past.
- Hypothesize about the lives of prehistoric humans and compare ideas with those of social scientists.
- Interpret a cave painting by using the methodology of social scientists.

Early Hominids

- Identify when and where various hominid groups lived.
- Describe the physical and cultural adaptations of each hominid group.
- Analyze how the capabilities of each hominid group—development of tools, use of fire, and living in groups—helped them survive.

From Hunters and Gatherers to Farmers

- Identify Beolithic settlements and explain the reason for their location.
- Compare the lives of hunters and gatherers during the Paleolithic Age with the lives of people during the Neolithic Age.
- Explain how the domestication of plants and animals created a stable food supply and led to important changes in shelter, communities, jobs, and trade.

The Rise of Sumerian City-States

- Describe the location and physical setting of mesopotamia, including the Tigris and Euphrates river system.
- Analyze geographic problems affecting ancient Mesopotamians and evaluate potential solutions.
- Describe how Mesopotamians modified their physical environment to solve geographic problems.
- Explain how the development of agricultural techniques, such as irrigation systems, led to the emergence of Sumerian city-states.

Ancient Sumer

- Analyze artifacts from ancient Sumer and explain how they are examples of the characteristics of civilization.
- Identify agricultural inventions that allowed Sumerian city-states to create a stable food supply and a complex society.
- Explain the relationship between religion and the social and political order in Sumer.
- Explain the evolution of Sumerian written language, from pictographs to cuneiform.
- Apply the characteristics of civilization to modern day society.

Exploring Four Empires of Mesopotamia

- Identify the location of the Akkadian, Babylonian, Assyrian, and Neo- Babylonian empires.
- Describe the military, economic, and cultural achievements of early Mesopotamian empires, such as Hammurabi's Code.
- Evaluate the importance of Mesopotamian achievements.

Geography and the Early Settlement of Egypt, Kush, and Canaan

- Model the physical geography, including major river systems, of ancient Egypt, Kush, and Canaan.
- Recognize locations of early human settlement in these areas.
- Describe how environmental factors supported permanent settlement and the development of civilization in these areas.

The Ancient Egyptian Pharaohs

- Identify the accomplishments of four key pharaohs from ancient Egypt: Khufu, Senusret i, Hatshepsut, and Ramses the Great.
- Analyze ancient Egyptian art and architecture to better understand the accomplishments of the pharaohs.

- Hypothesize some ways in which Egyptian pharaohs achieved their most impressive accomplishments, and the effects of those accomplishments on ancient Egypt.

Daily Life in Ancient Egypt

- Explain why the social structure of ancient Egypt is organized like a pyramid, and how religion affects that organization
- Identify the key aspects of daily life for five social classes in ancient Egypt.
- Discuss the role of written language and various art forms in ancient Egypt.

The Kingdom of Kush

- Identify the location of the civilization of Kush.
- Analyze and describe images that show the commercial, cultural, and political relationship between Kush and Egypt, and the development in Kush of an independent economy, government, and culture.
- Explain how location influenced the history of Kush during four different time periods.

Geography and the Early Settlement of India

- Locate and describe eight key physical features of the indian subcontinent, including the major river systems.
- Explain how geography affected the location of early settlement in India and supported the rise of civilization there.
- Predict and map the location of early human settlement in India.

Unlocking the Secrets of Mohenjodaro

- Form hypotheses about the function of artifacts and ruins from an ancient city in the indus Valley.
- Analyze artifacts to draw conclusions about daily life in the indus valley civilization.
- Explain why Mohenjodaro is an important archaeological site.

The First Unification of India

- Describe the expansion of the Mauryan Empire and the political and moral achievements of King Ashoka.
- Explain how King ashoka and his edicts contributed to the spread of Buddhism in India, Ceylon, and Central Asia.
- Interpret excerpts from Ashoka's edicts to create visual representations.
- Classify Ashoka's edicts into categories representing various ways ashoka promoted unity in India.

The Achievements of the Gupta Empire

- Identify the Gupta Empire on a map and locate its key cities.
- Define what characteristics classify a historical time period as a "golden age."
- Describe the important aesthetic and intellectual traditions of ancient India, including literature, medicine, metallurgy, and mathematics.
- Explain why the period during the Gupta Empire is known as a "golden age."
- Explain the evolution of Sumerian written language, from pictographs to cuneiform.
- Apply the characteristics of civilization to modern-day society.
- Describe how Mesopotamians modified their physical environment to solve geographic problems.
- Explain how the development of agricultural techniques, such as irrigation systems, led to the emergence of Sumerian city-states.

Geography and the Early Settlement of China

- Essential Geographic Understandings
    1. Location of ancient China
    2. Key physical features: huang he (Yellow river), Chang jiang (Yangtze River), Himalayas, Kunlun Mountains, Taklimakan Desert, Gobi Desert, Plateau of tibet
    3. Location of the Shang, Zhou, Qin, and Han Dynasties
    4. Impact of physical geography on the settlement of ancient China

Social Studies

The Shang Dynasty

- Describe the government, social structure, religion, writing, art, and technology of the Shang dynasty.
- Analyze artifacts to draw conclusions about the
- Shang dynasty.

Three Chinese Philosophies

- Identify political and cultural issues at the end of the Zhou Dynasty.
- Describe the lives and fundamental teachings of Confucius, Laozi, and Hanfeizi.
- Explain how various schools of thought affected political rule in China.
- Apply confucian, Daoist, and legalist principles to contemporary situations.

The First Emperor of China

- Explain how the emperor Shihuangdi unified northern China under the Qin dynasty.
- Analyze the policies and achievements of the Emperor of Qin.
- Evaluate the extent to which Qin Shihuangdi was an effective leader.

The Han Dynasty

- Explain how the Han dynasty expanded their empire.
- Describe the political contributions of the Han dynasty to the development of the imperial bureaucratic state.
- Evaluate the impact of inventions and discoveries in the fields of warfare, government, agriculture, industry, art, medicine, and science during the-Han empire.

The Silk Road

- Locate trans-Eurasian trade routes in the period of the han dynasty and the Roman Empire.
- Identify travel difficulties along the Silk Road.
- Explain how the Silk Road led to an exchange of goods, ideas, and beliefs.
- Describe the diffusion of Buddhism northward from India to China.

Geography and the Settlement of Greece

- Essential geographic understandings
    1. Location of ancient Greece
    2. Key physical features: Mediterranean Sea, Adriatic Sea, Ionian Sea, Aegean Sea, Black Sea, Asia Minor
    3. Location of Greek colonies
    4. Location of key Greek cities

The Rise of Democracy

- Examine forms of government in ancient Greece.
- Identify the advantages and disadvantages of monarchy, oligarchy, tyranny, and democracy as ways of governing in ancient Greece.
- Explain key differences between direct and representative democracy.

Life in Two City-States: Athens and Sparta

- Locate ancient Athens and Sparta and explain the connection between geography and the development of these city-states.
- Describe Athenian and Spartan government, economy, education, and treatment of women and slaves.
- Compare and contrast life in Athens and Sparta.

Fighting the Persian Wars

- Locate the Persian Empire and describe its founding, expansion, and political organization.
- Describe the roles of Athens and Sparta in the Persian Wars.
- Summarize the details of key battles of the Persian Wars.
- Evaluate the factors that contributed to a Greek victory in the Persian Wars.

The Golden Age of Athens

- Describe the role of Pericles in leading Athens into its Golden Age.
- discuss the significance of religion in the everyday life of the ancient Greeks.
- Identify ways in which Greek literature permeates modern English language and literature.

- Explain how Athenian achievements in architecture, sculpture, drama, philosophy, and sports-contributed to its Golden Age.

Alexander the Great and His Empire

- Summarize the roles of Athens and Sparta in the Peloponnesian War.
- Describe the rise of Macedonia under the reigns of Philip and Alexander.
- Rate the success of Alexander the Great in uniting his empire, including his efforts to spread Greek culture eastward.
- Evaluate the achievements of Alexander the Great.

The Legacy of Ancient Greece

- Explain how Greek language, literature, and art influence the modern world.
- Identify the Greek roots of American democra
- Describe the achievements of important Gree figures in the arts, sciences, and social sciences
- Evaluate the impact of Greek contributions on modern life.

Geography and the Early Development of Rome

- Essential Geographic Understandings
  1. Location of ancient Rome
  2. Key physical features: Mediterranean Sea, Adriatic Sea, Ionian Sea, Tyrrhenian Sea, Alps, Apennines, Rome, Po and Tiber rivers
  3. Gradual expansion of the Roman Empire
  4. Impact of location on Roman expansion

The Rise of the Roman Republic

- Describe the founding of the Roman Republ
- Compare and contrast the rights and powers of patricians and plebeians during various phases of the Roman Republic.
- Describe how the government of the Roman Republic became more democratic over time.
- Summarize the lasting significance of the ideas and organization of the Roman Republic

From Republic to Empire

- Summarize the major events in Roman expansion between 509 B.C.E. and 14 C.E.
- Explain the role of Julius Caesar and Octavian in Rome's transition from republic to empire.
- Map the geographic boundaries of Rome at the height of its empire.
- Evaluate the positive and negative effects of military expansion on Roman society and economic

Daily Life in the Roman Empire

- Identify cultural features of Rome and the Roman Empire.
- Analyze the political, economic, religious, and social structures of the Roman Empire.
- Compare and contrast the daily lives of the rich and poor in the Roman Empire.

The Origins and Spread of Christianity

- Explain the origins of Christianity in the Jewish Messianic prophecies and the life and teachings of Jesus of Nazareth as described in the New Testament.
- Identify the contribution of early Christian leaders to the spread of Christian beliefs.
- Describe the role of the Roman Empire in the persecution and spread of Christianity.

The Legacy of Rome in the Modern World

- Describe internal weaknesses of the Roman Empire and trace the fall of the empire in the west.
- Explain the founding of Constantinople and the rise of the Byzantine Empire.
- Evaluate the extent to which Roman art, archi-tecture, engineering, language, philosophy, and law influence modern society.

Cambridge
Secondary 1

CURRICULUM - CORE SUBJECTS | GRADE 7 (STAGE 8)

English as a Second Language (ESL)

Grade 7 (Stage 8)

Reading

- Understand the main points in texts on a growing range of unfamiliar general and curricular topics, including some extended texts.
- Understand specific information in texts on a growing range of unfamiliar general and curricular topics, including some extended texts.
- Understand the detail of an argument on a growing range of unfamiliar general and curricular topics, including some extended texts.
- Understand implied meaning on a growing range of general and curricular topics, including some extended texts.
- Recognise the attitude or opinion of the writer on a growing range of unfamiliar general and curricular topics, including some extended texts.
- Deduce meaning from context on a growing range of unfamiliar general and curricular topics, including some extended texts.
- Recognise typical features at word, sentence and text level in a growing range of written genres.
- Read a growing range of extended fiction and non-fiction texts on familiar and unfamiliar general and curricular topics with confidence and enjoyment.
- Use a growing range of familiar and unfamiliar paper and digital reference resources to check meaning and extend understanding.
- Recognise inconsistencies in argument in short and some extended texts on a limited range of general and curricular subjects.

Writing

- Brainstorm, plan and draft written work at text level, with limited support, on a range of general and curricular topics.
- Compose, edit and proofread written work at text level, with limited support, on a range of general and curricular topics.
- Write, with limited support, with moderate grammatical accuracy on a growing range of general and curricular topics.
- Develop coherent arguments, supported when necessary by reasons, examples and evidence, for a growing range of written genres on general and curricular topics.
- Use, with limited support, style and register appropriate to a limited range of written genres on general and curricular topics.
- Use appropriate layout for a range of written genres on a range of general and curricular topics.
- Spell a range of high-frequency vocabulary accurately on a range of general and curricular topics.
- Punctuate, with accuracy, a range of written work on a range of general and curricular topics.

Use of English

- Use a range of abstract nouns and compound nouns; use a growing range of gerunds as objects and subjects; use a growing range of complex noun phrases;
- Use a wide range of quantifiers for countable and uncountable nouns and a growing range of noun structures; use a range of past perfect simple forms in narrative and reported speech; use qualifying uncountable nouns a piece of a bar of etc. on a range of general and curricular topics.
- Use a range of compound adjectives and adjectives as participles and a growing range of comparative structures to indicate degree on a range of general and curricular topics.
- Use a wide range of determiners and pre-determiner structures on a range of general and curricular topics.
- Use a range of questions including questions involving prepositions at what time, in which direction, from whose on a range of general and curricular topics.
- Use a range of pronouns [relative, demonstrative, indefinite, quantitative].
- Use a growing range of reflexive pronoun structures; on a range of general and curricular topics.

- Use a range of simple perfect forms, including some passive forms, with a growing range of time adverbials on a range of general and curricular topics.
- Use a range of future forms, including some passive forms, with a growing range of time adverbials on a range of general and curricular topics.
- Use a wide range of active and passive simple present and past forms: use a growing range of causative forms;
- Use a range of present continuous forms and past continuous, including a growing range of passive forms, on a range of general and curricular topics.
- Use a range of reported speech forms for statements, questions and commands, including indirect and embedded questions with know, wonder on a range of general and curricular topics.
- Use a growing range of comparative degree adverb structures with regular and irregular adverbs;use a growing range of sentence adverbs including as well, though; use a range of pre-verbal, post-verbal and end-position adverbs; on a range of general and curricular topics.
- Use a wide range of modal forms for a range of functions and a limited range of past modal forms, including should/shouldn't have, to express regret and criticism on a range of general and curricular topics.
- Use a growing range of prepositions preceding nouns and adjectives; use a growing range of dependent prepositions following nouns and adjectives and a limited range of dependent prepositions following verbs; on a range of general and curricular topics.
- Use infinitive forms after a growing range of adjectives and verbs; use gerund forms after a growing range of verbs and prepositions; use a growing range of prepositional verbs and a limited range of phrasal verbs;
- Use a range of conjunctions including so that, (in order) to indicate purpose, although, while, whereas to contrast on a range of general and curricular topics
- Use if only/wish [that] clauses [past reference];
- use a range of relative clauses including prepositions from where, to whom; on a range of general and curricular topics.

Listening

- Understand the main points in unsupported extended talk on a wide range of general and curricular topics.
- Understand most specific information in unsupported extended talk on a wide range of general and curricular topics.
- Understand most of the detail of an argument in unsupported extended talk on a wide range of general and curricular topics.
- Understand most of the implied meaning in unsupported extended talk on a wide range of general and curricular topics.
- Recognise the opinion of the speaker(s) in unsupported extended talk on a wide range of general and curricular topics.
- Deduce meaning from context in unsupported extended talk on a wide range of general and curricular topics.
- Recognise typical features at word, sentence and text level of a growing range of spoken genres
- Begin to recognise inconsistencies in argument in extended talk on a growing range of general and curricular subjects.

Speaking

- Use formal and informal registers in their talk on a growing range of general and curricular topics.
- Check the main point or detail of what someone else has said.
- Explain and justify their own point of view on a range of general and curricular topics.
- Explain advantages and disadvantages of ideas, plans and arrangements on a limited range of general and curricular topics.
- Modify their talk in order to compensate for gaps in vocabulary or grammatical knowledge.
- Interact with peers to negotiate, agree and organise priorities and plans for completing classroom tasks.
- Use a growing range of appropriate subject-specific vocabulary and syntax to talk about curricular topics.

Grade 7 (Stage 8)

Phonics, spelling and vocabulary

- Spell most words correctly, including some complex polysyllabic words and unfamiliar words.
- Learn the spelling of difficult and commonly misspelt words and develop strategies for correcting spelling.
- Learn an increasingly wide range of vocabulary appropriate to their needs.
- Explain, using accurate terminology, how language is used to create effect, e.g. personification, figurative language, imagery, patterns and structure in the use of language, use of dialect or informal language.
- Create considered and appropriate effects by drawing independently on the range and variety of their own vocabulary, and extending their vocabulary by noting down powerful words in books read.

GRAMMAR AND PUNCTUATION

Reading

- Comment on the use of a wide range of punctuation to convey shades of meaning.

Writing

- Use accurate punctuation including commas in various situations, including parenthetical commas, colons, semi-colons, dashes and brackets.
- Begin to use formal and informal language for specific purposes.
- Demonstrate controlled use of a variety of simple and complex sentences to achieve purpose and contribute to overall effect.
- Confidently use a range of sentence features to clarify or emphasise meaning, e.g. fronted adverbials, complex nouns or prepositional phrases.

Reading

Fiction and poetry

- Recognise implied meaning, e.g. expression of opinion, inference of character, meaning contained in an image, ironic effect.
- Identify relevant points, synthesizing and summarizing ideas from different parts of the text.
- Explore the range, variety and overall effect of literary, rhetorical and grammatical features used by poets and writers of literary and non-literary texts.
- Include study of informal or formal style as well as the choice of words to create character.
- Comment on how the writer's use of language contributes to the overall effect on the reader, using appropriate terminology.
- Broaden their experience of reading a wide range of texts and express their preferences and opinions.
- Trace the development of a writers or poet's ideas, viewpoint and themes through a text and relate these to other texts read.
- Compare poems from different cultures and times, commenting on different poets' use of language and imagery to develop similar themes and elicit responses from the reader.
- Explore how different audiences choose and respond to texts.
- Explore why certain texts are important within a culture and show awareness that the context in which the text is written and read affects its meaning.

Non-fiction

- Use a range of reading strategies to find relevant information and main points in texts, distinguishing between fact and opinion where appropriate.
- Make relevant notes when researching different sources, comparing and contrasting information.
- Explain how specific choices and combinations of form, layout and presentation create particular effects.
- Demonstrate understanding of the effects created by features of diaries, magazines and newspaper reports.
- Demonstrate understanding of the main features, including the structure, of each genre and text type studied.

English

Writing

Fiction

- Identify the most appropriate approach to planning their writing in order to explore, connect and shape ideas.
- Apply skills in editing and proofreading to a range of different texts and contexts.
- Develop ideas to suit a specific audience, purpose and task.
- Draw on their knowledge of a variety of sentence lengths and a wide variety of sentence structures, including complex sentences, and apply it to their own writing to make their ideas and intentions clear and create a range of effects.
- Use a range of cohesive devices with audience and purpose in mind.
- Experiment with different ways of presenting texts, bearing in mind the audience and purpose.
- Draw on knowledge of how and why writers use varying degrees of formality and informality to make appropriate choices of style and register in their own writing.
- Understand the significance and importance of conventional standard English and the ways in which writers use non-standard forms in specific contexts for particular effects.
- Create and control effects by drawing on the range and variety of own vocabulary.

Non-fiction

- Develop a consistent viewpoint in non-fiction writing by selecting from techniques and devices used by known writers, and drawing on a range of evidence, opinions, information and purposes.
- Write in a range of forms for a variety of purposes, including:
  - Autobiography (to entertain, inform, review or comment)
  - Diary entries (to inform, explain, review, comment or explore)
  - Leaflets or newspaper reports (to inform)
  - Letters (to persuade, entertain, narrate or comment)
  - Magazine articles (to describe, review or comment)
  - Reports (to review, inform, advise, or argue)
  - reviews (to inform, entertain or advise)
  - Summaries.

Speaking and Listening

- Give short presentations and answer questions maintaining effective organization of talk.
- Adapt speech, non-verbal gesture and movement to meet an increasing range of demands.
- Explore complex ideas and feelings, both succinctly and at length.
- Take part in a simple debate following formal rules (proposer, seconder, etc.).
- Engage with more demanding material through perceptive responses to other students' talk, showing awareness of the speaker's aims and extended meanings.
- Conduct a discussion drawing together ideas and promoting effective sharing of ideas.
- Walk in group to formulate ideas and plans of action.
- Develop skills in solo, paired and group assignments, including role-play and drama.
- Help to plan and participate in a brief dramatic scene, demonstrating empathy and understanding of a range of characters through flexible choice of speech, gesture and movement.
- Discuss the features of media productions such as new broadcasts, interviews and discussions, analysing meaning and impact of variations in spoken language.

Speaking

- Use formal and informal registers in their talk on a growing range of general and curricular topics.
- Check the main point or detail of what someone else has said.
- Explain and justify their own point of view on a range of general and curricular topics.
- Explain advantages and disadvantages of ideas, plans and arrangements on a limited range of general and curricular topics.
- Modify their talk in order to compensate for gaps in vocabulary or grammatical knowledge.
- Interact with peers to negotiate, agree and organise priorities and plans for completing classroom tasks.
- Use a growing range of appropriate subject-specific vocabulary and syntax to talk about curricular topics.

Grade 7 (Stage 8)

Scientific enquiry

Ideas and evidence

- Discuss the importance of developing empirical questions which can be investigated, collecting evidence, developing explanations and using creative thinking.
- Test predictions with reference to evidence gained.

Plan investigative work

- Select ideas and turn them into a form that can be tested.
- Plan investigations to test ideas.
- Identify important variables; choose which variables to change, control and measure.
- Make predictions using scientific knowledge and understanding.

Obtain and present evidence

- Take appropriately accurate measurements.
- Use a range of equipment correctly.
- Discuss and control risks to themselves and others.
- Present results as appropriate in tables and graphs.

Consider evidence and approach

- Make simple calculations.
- Identify trends and patterns in results (correlations).
- Compare results with predictions.
- Identify anomalous results and suggest improvements to investigations.
- Interpret data from secondary sources.
- Discuss explanations for results using scientific knowledge and understanding.
- Communicate these clearly to others.
- Present conclusions to others in appropriate ways.

BIOLOGY

Plants

- Explore how plants need carbon dioxide, water and light for photosynthesis in order to make biomass and oxygen.
- Describe the absorption and transport of water and mineral salts in flowering plants.

Humans as organisms

- Identify the constituents of a balanced diet and the functions of various nutrients.
- Understand the effects of nutritional deficiencies.
- Recognise the organs of the alimentary canal and know their functions.
- Understand the function of enzymes as biological catalysts in breaking down food to simple chemicals.
- Recognise and model the basic components of the circulatory system and know their functions.
- Understand the relationship between diet and fitness.
- Discuss how conception, growth, development, behaviour and health can be affected by diet, drugs and disease.
- Recognise the basic components of the respiratory system and know their functions.
- Define and describe aerobic respiration, and use the word equation.
- Explain gaseous exchange.
- Describe the effects of smoking.
- Discuss the physical and emotional changes that take place during adolescence.
- Describe the human reproductive system, including the menstrual cycle, fertilisation and foetal development.

CHEMISTRY

States of matter

- Show how the particle theory of matter can be used to explain the properties of solids, liquids and gases, including changes of state, gas pressure and diffusion.

Material properties

- Describe and explain the differences between metals and non-metals.
- Give chemical symbols for the first twenty elements of the Periodic Table.
- Understand that elements are made of atoms.

Material changes

- Explain the idea of compounds.
- Name some common compounds including oxides, hydroxides, chlorides, sulfates and carbonates.
- Distinguish between elements, compounds and mixtures.
- Use a word equation to describe a common reaction.
- Describe chemical reactions which are not useful, e.g. rusting.

PHYSICS

Forces and motion

- Calculate average speeds, including through the use of timing gates.
- Interpret simple distance/time graphs.

Sound

- Explain the properties of sound in terms of movement of air particles.
- Recognise the link between loudness and amplitude, pitch and frequency, using an oscilloscope.

Light

- Use light travelling in a straight line to explain the formation of shadows and other phenomena. Describe how non-luminous objects are seen.
- Describe reflection at a plane surface and use the law of reflection.
- Investigate refraction at the boundary between air and glass or air and water.
- Explain the dispersion of white light.
- Explain colour addition and subtraction, and the absorption and reflection of coloured light.

Magnetism

- Describe the properties of magnets.
- Recognise and reproduce the magnetic field pattern of a bar magnet.
- Construct and use an electromagnet.

Grade 7 (Stage 8)

Number

Integers, powers and roots

- Add, subtract, multiply and divide integers.
- Identify and use multiples, factors, common factors, highest common factors, lowest common multiples and primes; write a number in terms of its prime factors, e.g. 500 = 22 × 53.
- Calculate squares, positive and negative square roots, cubes and cube roots; use the square root notation and index notation for positive integer powers.

Place value, ordering and rounding

- Read and write positive integer powers of 10; multiply and divide integers and decimals by 0.1, 0.01.
- Order decimals, including measurements, making use of the =, ≠, > and < signs.
- Round whole numbers to a positive integer power of 10, e.g. 10, 100, 1000 or decimals to the nearest whole number or one or two decimal places.

Fractions, decimals, percentages, ratio and proportion

- Find equivalent fractions, decimals and percentages by converting between them.
- Order fractions by writing with common denominators or dividing and converting to decimals.
- Convert a fraction to a decimal using division; know that a recurring decimal is a fraction
- Add and subtract fractions and mixed numbers; calculate fractions of quantities (fraction answers); multiply and divide an integer by a fraction.
- Simplify ratios, including those expressed in different units; divide a quantity into more than two parts in a given ratio.
- Calculate and solve problems involving percentages of quantities and percentage increases or decreases; express one given number as a fraction or percentage of another.
- Use equivalent fractions, decimals and percentages to compare different quantities.
- Use the unitary method to solve simple problems involving ratio and direct proportion.
- Use known facts to derive new facts, e.g. given 20 × 38 = 760, work out 21 × 38.
- Recall squares to 20 × 20, cubes to 5 × 5 × 5, and corresponding roots.
- Recall simple equivalent fractions, decimals and percentages.
- Use known facts and place value to multiply and divide simple fractions.
- Use known facts and place value to multiply and divide simple decimals, e.g. 0.07 × 9, 2.4 ÷ 3.
- Use known facts and place value to calculate simple fractions and percentages of quantities.
- Recall relationships between units of measurement.
- Solve simple word problems including direct proportion problems.
- Use the laws of arithmetic and inverse operations to simplify calculations with integers and fractions.
- Use the order of operations, including brackets, with more complex calculations.
- Consolidate adding and subtracting integers and decimals, including numbers with differing numbers of decimal places.
- Divide integers and decimals by a single-digit number, continuing the division to a specified number of decimal places, e.g. 68 ÷ 7.
- Multiply and divide integers and decimals by decimals such as 0.6 or 0.06, understanding where to place the decimal point by considering equivalent calculations, e.g. 4.37 × 0.3 = (4.37 × 3) ÷ 10, 92.4 ÷ 0.06 = (92.4 × 100) ÷ 6.

Algebra

Expressions, equations and formulae

- Know that letters play different roles in equations, formulae and functions; know the meanings of formula and function.
- Know that algebraic operations, including brackets, follow the same order as arithmetic operations; use index notation for small positive integer powers.
- Construct linear expressions.

- Simplify or transform linear expressions with integer coefficients; collect like terms; multiply a single term over a bracket.
- Derive and use simple formulae, e.g. to convert degrees Celsius (°C) to degrees Fahrenheit (°F).
- Substitute positive and negative integers into formulae, linear expressions and expressions involving small powers including examples that lead to an equation to solve.
- Construct and solve linear equations with integer coefficients (unknown on either or both sides, without or with brackets).

Sequences, functions and graphs

- Generate terms of a linear sequence using term-to-term and position-to-term rules; find term-to-term and position-to-term rules of sequences, including spatial patterns.
- Use a linear expression to describe the nth term of a simple arithmetic sequence, justifying its form by referring to the activity or practical context from which it was generated.
- Express simple functions algebraically and represent them in mappings.
- Construct tables of values and use all four quadrants to plot the graphs of linear functions, where y is given explicitly in terms of x; recognise that equations of the form y = mx + c correspond to straight-line graphs.

Geometry

- Know that if two 2D shapes are congruent, corresponding sides and angles are equal.
- Classify quadrilaterals according to their properties, including diagonal properties.
- Know that the longest side of a right-angled triangle is called the hypotenuse.
- Identify alternate angles and corresponding angles.
- Understand a proof that:
  - the angle sum of a triangle is 180° and that of a quadrilateral is 360°
  - the exterior angle of a triangle is equal to the sum of the two interior opposite angles
- Solve geometrical problems using properties of angles, of parallel and intersecting lines, and of triangles and special quadrilaterals, explaining reasoning with diagrams and text.
- Draw simple nets of solids, e.g. cuboid, regular tetrahedron, square-based pyramid, triangular prism.
- Identify all the symmetries of 2D shapes.
- Use a straight edge and compasses to construct:
  - the midpoint and perpendicular bisector of a line segment
  - the bisector of an angle
- Use a ruler and compasses to construct:
  - circles and arcs
  - a triangle, given three sides (SSS)
  - a triangle, given a right angle, hypotenuse and one side (RHS)

Measure

- Choose suitable units of measurement to estimate, measure, calculate and solve problems in a range of contexts, including units of mass, length, area, volume or capacity.
- Know that distances in the USA, the UK and some other countries are measured in miles, and that one kilometre is about 5/8 of a mile.
- Draw and interpret graphs in real life contexts involving more than one component, e.g. travel graphs with more than one person.
- Know the definition of a circle and the names of its parts; know and use formulae for the circumference and area of a circle.
- Derive and use formulae for the area of a triangle, parallelogram and trapezium; calculate areas of compound 2D shapes, and lengths, surface areas and volumes of cuboids.
- Use simple nets of solids to work out their surface areas.

Handling Data

- Identify and collect data to answer a question; select the method of collection, sample size and degree of accuracy needed for measurements.
- Know the difference between discrete and continuous data.

Mathematics

- Construct and use:
  - frequency tables with given equal class intervals to gather continuous data
  - two-way tables to record discrete data
- Draw, and interpret:
  - Frequency diagrams for discrete and continuous data
  - Pie charts
  - simple line graphs for time series
  - stem-and-leaf diagrams
- Calculate statistics for sets of discrete and continuous data; recognise when to use the range, mean, median and mode and, for grouped data, the modal class.
- Interpreting and discussing results
- Interpret tables, graphs and diagrams for discrete and continuous data, and draw conclusions, relating statistics and findings to the original question.
- Compare two distributions, using the range and one or more of the mode, median and mean.
- Compare proportions in two pie charts that represent different totals.

Probability

- Know that if the probability of an event occurring is p, then the probability of it not occurring is 1 – p.
- Find probabilities based on equally likely outcomes in practical contexts.
- Find and list systematically all possible mutually exclusive outcomes for single events and for two successive events.
- Compare estimated experimental probabilities with theoretical probabilities, recognising that:
  - when experiments are repeated different outcomes may result
  - increasing the number of times an experiment is repeated generally leads to better estimates of probability

Problem Solving

- Using techniques and skills in solving mathematical problems
- Use the order of operations, including brackets, with more complex calculations.
- Manipulate numbers, algebraic expressions and equations, and apply routine algorithms.
- Understand everyday measurement systems, using them to estimate, measure and calculate.
- Record and compare reasoning, solutions and conclusions.
- Calculate accurately, choosing operations and mental or written methods appropriate to the numbers and context.
- Recognise and use spatial relationships in two and three dimensions.
- Draw accurate mathematical diagrams, graphs and constructions.
- Estimate, approximate and check working.
- Solve word problems involving calculations with whole numbers, fractions, percentages, decimals, money or measures, including multi-step problems.
- Using understanding and strategies in solving problems
- Identify the mathematical features of a context or problem; try out and compare mathematical representations using accurate notation.
- Compare proportions in two pie charts that represent different totals.
- Use logical argument to interpret the mathematics in a context or to establish the truth of a statement.
- Give accurate solutions appropriate to the context or problem.
- Record and compare reasoning, solutions and conclusions.
- Refine approaches and findings on the basis of discussions with others.

Grade 7 (Stage 8)

Geography and the Early Development of Rome

- Essential Geographic Understandings
    1. Location of ancient Rome
    2. Key physical features: Mediterranean Sea, Adriatic Sea, Ionian Sea, Tyrrhenian Sea, Alps, Apennines, Rome, Po and Tiber rivers
    3. Gradual expansion of the Roman Empire
    4. Impact of location on Roman expansion

The Rise of the Roman Republic

- Describe the founding of the Roman Republic.
- Compare and contrast the rights and powers of patricians and plebeians during various phases of the Roman Republic.
- Describe how the government of the Roman Republic became more democratic over time.
- Summarize the lasting significance of the ideas and organization of the Roman Republic.

From Republic to Empire

- Summarize the major events in Roman expansion between 509 B.C.E. and 14 C.E.
- Explain the role of Julius Caesar and Octavian in Rome's transition from republic to empire.
- Map the geographic boundaries of Rome at the height of its empire.
- Evaluate the positive and negative effects of military expansion on Roman society and eco-nomic growth.

Daily Life in the Roman Empire

- Identify cultural features of Rome and the Roman Empire.
- Analyze the political, economic, religious, and social structures of the Roman Empire.
- Compare and contrast the daily lives of the rich and poor in the Roman Empire.

The Legacy of Rome in the Modern World

- Describe internal weaknesses of the Roman Empire and trace the fall of the empire in the west.
- Explain the founding of Constantinople and the rise of the Byzantine Empire.
- Evaluate the extent to which Roman art, architec-ture, engineering, language, philosophy, and law influence modern society.

World Religions

- Explain the origins of six major world religions: Hinduism, Judaism, Confucianism, Buddhism, Christianity, and Islam.
- Describe the key beliefs of these six world religions.
- Explain the spread and influence of each of the six world religions.

Geography: Europe During Medieval Times

- Essential Geographic Understandings
    1. Location of Europe, including an understanding of western and eastern Europe.
    2. Key physical features: the Atlantic Ocean, the Mediterranean Sea, the Black Sea, the Alps, the Pyrenees, the Carpathians
    3. Key political features: Holy Roman Empire, Byzantine Empire, Constantinople
    4. Importance of geographical features to the success of Europe as a whole and to the devel-opment of Constantinople.

The Legacy of the Roman Empire

- Describe the internal weaknesses of the Roman Empire and identify reasons for the fall of the empire in the west.
- Summarize the events that led to the establishment, by Constantine, of a new capital in the east and to the rise of the Byzantine Empire.
- Identify some of the major lasting contributions of Rome and explain their influence on modern society. evaluate the relative extent to which the contributions of the Roman Empire influence society today.

Social Studies

The Development of Feudalism in Western Europe

- Describe the accomplishments of Charlemagne and explain how his cooperation with the pope fostered unity in western Europe.
- Identify the factors that created a need for a new type of political system in Europe, leading to the development of feudalism.
- Differentiate between the roles and responsi-bil-ities of the four main social classes in European feudal society.
- Evaluate the extent to which feudalism brought political order, economic stability, prosperity, and opportunity to Europe in the Middle Ages.

The Roman Catholic Church in Medieval Europe

- Describe the structure and role of the Roman Catholic Church in medieval Europe.
- Explain the conflict between Pope Gregory VII and Emperor Henry IV.
- Analyze the Roman Catholic Church's role as a political, intellectual, and aesthetic institution.
- Evaluate the extent to which the Roman Catholic Church influenced life in medieval Europe.

Life in Medieval Towns

- Explain how geographic factors affected the development of towns in medieval Europe.
- Discuss the relationship between trade and the growth of medieval towns.
- Examine several aspects of daily life in medieval towns.
- Describe the typical day of a townsperson in medieval Europe.

The Decline of Feudalism

- Describe significant medieval English legal and constitutional developments, such as Magna Carta and the establishment of Parliament, and their impact on feudalism.
- Analyze how the bubonic plague spread from Central Asia to Europe, and evaluate the im-pact it had on the population of Europe and on feudalism.
- Summarize the impact of the Hundred Years' War on feudalism in Europe.

The Byzantine Empire

- Demonstrate the importance of Constantinople as a trading hub and explain how it emerged as the capital of the Byzantine Empire.
- Describe the reign of Justinian I, including his contributions to public works and his creation of a code of law.
- Discuss the relationship between religion and government in the Byzantine Empire.
- Trace the development of the Eastern Orthodox Church and its relations with the west.

Geography: Imperial China

- Essential Geographic Understandings
    1. Location of China.
    2. Key physical features: Huang He (Yel-low River), Chang Jiang (Yangtze River), Plateau of Tibet, Himalayas, Taklimakan Desert, Gobi Desert, Tian Shan
    3. Importance of the Huang He (Yellow River) and Chang Jiang (Yangtze River) to the development of Chinese civilization
    4. Impact of location on the diffusion of ideas to and from China

The Political Development of Imperial China

- Describe the reunification of China under the Sui and Tang dynasties.
- Explain how the imperial state developed and describe the role of the scholar-official class.
- Analyze the influence of Confucianism on how government officials were selected.
- Compare and contrast approaches to Confucian thought during the Song and Mongol periods.
- Evaluate the different methods of selecting offi-cials in imperial China.

China Develops a New Economy

- Describe the agricultural changes that occurred under the Tang and Song Dynasties.
- Explain the causes and effects of the growth of trade and commerce and the development of a money economy.
- Explain the causes and effects of urbanization.

- Evaluate the impact of the changes in agriculture, commerce, and urbanization during this period.

Chinese Discoveries and Inventions

- Describe Chinese technological developments from about 200 to 1400 C.E., especially during the Tang and Song dynasties.
- Analyze the ways in which such Chinese inventions such as gunpowder, the compass, and printing, affected China and the rest of the world.

Chinese Discoveries and Inventions

- Explain the importance of overland trade and identify products that traveled along trade routes during the Tang and Yuan dynasties.
- Describe the importance of maritime expeditions during the Ming dynasty.
- Evaluate the benefits and drawbacks of foreign contact during each dynasty's rule.

Geography: Japan During Medieval Times

- Essential Geographic Understandings
  1. Location of Japan
  2. Key physical features: Sea of Japan (East Sea), East China Sea, Pacific Ocean, Mountain Ranges, Kanto Plain
  3. Relative location of Japan and the countries of East Asia, particularly China and Korea
  4. Influence of physical features, such as mountains and bodies of water, on historical and cultural development

The Influence of Neighbouring Cultures on Japan

- Describe how aspects of culture were transmitted from India, China, and Korea to Japan.
- Explain the significance of Japan's proximity to China and Korea and the influences of those countries on Japan.
- Discuss the influence of Prince Shotoku and the characteristics of Japanese society during his rule.
- Summarize a distinctive form of Japanese Buddhism and explain how this form developed.

Heian-kyo: The Heart of Japan's Golden Age

- Describe the golden age of literature, art, and drama in medieval Japan.
- Explain the significance of the Tale of Genji, and its influence on modern Japanese culture.
- Identify the causes that ended the Heian period and brought about the rise of the military class.

The Rise of the Warrior Class in Japan

- Analyze the rise of a military society in late 12th-century Japan and the role of the samurai.
- Explain the roles of shogun, daimyo, and samurai in the lord-vassal system of medieval Japan and the values, customs, and traditions within this system.
- Compare and contrast elements of Amida and Zen Buddhism.
- Describe the lasting influence of the samurai through modern times.

Geography Challenge: Europe's Renaissance and Reformation

- Analyze the rise of a military society in late 12th-century Japan and the role of the samurai.
- Explain the roles of shogun, daimyo, and samurai in the lord-vassal system of medieval Japan and the values, customs, and traditions within this system.
- Compare and contrast elements of Amida and Zen Buddhism.
- Describe the lasting influence of the samurai through modern times.

The Renaissance Begins

- Identify elements of classical, medieval, and Renaissance art.
- Connect the importance of the growth of towns, the rise of a money economy, and the development of independent city-states to the birth and spread of Renaissance ideas.
- Explore how humanism encouraged a new way of thinking that affected many aspects of European life during the Renaissance.

Social Studies

The Age of Exploration

- Identify the motivations and key advances in knowledge and technology that led to the Age of Exploration.
- Map the important European expeditions during the Age of Exploration.
- Identify and explain the effects of the Age of Exploration including the exchange of goods and ideas on people in various parts of the world.
- Describe the economic effects of exploration, including the origins of modern capitalism, the growth of the cottage industry, mercantilism, and new patterns of trade.

The Scientific Revolution

- Explain how the Renaissance, Greek rationalism, and global exploration provided a foundation for the Scientific Revolution.
- Analyze images to determine the impact of scientific theories proposed during this period by scientists such as Copernicus, Kepler, Galileo, and Newton.
- Identify the key elements of the scientific method, as advanced by Bacon and Descartes.
- Evaluate the contributions of key individuals and inventions of the Scientific Revolution.

The Scientific Revolution

- Describe the roots of the Enlightenment.
- Explain the key ideas of five Enlightenment thinkers Hobbes, Locke, Montesquieu, Voltaire, and Beccaria.
- Explain the influence of Enlightenment thought on later democratic thinking and institutions.
- Analyze excerpts from important historical documents to identify the Enlightenment thinkers whose ideas are expressed in each.

Cambridge
Secondary 1

CURRICULUM - CORE SUBJECTS | GRADE 8 (STAGE 9)

English as a Second Language (ESL)

Grade 8 (Stage 9)

Reading

- Understand the main points in extended texts on a range of unfamiliar general and curricular topics.
- Understand specific information in extended texts on a range of unfamiliar general and curricular topics.
- Understand the detail of an argument in extended texts on a range of unfamiliar general and curricular topics.
- Understand implied meaning in extended texts on a range of unfamiliar general and curricular topics.
- Recognise the attitude or opinion of the writer in extended texts on a range of unfamiliar general and curricular topics.
- Deduce meaning from context on a range of unfamiliar general and curricular topics, including some extended texts.
- Begin to recognise the devices a writer uses to express intentions in extended texts on a growing range of unfamiliar general and curricular topics.
- Read a range of extended fiction and non-fiction texts on familiar and unfamiliar general and curricular topics, with confidence and enjoyment.
- Use a range of familiar and unfamiliar paper and digital reference resources to check meaning and extend understanding.
- Recognise inconsistencies in argument in extended texts on a growing range of general and curricular subjects.

Writing

- Brainstorm, plan and draft written work at text level, with minimal teacher support, on a range of general and curricular topics.
- Compose, edit and proofread written work at text level, with minimal teacher support, on a range of general and curricular topics.
- Write, with minimal support, with moderate grammatical accuracy on a range of general and curricular topics.
- Develop coherent arguments, supported when necessary by reasons, examples and evidence, for a range of written genres on general and curricular topics.
- Use, with limited support, style and register appropriate to a growing range of written genres on general and curricular topics.
- Use appropriate layout for a range of written genres on a wide range of general and curricular topics.
- Spell a wide range of high-frequency vocabulary accurately on a wide range of general and curricular topics.
- Punctuate, with accuracy, a range of written work on a wide range of general and curricular topics.

Use of English

- Use a range of abstract nouns, compound nouns, complex noun phrases and gerunds as subjects and objects on a wide range of general and curricular topics.
- Use a wide range of quantifiers for countable and uncountable nouns and a range of structures qualifying uncountable nouns on a wide range of general and curricular topics.
- Use a range of compound adjectives, adjectives as participles and comparative structures indicating degree and a growing range of intensifying adjectives on a wide range of general and curricular topics.
- Use a wide range of determiners and pre-determiner structures on a wide range of general and curricular topics.
- Use a wide range of types of question on a wide range of general and curricular topics.
- Use a wide range of pronouns [relative, demonstrative, indefinite, quantitative];
- Use a range of reflexive pronoun structures; on a wide range of general and curricular topics.
- Use a range of simple perfect active and passive forms with a range of time adverbials … so far, lately, all my life; use a growing range of perfect continuous forms; on a wide range of general and curricular topics.

Use of English (Cont.)

- Use a range of future active and passive forms and a growing range of future continuous forms on a wide range of general and curricular topics;
- Use a range of active and passive simple present and past forms, causative forms and past perfect simple forms;
- Use a growing range of past perfect continuous forms in narrative and reported speech; on a wide range of general and curricular topics.
- Use a range of present continuous forms and past continuous [active and passive] on a range of general and curricular topics.
- Use a range of reported statements and question forms on a wide range of general and curricular topics.
- Use a range of comparative degree adverb structures with regular and irregular adverbs;
- Use a range of sentence adverbs, including especially, particularly;
- Use a range of pre-verbal, post-verbal and end-position adverbs; on a wide range of general and curricular topics.
- Use a growing range of past modal forms, including must have, can't have, might have, to express speculation and deduction about the past on a wide range of general and curricular topics.
- Use a range of prepositional phrases preceding nouns and adjectives;
- Use a range of dependent prepositions following nouns and adjectives and a growing range of prepositions following verbs; on a wide range of general and curricular topics.
- Use infinitive forms after a range of verbs and adjectives; use gerund forms after a range of verbs and prepositions; use a growing range of prepositional and phrasal verbs; on a wide range of general and curricular topics.
- Use a range of conjunctions on a wide range of general and curricular topics
- Use if/if only in third conditional structures; use a range of relative clauses, including which [whole previous clause reference]; on a wide range of general and curricular topics.

Listening

- Understand the main points in unsupported extended talk on a wide range of general and curricular topics, including talk on a limited range of unfamiliar topics.
- Understand specific information in unsupported extended talk on a wide range of general and curricular topics, including talk on a limited range of unfamiliar topics.
- Understand the detail of an argument in unsupported extended talk on a wide range of general and curricular topics, including talk on a limited range of unfamiliar topics.
- Understand implied meaning in unsupported extended talk on a wide range of general and curricular topics, including talk on a limited range of unfamiliar topics.
- Recognise the attitude or opinion of the speaker(s) in unsupported extended talk on a wide range of general and curricular topics, including talk on a limited range of unfamiliar topics.
- Deduce meaning from context in unsupported extended talk on a wide range of general and curricular topics, including talk on a limited range of unfamiliar topics.
- Recognise typical features at word, sentence and text level of a range of spoken genres.
- Recognise inconsistencies in argument in extended talk on a range of general and curricular subjects.

Grade 8 (Stage 9)

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

Grammar and punctuation

Reading

- 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.

Writing

- Use a range of features to shape and craft sentences that have individual merit and contribute to overall development of the text, e.g. embedded phrases and clauses that support succinct explanation; secure control of complex verb forms; use antithesis, repetition or balance in sentence structure.
- Demonstrate control of wide variety of sentence types used for intended purpose and desired effect.

Reading

Fiction and poetry

- Analyse and respond to the range of ideas and differing viewpoints, purposes and themes in a variety of related texts.
- 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.
- 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.

Non-fiction

- Select from a range of strategies and use the most appropriate ways to locate, retrieve and compare information and ideas from a variety of texts.
- Make notes using a range of different note-making formats and approaches (including mind-mapping and tabulating) when researching a variety of media.
- Analyse how meaning, including attitude, can be conveyed in different ways according to structural and organisational choices.
- Demonstrate understanding of the features of a wider range of Non-fiction and media texts, e.g. travel writing, advertising material.
- Recognise ways in which writers use different registers and other methods to communicate with their audience.

- Understand the differences between formal and informal style.
- Use a repertoire of reading strategies to analyse and explore different layers of meaning within texts, including bias.
- Analyse how meaning is conveyed differently according to the form, layout and presentation selected by the writer for specific purposes.

Writing

Fiction and Poetry

- 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 in their fiction writing.
- 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 deploy 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 adaptations when appropriate in their own writing
- Deploy a range of punctuation and grammatical choices to enhance and emphasise meaning, aid cohesion and create a wide range of effects.

Non-fiction

- Establish and sustain a clear and logical viewpoint through the analysis and selection of convincing evidence, opinions and appropriate information.
- Write to analyse, review and comment.
- Write persuasively, e.g. in letters or in the script of a commercial.
- Write arguments with a sense of linked progression.
- Use if/if only in third conditional structures; use a range of relative clauses, including which [whole previous clause reference]; on a wide range of general and curricular topics.

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 others' discourse, including broadcast media.

Grade 8 (Stage 9)

Scientific enquiry

Obtain and present evidence

- Make sufficient observations and measurements to reduce error and make results more reliable.

Ideas and evidence

- Discuss and explain the importance of questions, evidence and explanations, using historical and contemporary examples.
- Use a range of materials and equipment and control risks.
- Test explanations by using them to make predictions and then evaluate these against evidence.

Make observations and measurements.

- Discuss the way that scientists work today and how they worked in the past, including reference to experimentation, evidence and creative thought.

Consider evidence and approach

Plan investigative work

- Select ideas and produce plans for testing based on previous
- Interpret results using scientific knowledge and understanding.
- Knowledge, understanding and research.

Draw conclusions

- Suggest and use preliminary work to decide how to carry out an investigation.
- Evaluate the methods used and refine for further investigations.
- Decide whether to use evidence from first hand experience or secondary sources.
- Compare results and methods used by others.
- Decide which measurements and observations are necessary and what equipment to use.
- Present conclusions and evaluation of working methods in different ways.
- Decide which apparatus to use and assess any hazards in the laboratory, field or workplace.
- Explain results using scientific knowledge and understanding.
- Communicate this clearly to others.
- Use appropriate sampling techniques where required.

BIOLOGY

Plants

- Define and describe photosynthesis, and use the word equation.
- Understand the importance of water and mineral salts to plant growth.
- Understand sexual reproduction in flowering plants, including pollination, fertilisation, seed formation and dispersal.

Living things in their environment

- Explain the ways in which living things are adapted to their habitats.
- Research the work of scientists studying the natural world.
- Explain and model food chains, food webs and energy flow.
- Explain the role of decomposers.
- Describe factors affecting the size of populations.
- Describe and investigate some effects of human influences on the environment.

Variation and classification

- Use and construct keys to identify plants and animals.
- Understand that organisms inherit characteristics from their parents through genetic material that is carried in cell nuclei.
- Describe how selective breeding can lead to new varieties.
- Discuss the work of Darwin in developing the scientific theory of natural selection.

Science

CHEMISTRY

Material properties

- Describe the structure of an atom and learn about the methods and discoveries of Rutherford.
- Compare the structures of the first twenty elements of the Periodic Table.
- Describe trends in groups and periods.
- Talk about the contribution of scientists.

Material changes

- 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.

Forces and motion

- Explain that pressure is caused by the action of a force on an area.
- Determine densities of solids, liquids and gases.
- Explain pressures in gases and liquids (qualitative only).
- Know that forces can cause objects to turn on a pivot and understand the principle of moments.

Electricity

- Describe electrostatics and the concept of charge, including digital sensors.
- Interpret and draw simple parallel circuits.
- Model and explain how common types of components, including cells (batteries), affect current.
- Explain how current divides in parallel circuits.
- Measure current using ammeters and voltage using voltmeters, including digital meters.

Energy

- Use knowledge of energy sources including fossil fuels and renewable energy resources to consider the world's energy needs, including research from secondary sources.
- Identify and explain the thermal (heat) energy transfer processes of conduction, convection and radiation.
- Explain cooling by evaporation.

Grade 8 (Stage 9)

Number

Integers, powers and roots

- Add, subtract, multiply and divide directed numbers.
- Estimate square roots and cube roots.
- Use positive, negative and zero indices and the index laws for multiplication and division of positive integer powers.

Place value, ordering and rounding

- Solve problems involving percentage changes, choosing the correct numbers to take as 100% or as a whole, including simple problems involving personal or household finance, e.g. simple interest, discount, profit, loss and tax.
- Recognise when fractions or percentages are needed to compare different quantities.
- Compare two ratios; interpret and use ratio in a range of contexts.
- Recognise when two quantities are directly proportional; solve problems involving proportionality, e.g. converting between different currencies.
- Recognise the equivalence of 0.1, 10 and 10–1; multiply and divide whole numbers and decimals by 10 to the power of any positive or negative integer.
- Round numbers to a given number of decimal places or significant figures; use to give solutions to problems with an appropriate degree of accuracy.
- Use the order of operations, including brackets and powers.

Fractions, decimals, percentages, ratio and proportion

- Consolidate writing a fraction in its simplest form by cancelling common factors.
- Add, subtract, multiply and divide fractions, interpreting division as a multiplicative inverse, and cancelling common factors before multiplying or dividing.

Calculation

Mental strategies

- Extend mental methods of calculation, working with decimals, fractions, percentages and factors, using jottings where appropriate.
- Solve word problems mentally.
- Consolidate use of the rules of arithmetic and inverse operations to simplify calculations.

Multiplication and division

- Multiply by decimals, understanding where to position the decimal point by considering equivalent calculations; divide by decimals by transforming to division by an integer.
- Recognise the effects of multiplying and dividing by numbers between 0 and 1.

Algebra

Expressions, equations and formulae

- Know the origins of the word algebra and its links to the work of the Arab mathematician Al'Khwarizmi.
- Use index notation for positive integer powers; apply the index laws for multiplication and division to simple algebraic expressions.

Construct algebraic expressions

- Simplify or transform algebraic expressions by taking out single-term common factors.
- Add and subtract simple algebraic fractions.
- Derive formulae and, in simple cases, change the subject; use formulae from mathematics and other subjects.
- Substitute positive and negative numbers into expressions and formulae.
- Construct and solve linear equations with integer coefficients (with and without brackets, negative signs anywhere in the equation, positive or negative solution); solve a number problem by constructing and solving a linear equation.
- Solve a simple pair of simultaneous linear equations by eliminating one variable.

- Expand the product of two linear expressions of the form x ± n and simplify the corresponding quadratic expression.
- Understand and use inequality signs (<, >, Y, []); construct and solve linear inequalities in one variable; represent the solution set on a number line.

Sequences, functions and graphs

- Generate terms of a sequence using term-to-term and position-to- term rules.
- Derive an expression to describe the nth term of an arithmetic sequence.
- Find the inverse of a linear function.
- Construct tables of values and plot the graphs of linear functions, where y is given implicitly in terms of x, rearranging the equation into the form y = mx + c; know the significance of m and find the gradient of a straight line graph.
- Find the approximate solutions of a simple pair of simultaneous linear equations by finding the point of intersection of their graphs.
- Use systematic trial and improvement methods to find approximate solutions of equations such as x 2+ 2x = 20 (1, 2 and 7).
- Construct functions arising from real-life problems; draw and interpret their graphs.
- Use algebraic methods to solve problems involving direct proportion, relating solutions to graphs of the equations.

Geometry

Shapes and geometric reasoning

- Calculate the interior or exterior angle of any regular polygon; prove and use the formula for the sum of the interior angles of any polygon; prove that the sum of the exterior angles of any polygon is 360°.
- 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.
- Draw 3D shapes on isometric paper.
- Analyse 3D shapes through plans and elevations.
- Identify reflection symmetry in 3D shapes.
- Know and use Pythagoras' theorem to solve two-dimensional problems involving right-angled triangles.
- Use a straight edge and compasses to:
  1. construct the perpendicular from a point to a line and the perpendicular from a point on a line
  2. inscribe squares, equilateral triangles, and regular hexagons and octagons by constructing equal divisions of a circle

Position and movement

- Tessellate triangles and quadrilaterals and relate to angle sums and half-turn rotations; know which regular polygons tessellate, and explain why others will not.
- Use the coordinate grid to solve problems involving translations, rotations, reflections and enlargements.
- Transform 2D shapes by combinations of rotations, reflections and translations; describe the transformation that maps an object onto its image.
- Enlarge 2D shapes, given a centre and positive integer scale factor; identify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segments.
- Recognise that translations, rotations and reflections preserve length and angle, and map objects on to congruent images, and that enlargements preserve angle but not length.
- Know what is needed to give a precise description of a reflection, rotation, translation or enlargement.
- Use bearings (angles measured clockwise from the north) to solve problems involving distance and direction.
- Make and use scale drawings and interpret maps.
- Find by reasoning the locus of a point that moves at a given distance from a fixed point, or at a given distance from a fixed straight line.

Measure

Length, mass and capacity

- Solve problems involving measurements in a variety of contexts.

Mathematics

Time and rates of change

- Solve problems involving average speed.
- Use compound measures to make comparisons in real-life contexts, e.g. travel graphs and value for money.

Area, perimeter and volume

- Convert between metric units of area, e.g. mm^2 and cm^2, cm^2 and m^2 and volume, e.g. mm^3 and cm^3, cm^3 and m^3; know and use the relationship 1 cm^3 = 1 ml.
- Know that land area is measured in hectares (ha), and that 1 hectare = 10 000 m^2;
- Convert between hectares and square metres.
- Solve problems involving the circumference and area of circles, including by using the π key of a calculator.
- Calculate lengths, surface areas and volumes in right-angled prisms and cylinders.

Handling data

Planning and collecting 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.
- Identify primary or secondary sources of suitable data.
- Design, trial and refine data collection sheets.
- Collect and tabulate discrete and continuous data, choosing suitable equal class intervals where appropriate.

Processing and presenting data

- Calculate statistics and select those most appropriate to the problem.
- Select, draw, and interpret diagrams and graphs, including:
    1. Frequency diagrams for discrete and continuous data
    2. Line graphs for time series
    3. Scatter graphs to develop understanding of correlation
    4. Back to back stem-and-leaf diagrams

Interpreting and discussing results

- Interpret tables, graphs and diagrams and make inferences to support or cast doubt on initial conjectures; have a basic understanding of correlation.
- Compare two or more distributions; make inferences, using the shape of the distributions and appropriate statistics.
- Relate results and conclusions to the original question.

Probability

- Know that the sum of probabilities of all mutually exclusive outcomes is 1 and use this when solving probability problems.
- Find and record all outcomes for two successive events in a sample space diagram.
- Understand relative frequency as an estimate of probability and use this to compare outcomes of experiments in a range of contexts.

Problem solving

- Using techniques and skills in solving mathematical problems
- Calculate accurately, choosing operations and mental or written methods appropriate to the numbers and context.
- Manipulate numbers, algebraic expressions and equations, and apply routine algorithms.
- Understand everyday systems of measurement and use them to estimate, measure and calculate.
- Recognise and use spatial relationships in two dimensions and three dimensions.
- Draw accurate mathematical diagrams, graphs and constructions.
- Decide how to check results, by:
    1. Using rounding to estimate numbers to one significant figure and calculating mentally then comparing with the estimate
    2. Considering whether an answer is reasonable in the context of the problem
    3. Using inverse operations
- Estimate, approximate and check their working.

Problem solving (Cont.)

- Solve a range of word problems involving single or multi-step calculations.
- Using understanding and strategies in solving problems.
- Identify, organise, represent and interpret information accurately in written, tabular, graphical and diagrammatic forms.
- Explore the effect of varying values in order to generalise.
- Find a counter-example to show that a conjecture is not true.
- Present consise reasoned arguments to justify solutions or genaralizations using symbols diagrams and graphs and related explanations.
- Recognize the impact of constraints or assumptions.
- Recognise connections with similar situations and outcomes.
- Consider and evaluate the efficiency of alternative strategies and approaches and refine solutions in the light of these.

Grade 8 (Stage 9)

Unit 4- Age of Global Revolutions, 1700's- 1914

- Analyze the causes and consequences of major political revolutions, including the American and French Revolutions, Latin American independence movements, and the Revolutions of 1848.
- Analyze the origins, characteristics, and consequences of industrialization by comparing and contrasting the process in Britain, Germany, United States, and France.
- Compare and contrast the rise of the nation-states in a western context (Germany, Italy) and non-western context (Meiji, Japan).
- Analyze the political, economic, and social causes and consequences of 19th century imperialism.
- Compare and contrast the political, economic, and social causes and consequences of the American, French, Latin American, and Chinese Revolutions and the Meiji Restoration.
- Analyze how individuals and movements have shaped world history during the era of revolutions.
- Analyze the political, economic, and social transformations in East Asia, including the Meiji Restoration and the decline of Qing China.
- Describe the origins of industrialization.
- Examine how scientific and technological inventions and discoveries brought about massive social, economic, political, and cultural change.
- Industrialization in Britain, Belgium, Germany, Japan, France, and the United States.
- Analyze how humans used technology to modify the physical environment.
- Describe the growth of population, rural to urban migration, and growth of cities associated with the Industrial Revolution.
- Identify the social and economic impacts of industrialization, including its effect on women and children and the rise of organized labor unions.
- Describe the environmental impacts of industrialization and urbanization.
- Describe increasing global interconnections between societies, through the emergence and spread of economic and political systems and innovations and technologies via new global networks.
- Identify the major political, economic, cultural, and social motivations that influenced European imperialism.
- Discuss the locations of colonial rule of such nations as England, France, Germany, Italy, Japan, the Netherlands, Russia, Spain, Portugal, and the United States.
- Use maps, photographs, and other evidence to analyze and explain the causes and global consequences of 19th century imperialism, including encounters between imperial powers and local peoples in India, Africa, Central Asia, and East Asia.
- Describe the link between industrial economies, imperialism, and colonialism; including the role of land, resources, and technology; national security and hegemony; and moral, religious, and racial issues.
- Compare British policies in South Africa and India, French policies in Indochina, and Japanese policies in Asia.
- Evaluate the different experiences of African societies north and south of the Sahara with imperialism.
- Explain imperialism from the perspective of the colonizers and the colonized and the varied immediate and long-term responses by the people under colonial rule.

Global Crisis and Achievement, 1900-1945

- Analyze the changes in the global balance of military, economic, and political power between 1900 and 1945.
- Explain the causes, characteristics, and long-term consequences of World War I.

- Analyze the transformations that shaped world societies between World War I and World War II.
- Analyze the causes, course, and immediate consequences of World War II.

World War I

- Analyze the causes of World War I, including nationalism, industrialization, territorial disputes, the alliance system, imperialism, and militarism.
- Examine the principal theaters of battles, characteristics, and major turning points of World War I
- Analyze the long-term consequences of World War I, including the Versailles Treaty and its spatial and political consequences.
- Discuss the influence of World War I on literature, art, and intellectual life in the West.

The Russian Revolution

- Identify the historical origins and characteristics of socialism and communism, including the influences of Karl Marx.
- Describe the causes of the February and October revolutions of 1917 in Russia.
- Analyze the consequences of the Russian Revolution, including its effect on World War I and the Bolshevik establishment of the Union of Soviet Socialist Republics (USSR).
- Evaluate Vladimir Lenin's use of totalitarian means to seize and maintain control.

Foreign Influences and Revolutions in America

- Describe economic and social trends that shaped Latin America in the 1800s.
- Analyze transformations that occurred in Latin America in the early 1900s, including economic imperialism, foreign military intervention, and the nationalization of foreign investments.
- Identify political, economic, and social tensions present during the Mexican Revolution and throughout Latin America in the 19th and 20th centuries.
- Compare revolutionary movements among various Latin American countries in the 20th century, including how citizens participated in changing their governments.
- Identify the influence of ideas such as liberty, equality, democracy, human rights, constitutionalism, and nationalism on political revolutions

North Africa and the Middle East

- Describe the decline of the Ottoman Empire.
- Trace changes in the Arab world, including the growth of Arab nationalism, the rise of Arab nation-states, and the increasing political, geographic, economic, and religious complexity of Arab peoples.
- Explain the role of the Mandate system in the Middle East.
- Analyze the impact of the discovery of petroleum resources in the Middle East.

The Rise of Fascism and Totalitarian States

- Describe the emergence and characteristics of fascism and totalitarianism.
- Analyze changes in the global balance of military, political, and economic power between World War I and World War II.
- Examine the responses of governments in Nazi Germany and the Soviet Union to the global depression in the 1930s.
- Compare the ideologies, policies, and governing methods of 20th century dictatorial regimes in Nazi Germany, Italy, Spain, and the Soviet Union.
- Explain the roles of Benito Mussolini, Adolf Hitler, Francisco Franco, and Joseph Stalin prior to World War II.
- Analyze how art reflects the culture in which it is created.

World War II

- Analyze the causes of World War II, including aggression and conflict appeasement that led to war in Europe and Asia.

- Explain the Nazi ideology, policies, and consequences of the Holocaust (or Shoah).
- Describe the impact of Japanese imperialism in Asia.
- Analyze the major turning points and unique characteristics of the war.
- Evaluate the immediate consequences of the war's end including the devastation, effects on population, dawn of the atomic age, and the occupation of Germany and Japan.
- Describe the emergence of the United States and the Soviet Union as global superpowers.

Forces for Independence and Revolution in Asia

- Analyze the political, economic, and social transformations that occurred in India and China during the first half of the 20th century.
- Explain the rise of Chinese nationalism, the emergence of communism, and civil war in China.
- Analyze the journey to independence in India.
- Compare the backgrounds, leadership, and strategies of Gandhi and Mao.

The Cold War and Beyond, 1945-Present

- Describe the factors that contributed to the Cold War including the differences in ideologies and policies of the Soviet bloc and the West; political, economic, and military struggles in the 1940s and 1950s; and development of communism in China.

Era Overview- The Cold War and Beyond, 1945-Present

- Describe the major arenas of conflict, including the ways the Soviet Union and the United States attempted to expand power and influence in Korea and Vietnam.
- Develop an argument to explain the end of the Cold War and its significance as a 20th-century event.
- Explain the changing configuration of political boundaries in the world caused by the Cold War.

The Cold War and the Third World

- Analyze the complex and changing legacy of imperialism in Africa, Southeast Asia, and Latin America during and after the Cold War.
- Develop an argument to explain the effects of the Cold War in nations in Africa, Southeast Asia, and Latin America.
- Organize and interpret information from photographs, videos, and maps.
- Create visual material such as presentations based on research.

Movements Toward Independence and Democracy

- Compare independence movements and formation of new nations in Africa, the Middle East, the Indian subcontinent, Eastern Europe, and Southeast Asia during and after the Cold War.
- Analyze the causes and challenges of ongoing and new conflicts, including terrorism around the world and tensions from ethnic, territorial, and nationalist disputes.
- Explain the roles of modern world leaders, including Lech Walesa and Pope John Paul II, in the collapse of communism in Eastern Europe.
- Use maps to explain the changing configuration of political boundaries in the world caused by World War I, World War II, the Cold War, and the growth of nationalist sovereign states.
- Graph and analyze data to evaluate the historical success of nations in the 20th century in developing their economic and political systems.

Shifts of Power in the Middle East

- Analyze the interregional causes and consequences of conflicts in the Middle East, including the development of the state of Israel, Arab-Israeli disputes, Palestine, the Suez crisis, and the nature of the continuing conflict.
- Explain the changing configuration of political boundaries in the world caused by the growth of nationalist sovereign states (including Israel, Jordan, Palestine)

Social Studies

Contemporary Global Issues

- Analyze and explain the causes and consequences of population changes over the past 50 years.
- Describe and explain the changes over the past 50 years in the use, distribution, and importance of natural resources on human life, settlement, and interactions.
- Define and analyze the process of globalization, including the economic interdependence of the world's countries and world trade patterns, comparative economic advantages and disadvantages of regions, and the distribution of wealth and resources.
- Analyze the causes and challenges of continuing and new conflicts, including those created by ethnic territorial, religious, and or nationalist differences.
- Define the process of globalization and evaluate the merit of this concept to describe the contemporary world by analyzing economic interdependence of the world's countries and world trade patterns; the exchanges of scientific, technological, and medical innovations; cultural diffusion and the different ways cultures/societies respond to "new" cultural ideas and patterns; comparative economic advantages and disadvantages of regions, regarding cost of labor, natural resources, location and tradition; distribution of wealth and resources and efforts to narrow the inequitable distribution of resources.
- Analyze the causes and challenges of continuing and new conflicts, including those created by ethnic, territorial, religious, and or nationalist differences

Cambridge
Secondary 1

CURRICULUM - SPECIALISTS SUBJECTS

Technology (Based on The British National Curriculum)

The iPad-based K-8 Technology curriculum is developed using the contents of Computing in the British National Curriculum. There is a focus on computational thinking and creativity as well as a wide exposure to creative work in programming and digital media. The curriculum emphasises three aspects: Computer Science (CS), Information Technology (IT) and Digital Literacy (DL).

Computer Science (CS)

CS involves the design and development of all types of usable hardware and software, operating systems, and interactive games and apps. This area includes use of mathematical algorithms, the understanding of computer theory, and writing code to generate the latest in computer technology. Computer programmers—as the people who create these programs are called—write code to create software programs, then turn these designs into instructions that a computer or mobile device can follow.

Information Technology (IT)

IT involves the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data, as defined by Merriam-Webster.

Information Technology (Cont.)

IT aspects use the programs created by computer scientists and focus on the practical application of computers in everyday life. They may help to explain to a student how to solve a technology issue and to implement new technology plans that meet their needs. Information Technology has become an integral piece of every business plan for both small and large businesses.

Digital Literacy (DL)

DL includes creating the awareness of responsible, competent, confident and creative use of computer peripherals and information technology, among all the pupils. The K-8 Tech curriculum follows Common Sense Media's Scope & Sequence tool which has a wide range of age-appropriate lessons that address digital literacy and citizenship topics for the classroom.

Visual Art (Based on Ontario Curriculum)

Mastering techniques that show an understanding of the elements and principles of art. Students will be introduced to different mediums and the methods to use them which will enhance the outcome of the art works. There are two strands: Elements of Design and Principles of Design. These strands provide structure to the vertical alignment of the Visual Arts study.

ELEMENTS OF DESIGN

Students will develop understanding of all elements of design.

- **Line:** lines that direct the viewer's attention; lines that create the illusion of force or movement (e.g., wavy and wiggly lines used in op art); contour drawings of objects that are not easily recognizable (e.g., crumpled paper)
- **Shape and form:** exaggerated proportions, motifs, fonts; geometric (e.g., conical, pyramidal) shapes and forms
- **Space:** centre of interest (focal point) and one-point perspective; basic facial proportions; horizontal and vertical symmetry
- **Colour:** the colour wheel; tertiary colours; colour for expressive purposes; colour for creating naturalistic Images
- **Texture:** textures created with a variety of tools, materials, and techniques (e.g., gouged marks in a softoleum print)
- **Value:** shading that suggests volume; gradation

PRINCIPLES OF DESIGN

- Students will develop understanding of all principles of design (that is, contrast, repetition and rhythm, variety, emphasis, proportion, balance, unity and harmony, and movement).
- **Balance:** arrangement of the elements of design to create the impression of equality in weight or importance (e.g., a formal or symmetrical arrangement produced through distribution of shapes; an informal or asymmetrical arrangement produced through use of colour); colour concepts to be used in creating balance (e.g., light or neutral colours appear lighter in "weight" than dark or brilliant colours; warm colours seem to expand, cool colours seem to contract; transparent areas seem to "weigh" less than opaque areas)
- **Unity and Harmony:** radial balance (e.g., a mandala); similarity (e.g., consistency and completeness through repetition of colours, shapes, values, textures, or lines); continuity (e.g., treatment of different elements in a similar manner); alignment (e.g., arrangement of shapes to follow an implied axis); proximity (e.g., grouping of related items together)
- **Proportion:** the relationship of the size and shape of the parts of a figure to the whole figure; the scale of one object compared to its surroundings, with indications of how close and how large the object is (e.g., figures with childlike proportions that are approximately "five heads high" and adult figures that are approximately "seven or eight heads high"; caricature; use of improbable scale for imaginary settings and creatures)
- **Emphasis:** use of color intensity, contrast in value, placement and size of shapes, and/or weight of line to create a particular focal point
- **Variety:** slight variations on a major theme; strong contrasts (e.g., use of different lines, shapes, values, and colors to create interest [bright or light color values, dark color values)
- **Repetition and rhythm:** repetition of colour and shape in patterns; random, alternating, and regular patterns in everyday objects (e.g., textiles, ceramics) and in art (e.g., works by M. C. Escher)
- **Contrast:** light/dark; large/small; pure/mixed color

Physical Education with swimming (Based on Ontario Curriculum)

Healthy living and Physical Education combine the living skills (e.g., personal, interpersonal, communication, conflict resolution, goal-setting, organizational, time-management, problem-solving, and decision-making skills) that all students require. Each unit takes approximately 3 weeks. Each grade has more advanced goals for each unit.

Fundamental movement skills

Fundamental movement skills include locomotion/ traveling, manipulation, and stability.
Active participation includes physical activity, physical fitness, living skills, and safety.

The Student

- **Standard 1:** Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.
- **Standard 2:** Participates regularly in physical activity.
- **Standard 3:** Exhibits responsible personal behavior and social behavior that respects self and others in physical activity settings.
- **Standard 4:** Values physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

Units

- Games of Low Organization
- Dodge ball, tag games, standing kho, zombie, capture the flag, kick ball, and touch rugby, Sharks and minnows, Relays.
- Muscular strength – Push up , Sit up, etc.
- Speed – 35 meter sprint.
- Agility – Shuttle Run test
- Explosive strength – Standing broad jump.
- Flexibility – Sit and reach test.
- Basketball- Dribbling, Passing, receiving, shooting.
- Handball – Dribbling, passing, shooting
- Track & Field- long jump, softball throw, 50 meter sprint, relay.
- Soccer- Dribbling, ground pass, throw-in, shooting.
- Futsal - Dribbling, ground pass, kick in, Shooting.
- Cricket – Batting grip and stance, laws, bowling run up and action.
- Softball – slugger grip and stance, rules, pitching action.

Swimming (School Generated Curriculum)

Year-round all students in Grade 1-8 swim for 1 class per cycle. Beginning swimmers become confident swimmers. Students move through differentiated skills and drills that include the elements of water skills, breathing practice, floating, kicking, hand movement, freestyle, backstroke, breaststroke and butterfly.

Music Spectrum (Based on Ontario Curriculum)

Students learn to sing to a prescribed pitch, employing appropriate expressions, dynamics, while maintaining a steady rhythm. They sing music from a variety of cultures and historical periods. Students will also identify the different parts of a song … prelude, verse, chorus, interlude, ending.

The greatest reason for introducing children to percussion instruments is to provide access to a creative mode for acknowledging and expressing thoughts and feelings. While listening, or playing music, children are lifted out of their ordinary frames of reference for a time. Being able to feel the beats and keep time is essential if you're going to play a song correctly. Music, like any subject, has its own terminology. At first the many terms that musicians use to describe music can seem daunting. But there is nothing mysterious about these terms; they merely use words to describe something we can all hear with a little bit of practice. Students also identify the four families of orchestral instruments.

Vocal Music & Music History

- Sing to a prescribed pitch
- Maintain a steady rhythm while singing
- Use appropriate expressions
- Employ effective dynamics
- Maintain a proper posture while singing
- Explore music from different cultures

Percussion Instruments & Music Theory

- Create and perform music, using a variety of sound sources
- Use correctly the vocabulary and musical terminology associated with the specific expectations for this grade
- Identify the instruments within the percussion family of orchestral instruments
- Create or arrange music to accompany a reading or dramatization, using appropriate rhythm instruments, body percussion, or "found" instruments
- Explain using appropriate musical terminology, their preferences for specific songs or pieces of music

The Elements of Music

Demonstrate an understanding of the basic elements of music specified for this grade through listening to, performing, and creating music

Music is made up of elements (e.g., pitch, texture, timbre, dynamics, tempo, duration, structure, etc.) They are the building blocks of music. When you compose a piece of music you use the elements of music to build it. The elements are the essence of music. If you know the basic building blocks of music, playing, creating, and improvising music will be much easier and more satisfying. Children have the ability to respond naturally to music. Music Creativity allows the individual child to participate in a non stressful environment where each child responds naturally to music.

Music Creativity allows students to use individual skills to relate, remember and respond to specific learning experiences. These experiences become lifetime lessons because Music Creativity allows students to create from within. The themes of Vocal Music and Music History, Percussion Instruments and Music Theory, and The Elements of Music spiral to appear in more depth each year.

The Elements of Music (Cont.)

- Communicate their response to music in ways appropriate for this grade
- Demonstrate understanding of the difference between the terms beat and rhythm
- Identify the beat, rhythm, melodic contour, dynamics, and tempo in familiar pieces of music
- Create melodic contour maps that indicate the direction of pitches in familiar songs
- Indicate with appropriate arm movements the dynamics heard in familiar music
- Create and perform musical compositions in which they apply their knowledge of the elements of music and patterns of sounds, and use the voice, instruments, or "found" materials
- Recognize that sounds and silences of different durations may be represented by symbols
- Substitute different words in familiar songs or create new verses, using their knowledge of rhythm to ensure that the new text fits with the melody
- Communicate their thoughts and feelings about the music they hear, using language and a variety of art forms and media
- Identify and explain the effects of different musical choices

Band (Based on Ohio Standards for Instrumental Music)

In Band, there are opportunities for students to demonstrate mastery of musical skills, techniques, and understandings of musical language. Music Literacy is more than just an ability to read music. It is the ability to communicate effectively with other musicians, in musical terms, to describe thoughts, images, and feelings. This will be assessed through in-class discussions and on projects and assignments in rehearsal situations. The most important aspect of musical literacy is that it will help you move beyond understanding music to experiencing the sheer joy of music.

The instrumental program for the secondary students begins at the grade 6 level. The ensemble consists of the instrumentation that of a traditional wind band voicings. Instruments include flute, violin, clarinet, saxophone, trumpet, trombone, baritone, tuba, and percussion. Students then have the opportunity to continue their musical education by advancing to the 7th grade band, and then the 8th grade band. The 7th and 8th grade bands combine to create the Middle School Concert Band.

The moment students have the opportunity to pick up an instrument, they begin an exciting adventure that is filled with challenges and rewards. When students study music carefully, and practice regularly, they will quickly discover the joy and satisfaction of playing beautiful music for themselves, their family, their friends, and in a concert audience.

Practice is the key to excellence in the instrumental program. Students are accountable to keeping practice standards as a main core element:
Make time to practice as a part of the daily schedule. Students should build a routine, weather it be practicing in the same space each day to the familiar routine of warm up, practice, and cool down. Much like an athlete does on a daily basis for training.
Set personal goals as a musician.
Practice the difficult spots over and over. Not just the easy spots.

Finally, at the end of each practice session, play something fun!

Formal concerts are featured twice a year at the Winter Concert, and the Spring Concert. There are several opportunities for the bands to perform for various community events in the CIS community.

Students are required to be in attendance for concerts in which they are performing. The art of performing is a confidence builder and provides opportunities for parents to be involved in the education of their children.

The secondary instrumental band program is a program that sets CIS above many international schools for offering a unique international arts experience.

Drama (Based on Ontario Curriculum)

Students transfer skills from English Language Arts as they learn practical drama techniques to explore characterization and storytelling.

Students learn explicit strategies to foster approaches to learning such as collaboration and social skills. They learn about the strengths of peers and themselves and make decisions in the process of creating a performance that harness those strengths. Daily debriefing after lessons and rehearsals teaches students language that reinforces growth mindset and builds community.

As a project-based performance class, drama is differentiated to allow students a variety of roles in the creative process that suit their interests and learning style. All students must perform on stage, but there are many variations in size and type of roles, as well as a variety of tasks that allow students to explore other aspects of theatre such as scriptwriting, costume design, sound design, choreography, publicity etc.

Ensemble building, rehearsal techniques, and performance techniques continue to be developed throughout the entire year. Each term has a theme that includes assessment in the form of performance and of reflection. In each drama class, there is a workshop style lesson with explicit goals linked to practical exercises followed by daily debriefing session establish an ongoing feedback loop between students and teacher about group and individual progress towards learning goals.

Strategies for Success (SFS)

This course is designed to help students develop methods of managing stress, time management and an awareness of their surrounds as well as the thoughs on their mind. The course is divided into 3 parts (one per term):

Mindfulness: Using the breath as a guide, students are taught various breathing techniques that help them not only calm down but also give insight into what is on their mind. From this, the lessons grow into helping them understanding their realizations from the breathing activities and identify various patterns they have for avoiding challenging situations in their life.

Gratitude: Keeping up with the mindfulness activities, the students then express their gratitude to others to help they continue to highlight and spotlight areas in their life that they are grateful for. This helps them move away from fixating on what is challenging into what is also working and cause for celebration.

Reflection: Combining mindfulness and gratitude, students now start to reflect in a variety of methods of their choice (video, audio, written, artistic) of how they are dealing with challenges, identifying where they are struggling and seeking ways to improve it. This now integrates the breathing techniques of mind awareness, outward gratitude to others and a constant reflection of how they are doing with their own challenges via the tools of breathing in class.

Additional Languages

Students in PK, JK, SK will be introduced to Hindi Language and Culture once per six-day cycle. In Grade 1, Hindi class occurs twice per cycle. This is the fifth year that we are offering this subject at these grades. Students enjoy this exploration of their host country.

In Grade 2 and 3 of the Elementary School, students study their host country language, Hindi or English as an Additional Language (EAL) and attend classes twice per six-day cycle.

In Grades 4 and 5, students choose an additional language, either Hindi, French, Spanish, or EAL and attend three classes per cycle. From Grade 4 onwards, the Common European Framework of Reference for Languages (CEFR) guides all learning objectives. It is an international standard for describing language ability. It is used around the world to describe learners' language skills.

Hindi - In August 2016, CIS will expand its Hindi Language and Culture classes to have both higher and lower level Hindi options available for students in Grades 1-3. This will allow for greater differentiation of teaching and learning.

EAL - Students that attend English as a Second Language (ESL) during the regular English classes are required to attend English as an Additional Language (EAL) from Grades 2-10. The selection process for ESL is done in consultation with Admissions, the classroom teachers and parents. EAL supports students new to learning in an English speaking environment and strengthens the English immersion programme through an emphasis on supporting Social Studies, Math and Science. Students remain in EAL even after being mainstreamed from ESL, as the EAL environment supports the learning that occurs in the mainstream classroom. Eventually students leave the EAL classroom, this usually occurs at the beginning of the student's second school year at CIS, but is decided in consultation with classroom teachers, EAL teachers, and the student's parents.

French and Spanish - Students attending these classes begin at a beginner level in Grade 4 and the syllabus is based on CEFR standards. Learning objectives in both subjects are the same. These classes are offered 3 times per cycle in Grade 4 and 5.

Additionally, Mother Tongue German, French, Japanese and Spanish are taught independently and optionally during Additional Language slots in many grades. These classes are scheduled in the spring of each year, after parents are polled about their interest in Mother Tongue Language study. This offering carries an additional fee (payable and discussed directly with the MT Teacher) and space and timetable arrangements are organized by the school. These classes are held at school, but taught and assessed independently.

Consistency in language choices is important at CIS. Students continue into Middle School with French, Hindi, EAL or Spanish as additional languages in Grade 6, 7 & 8. French is an official language of Canada and is supported at two levels in Grades 6-10. French as an Additional Language is taught at a lower and a higher version at these grades. As students often join our school without earlier study in our additional languages, the lower French course is a great beginning choice for them. Students join CIS at all different grade levels and with many different language backgrounds. Additional Language classes at CIS do differentiate to support varying levels of ability and experiences. Hindi in Middle School and beyond will be aimed at Hindi B learner, those with Hindi experience, Hindi in their home, or outside connections to Hindi. Studying Hindi in Grade 6, 7 and 8 is not an option for a first time Hindi learner. CIS encourages all students to continue with one additional language throughout their schooling.

Shaping The Future... Together! Today!

CANADIAN
INTERNATIONAL
SCHOOL

OUR MISSION

CIS is a culturally-rich mosaic serving each student by providing a world-class international education, nurturing potential, developing life-long skills, and preparing students for an ever-changing global community.

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