Parent PYP Curriculum Handbook

Grade 4

LSIS Mission Statement

At Learning Skills International School, we are a community of learners whose intentions are to produce lifelong learners who are globally competent and global minded. It is a place where the joy of learning is practiced and celebrated daily. Our teachers and students strive to be well versed in the tenets of 21st Century Education such as; creativity, collaboration, communication and critical thinking. It is a place where instructional practices are guided by standards-based rigorous curricula that allows for successful completion of Units of Inquiry. Underpinning all that we do is our expectation that our students will continue to demonstrate the Learner Profiles of the International Baccalaureate Primary Years Program of Inquirers, Knowledgeable, Thinkers, Communicators, Principled, Open-Minded. Caring, Risk Takers, Balanced and Reflective.

IB Mission Statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

Programme of Inquiry

	Who We Are	Where we are in place and time	How we express ourselves	How the world works	How we organize ourselves	Sharing the planet
PYP Transdisciplinary Themes	An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human.	An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.	An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.	An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.	An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.	An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.
Central Idea and Lines of Inquiry	Human migration involves challenges, taking risks and embracing opportunities. An inquiry into: ☐ Reasons why people move ☐ How identity is further developed as a result of moving ☐ Perspectives on migration from those who have moved	The balance of power between people and government can promote or deny opportunities. An inquiry into: ☐ Governmental structures ☐ Rights and access to opportunities ☐ Individual and collective responsibility within a society	The decisions people make often result from the persuasive way media encourages people to live a certain way. An inquiry into: ☐ Media technique that persuade ☐ Evaluating messages in the media ☐ Responsible use of the media	The continual, changing nature of the Earth results in human survival being challenged to overcome and thrive. An inquiry into: ☐ How different components of the Earth are interrelated ☐ How the Earth has changed and is continuing to change ☐ Human response to the Earth's dramatic changes	The interdependence of supply and demand influences trade therefore impacting people and their choices of what to buy. An inquiry into: ☐ Different ways we trade ☐ Supply and demand ☐ Social and environmental impact of trade	Electricity, as a resource, requires that it be used more efficiently. An inquiry into: ☐ The role of magnets play in forming electricity ☐ Electrical circuits ☐ Efficient ways electricity can be used and conserved
PYP Key	Causation, Change, Perspective	Function, Connection, Responsibility	Function, Perspective, Responsibility	Form, Causation, Change	Connection, Responsibility	Form, Function, Connection

LSIS English Learning Outcomes - Grade 4

Conceptual Understandings for written language: READING	
• Reading and thinking work together to enable us to make meaning. • Checking, rereading and correcting our own reading as we go enable us to read new and more complex texts. • Identifying the main ideas in the text helps us to understand what is important. • Knowing what we aim to achieve helps us to select useful reference material to conduct research.	
READING LITERATURE - Learning Outcomes for written language:	
Key Ideas and Details	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
	Determine a theme of a story, drama, or poem from details in the text; summarize the text.
	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).
Craft and Structure	Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).
	Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.
	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.
Integration of Knowledge and Ideas	Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.
	Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.
Range of Reading and Level of Complexity Responding to Literature	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.
	Recognize, interpret and make connections in narratives, poetry, and drama, to other texts, ideas, cultural perspectives, personal events and situations. Self-select text based upon personal preferences.
READING INFORMATIONAL TEXT - Learning Outcomes for written language:	
Key Ideas and Details	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
	Determine the main idea of a text and explain how it is supported by key details; summarize the text.
	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
Craft and Structure	Determine the meaning of general academic and domain specific words or phrases in a text relevant to a grade 4 topic or

	subject area.
	Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
Integration of Knowledge and Ideas	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
	Explain how an author uses reasons and evidence to support particular points in a text.
	Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
Range of Reading and Level of Complexity Responding to Literature	By the end of year, read and comprehend informational texts- including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

READING FOUNDATIONAL SKILLS - Learning Outcomes for written language:	
Phonics and Word Recognition	Know and apply grade-level phonics and word analysis skills in decoding words. - Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
Fluency	Read with sufficient accuracy and fluency to support comprehension. • Read grade-level text with purpose and understanding. • Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Conceptual Understandings for Written Language: WRITING
• Writing and thinking work together to enable us to express ideas and convey meaning. • Asking questions of ourselves and others helps to make our writing more focused and purposeful. • The way we structure and organize our writing helps others to understand and appreciate it. • Rereading and editing our own writing enables us to express what we want to say more clearly.

WRITING - Learning Outcomes for Written Language:	
Text Types and Purposes	Write opinion pieces on topics or texts, supporting a point of view with reasons and information. • Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. • Provide reasons that are supported by facts and details. • Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition). Provide a concluding statement or section related to the opinion presented.
	Write informative /explanatory texts to examine a topic and convey ideas and information clearly. • Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. • Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the

	topic. • Link ideas within categories of information using words and phrases (e.g., another, for example, also, because). • Use precise language and domain-specific vocabulary to inform about or explain the topic. • Provide a concluding statement or section related to the information or explanation presented.
	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. • Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. • Use dialogue and description to develop experiences and events or show the responses of characters to situations. • Use a variety of transitional words and phrases to manage the sequence of events. • Use concrete words and phrases and sensory details to convey experiences and events precisely. Provide a conclusion that follows from the narrated experiences or events.
Production and Distribution of Writing	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.
	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
	With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
Research to Build and Present Knowledge	Conduct short research projects that build knowledge through investigation of different aspects of a topic.
	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 4 Reading standards to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character's thoughts, words, or actions]."). b. Apply grade 4 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text").
Range of Writing	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline specific tasks, purposes, and audiences.
	Create and present a poem, narrative, play, art work, or literary review in response to a particular author or theme studied in class.
LANGUAGE Learning Outcomes for written language::	
Conventions of Standard English	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. • Use relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why). • Form and use the progressive (e.g., I was walking; I am walking; I will be walking) verb tenses. • Use modal auxiliaries (e.g., can, may, must) to convey various conditions. • Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag). • Form and use prepositional phrases. • Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.* Correctly use frequently confused words (e.g., to, too, two; there, their).*
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. • Use correct capitalization.

	• Use commas and quotation marks to mark direct speech and quotations from a text. • Use a comma before a coordinating conjunction in a compound sentence. • Spell grade-appropriate words correctly, consulting references as needed.
	Use knowledge of language and its conventions when writing, speaking, reading, or listening. • Choose words and phrases to convey ideas precisely. • Choose punctuation for effect. • Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).
Knowledge of Language	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies. • Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase. • Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph). • Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
Vocabulary Acquisition and Use	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. • Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context. • Recognize and explain the meaning of common idioms, adages, and proverbs. • Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).
	• Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).
	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. • Use relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why). • Form and use the progressive (e.g., I was walking; I am walking; I will be walking) verb tenses. • Use modal auxiliaries (e.g., can, may, must) to convey various conditions. • Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag). • Form and use prepositional phrases. • Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.* Correctly use frequently confused words (e.g., to, too, two; there, their).*

Conceptual Understandings for Oral Language: LISTENING AND SPEAKING
• Taking time to reflect on what we hear and say helps us to make informed judgments and form new opinions. • Thinking about the perspective of our audience helps us to communicate more effectively and appropriately. • The grammatical structures of a language enable members of a language community to communicate with each other.
LISTENING AND SPEAKING - Learning Outcomes Oral Language:

Comprehension and Collaboration	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. • Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other

	information known about the topic to explore ideas under discussion.
	• Follow agreed-upon rules for discussions and carry out assigned roles. • Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. • Review the key ideas expressed and explain their own ideas and understanding in light of the discussion. • Seek to understand and communicate with individuals from different perspectives and cultural backgrounds.
	Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
	Identify the reasons and evidence a speaker provides to support particular points.
Presentation of Knowledge and Ideas	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
	Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.
	Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation.

Conceptual Understandings for Visual Language: VIEWING AND PRESENTING
• Visual texts have the power to influence thinking and behavior. • Interpreting visual texts involves making an informed judgment about the intention of the message. • To enhance learning we need to be efficient and constructive users of the Internet.
VIEWING AND PRESENTING - Learning Outcomes Visual Language:

Visual Language	• View, respond to and describe visual information, communicating understanding in oral, written and visual form. • Describe personal reactions to visual messages; reflect on why others may perceive the images differently. • Understand and explain how visual effects can be used to reflect a particular context. • Recognize and name familiar visual texts and explain why they are or are not effective, for example, advertising, logos, labels, signs, billboards. • Interpret visual cues in order to analyze and make inferences about the intention of the message. • Explain how relevant personal experiences can add to the meaning of a selected film/movie; write and illustrate a personal response. • Identify aspects of body language in a dramatic presentation and explain how they are used to convey the mood and personal traits of characters. • Design posters and charts, using shapes, colors, symbols, layout and fonts, to achieve particular effects; explain how the desired effect is achieved. • Discuss a newspaper report and tell how the words and pictures work together to convey a particular message. • Prepare, individually or in collaboration, visual presentations using a range of media, including computer and web-based. • Discuss and explain visual images and effects using appropriate terminology, for example, image, symbol, graphics, balance, techniques, composition. • Experience a range of different visual language formats; appreciate and describe why particular formats are selected to achieve particular effects. • Observe and discuss the choice and composition of visual presentations and explain how they contribute to meaning and

| | impact, for example, facial expressions, speech bubbles, word images to convey sound effects. |
| | • Realize that visual presentations have been created to reach out to a particular audience and influence the audience in some way; discuss the effects used and how they might influence the audience. |

LSIS Twi, Mandarin and French Language Learning Outcomes by Phase- Grade 4

It is important to recognize that the differentiation seen within a grade depends largely on their exposure to Chinese. In Grades 1-5, students are placed into Chinese language groupings based on language proficiency. Below are the learning outcomes for the END of Grade 4 in all 4 phases.

Phase of the PYP:	Phase 1 – Emergent	Phase 2 -Capable	Phase 3 - Proficient	Phase 4/5 - Fluent
Conceptual Understanding by Phase:	Learners show an understanding that print represents the real or the imagined world. They know that reading gives them knowledge and pleasure; that it can be a social activity or an individual activity. They have a concept of a 'book' and an awareness of some of its structural elements. They use the visual cues to recall sounds and the words they are 'reading' to construct meaning.	Learners show an understanding that language can be represented visually through codes and symbols. They are extending their data bank of printed codes and symbols and are able to recognize them in new contexts. They are extending their data bank of printed codes and symbols and are able to recognize them in new contexts. They understand that reading is a vehicle for learning, and that the combination of codes conveys meaning.	Learners show an understanding that text is used to convey meaning in different ways and for different purposes – they are developing an awareness of context. They use strategies, based on what they know, to read for understanding. They recognize that the structure and organization of text conveys meaning.	Learners show an understanding of the relationship between reading, thinking and reflection. They know that reading is extending their world, both real and imagined, and that there is a reciprocal relationship between the two. Most importantly, they have established reading routines and relish the process of reading.
At the end of the year the student…				
Listening	Is able to understand most simple classroom instructions in Chinese; Understands basic facts, messages, main ideas and supporting details in prompts dealing with familiar situations; Responds appropriately to prompts given	Is able to understand most regular classroom instructions in Chinese; Understands and draws simple conclusions from main ideas and supporting details in prompts dealing with familiar and unfamiliar situations; Responds appropriately based on personal experience and opinion	Is able to understand all class instructions in Chinese; Draws conclusions main ideas and supporting details in prompts dealing with social and some academic situations; Responds appropriately based on experiences and opinions, a global perspective is introduced	Is able to understand all class instructions in Chinese; Analyses (with support) and draws conclusions about main ideas and supporting details in prompts dealing with social and some academic situations; Responds appropriately based on experiences and opinions from a global perspective (with some support)
Speaking	Interacts in basic structured exchanges; Uses a basic range of vocabulary and grammar, errors do not hinder understanding; Uses fairly clear pronunciation, errors do not hinder understanding	Engages in rehearsed and many unrehearsed exchanges to share ideas; Uses a range of vocabulary and some complex grammatical structures with little support, errors do not hinder understanding; Use clear pronunciation, errors are very minor	Engages in rehearsed and many unrehearsed exchanges to share ideas; Uses a good range of vocabulary and attempts complex grammatical structures, errors do not usually hinder understanding; Use clear pronunciation and is more aware of intonation	Is able to engage in unrehearsed and fairly complex exchanges to share thoughts and ideas, Uses a good range of vocabulary and some complex grammatical structures, errors are minor; Uses clear pronunciation, correct intonation and

			and fluency; Understands register and purpose	fluency; Understands register and purpose
Reading	Reads texts 100-150 characters long, pinyin support is acceptable; Identifies basic facts, main ideas and supporting details and draws simple conclusions; Identifies basic conventions including format and style and author's purpose with teacher support	Reads texts 200-300 characters long with some pinyin for new vocabulary if needed Understands implied information (with support), main ideas and supporting details, and draws simple conclusions; Understands basic conventions including format and style and author's purpose with teacher support	Reads texts 300-500 characters long, a little pinyin support is acceptable; Draws conclusions from main ideas and supporting details Understands basic conventions including format and style and author's purpose with teacher support	Reads texts 400-600 characters long; Analyses (with support) and draws conclusions about main ideas and supporting details; Understands elements of the author's style and intentions based on the intended audience and purpose with teacher support
Writing	Writes texts using 25-50 characters independently; Uses a basic range of vocabulary and grammar fairly correctly, errors do not hinder understanding; Organizes information and ideas using some basic linking words May use pinyin if needed	Writes texts 100-150 characters independently Uses a range of vocabulary and grammar fairly correctly, errors do not hinder understanding; Organizes information and ideas logically using linking words Can use pinyin to learn new complex words if needed	Is able to write texts using 150-250 characters independently; Uses a good range of vocabulary and some complex grammatical structures, with some teacher support; errors do not usually hinder understanding; Organizes information and ideas logically using basic linking words May use pinyin to learn new words or complex vocabulary	Is able to write texts using 200-300 characters independently; Uses a good range of vocabulary and some complex grammatical structures, errors do not hinder understanding; Organizes information and ideas using some linking words May use pinyin to learn new words or complex vocabulary

LSIS Mathematics Learning Outcomes - Grade 4

<table>
<tr><td rowspan="2">Numbers and Operations in Base-Ten</td><td>Conceptual Understandings:</td></tr>
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Numbers and Operations in Base-Ten	**Conceptual Understandings:**
	- The base-10 place value system extends infinitely in two directions. - Fractions, decimal fractions and percentages are ways of representing whole-part relationships. - For fractional and decimal computation, the ideas developed for whole-number computation can apply. - Ratios are a comparison of two numbers or quantities. - Different models and representations can be used to compare fractional parts
	Learning Outcomes-By the end of Grade 4, students are expected to:

	- Recognize that in a multi-digit whole number, a digit in one place represents 10 times what it represents in the place to its right.
	 - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form
	  o Compare two multi-digit numbers based on meanings of the digits in each place, using $<$, $>$, and $=$ symbols to record the results of the comparisons
	 - Use place value understanding to round multi-digit whole numbers to any place.
	 - Fluently add and subtract multi-digit whole numbers using the standard algorithm.
	 - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.
	  o Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
	 - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.
	  Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Operations and Algebraic Thinking	- Interpret a multiplication equation as a comparison.
	  o Represent verbal statements of multiplicative comparisons as multiplication equations.
	 - Multiply or divide to solve word problems involving multiplicative comparisons, e.g. by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
	 - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations.
	  o Represent these problems using equations with a letter standing for the unknown quantity.
	  o Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
	 - Find all factor pairs for a whole number in the range 1–100.
	  o Recognize that a whole number is a multiple of each of its factors.
	  o Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.
	 - Determine whether a given whole number in the range 1–100 is prime or composite.

Fractions	- Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
	- Compare two fractions with different numerators and different denominators, e.g. by creating common denominators or numerators, or by comparing to a benchmark fraction such as ½. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols and justify the conclusions by using a visual fraction model.
	- Understand a fraction a/b with a > 1 as a sum of fractions 1/b.
	   o Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
	   o Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g. by using a visual fraction model.
	   o Add and subtract mixed numbers with like denominators, e.g. by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
	   o Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g. by using visual fraction models and equations to represent the problem.
	- Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
	   o Understand a fraction a/b as a multiple of 1/b.
	   o Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number.
	   o Solve word problems involving multiplication of a fraction by a whole number, e.g. by using visual fraction models and equations to represent the problem.
	- Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.
	- Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
	- Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, *or* < and justify the conclusion by using a visual model.

Math Strand: MEASUREMENT

Measurement and Data	Conceptual Understandings
	- Accuracy of measurements depends on the situation and the precision of the tool. - Conversion of units and measurements allows us to make sense of the world we live in. - A range of procedures exists to measure different attributes of objects and events. - Appropriate measurement tools, units, and systems are used to measure different attributes of objects and time.
	Learning Outcomes-By the end of Grade 4, students are expected to:
	- Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. o Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. - Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
Measurement	- Use timetables and schedules (12- hour and 24-hour clocks) in real-life situations - Determine times worldwide

Math Strand: SHAPE AND SPACE

Geometry	Conceptual Understandings
	- Manipulation of shape and space takes place for a particular purpose. - Consolidating what we know of geometric concepts allows us to make sense of and interact with our world. - Geometric tools and methods can be used to solve problems relating to shape and space.
	Learning Outcomes-By the end of Grade 4 students are expected to:
	- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. - Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. - Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. o Identify line-symmetric figures and draw lines of symmetry.
Shape and Space	- Identify and use scale (ratios) to enlarge and reduce shapes - Identify and use the language and notation of bearing to describe direction and position - Explore the use of geometric ideas and relationships to solve problems in other areas of mathematics.

Math Strand: DATA HANDLING

Data Handling	Conceptual Understandings
	- Visual displays are used to represent data. - Data can be presented effectively for valid interpretation and communication. - Range, mode, median and mean can be used to analyze statistical data. - Probability can be represented on a scale between 0–1 or 0%–100%. - The probability of an event can be predicted theoretically.
	Learning Outcomes-By the end of Grade 4, students are expected to:
	- Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). - Solve problems involving addition and subtraction of fractions by using information presented in line plots.
Measurement and Data	- Design a survey and systematically collect, record, organize and display the data in a bar graph, circle graph, line graph - Identify, describe and explain the range, mode, median and mean in a set of data - Create and manipulate an electronic database for their own purposes - Determine the theoretical probability of an event and explain why it might differ from experimental probability

Math Strand: PATTERNS AND FUNCTIONS

Operations and Algebraic Thinking	Conceptual Understandings
	- Patterns can often be generalized using algebraic expressions, equations or functions. - Exponential notation is a powerful way to express repeated products of the same number - Number patterns and relationships can be represented by symbols.
	Learning Outcomes-By the end of Grade 4, students are expected to:
	- Generate and analyze patterns and identify apparent features of the pattern that were not explicit in the rule itself
Patterns and Functions	- Select appropriate methods to analyze patterns and identify rules - Use functions to solve problems

Visual Arts Learner Outcomes

Visual Arts Learner Outcomes	Responding	Creating
Grade 4 and 5 (Phase 4 from the PYP)	• Explain the cultural and historical perspectives of an artwork • Understand the role and relevance of visual arts in society • Reflect on the factors that influence personal reactions to artwork • Reflect throughout the creative process to challenge their thinking and enact new and unusual possibilities • Critique and make informed judgments about artworks.	• Become increasingly independent in the realization of the creative process • Adjust and refine their creative process in response to constructive criticism • Identify factors to be considered when displaying an artwork • Utilize a broad range of ways to make meaning • Select, research and develop an idea or theme for an artwork • Develop an awareness of their personal preferences.

Music Learner Outcomes

Music Learner Outcomes	Responding	Creating
Grade 4 and 5 (Phase 4 from the PYP)	☐ Sing individually and in harmony ☐ Explain the role and relevance of music in their own culture, its uses and associations through place and time ☐ Interpret and explain the cultural and/or historical perspectives of a musical composition ☐ Modify their practices and/or compositions based on the audiences' responses ☐ Explore different artistic presentations that are/were innovative and their implications.	☐ Create music that will be continually refined after being shared with others ☐ Present, in small groups, innovative musical performances on a selected issue ☐ Incorporate the other arts and available resources in order to broaden their creative expression ☐ Read and write music in traditional and/or non-traditional notation.

Personal, Social and Physical Education Learner Outcomes

Personal, Social and Physical Education Learner Outcomes	Identity	Interactions	Active Living
Grade 4 and 5 (Phase 4 from the PYP)	□ Examine the complexity of their own evolving identities □ Recognize how a person's identity affects self-worth □ Recognize how a person's identity affects how they are perceived by others and influences interactions □ Analyze how society can influence our concept of self-worth (for example, through the media and advertising) □ Identify how aspects of a person's identity can be expressed through symbols, spirituality, dress, adornment, personal attitudes, lifestyle, interests and activities pursued □ Analyze how assumptions can lead to misconceptions □ Recognize, analyze and apply different strategies to cope with adversity □ Accept and appreciate the diversity of cultures, experiences and perspectives of others □ Identify causal relationships and understand how they impact on the experience of individuals and groups □ Use emotional awareness and personal skills to relate to and help others □ Identify how their self-knowledge can continue to support the growth and development of identity	□ Reflect critically on the effectiveness of the group during and at the end of the process □ Build on previous experiences to improve group performance □ Independently use different strategies to resolve conflict □ Work towards a consensus, understanding the need to negotiate and compromise □ Take action to support reparation in relationships and in the environment when harm has been done.	□ Reflect and act upon their preferences for physical activities in leisure time □ Understand the interdependence of factors that can affect health and well-being □ Identify realistic goals and strategies to improve personal fitness □ Identify and discuss the changes that occur during puberty and their impact on well-being □ Exhibit effective decision-making processes in the application of skills during physical activity □ Introduce greater complexity and refine movements to improve the quality of a movement sequence □ Recognize the importance of moderation in relation to safe personal behavior.

	☐ Understand the role of and strategies for optimism in the development of their own well-being ☐ Analyze self-talk and use it constructively ☐ Embrace a strong sense of self-efficacy that enhances their accomplishments, attitudes and personal well-being.		

Overall Expectations in Science

Overall Expectations in Science	Description
Grade 4 and 5 (Phase 4 from the PYP)	Students will develop their observational skills by using their senses and selected observational tools. They will gather and record observed information in a number of ways, and they will reflect on these findings to identify patterns or connections, make predictions, and test and refine their ideas with increasing accuracy. Students will explore the way objects and phenomena function, identify parts of a system, and gain an understanding of increasingly complex cause and effect relationships. They will examine change over time, and they will recognize that change may be affected by one or more variables. Students will reflect on the impact that the application of science, including advances in technology, has had on themselves, society and the environment. They will be aware of different perspectives and ways of organizing the world, and they will be able to consider how these views and customs may have been formulated. Students will examine ethical and social issues in science-related contexts and express their responses appropriately. They will use their learning in science to plan thoughtful and realistic action in order to improve their welfare and that of other living things and the environment. Students will communicate their ideas or provide explanations using their own scientific experience and that of others.

Science Strands	Description
Living Things	The study of the characteristics, systems and behaviors of humans and other animals, and of plants; the interactions and relationships between and among them, and with their environment.
Earth and Space	The study of planet Earth and its position in the universe, particularly its relationship with the sun; the natural phenomena and systems that shape the planet and the distinctive features that identify it; the infinite and finite resources of the planet.
Materials and Matter	The study of the properties, behaviors and uses of materials, both natural and human-made; the origins of human-made materials and how they are manipulated to suit a purpose.
Forces and Energy	The study of energy, its origins, storage and transfer, and the work it can do; the study of forces; the application of scientific understanding through inventions and machines.

Overall Expectations in Social Studies

Overall Expectations in Social Studies	Description
Grade 4 and 5 (Phase 4 from the PYP)	Students will recognize different aspects of human society, focusing on themselves and others within their own community as well as groups of people that are distant in time and place. They will extend their understanding of how and why groups are organized within communities, and how participation within groups involves both rights and responsibilities. They will understand the interdependency of systems and their function within local and national communities. Students will gain an appreciation of how cultural groups may vary in their customs and practices but reflect similar purposes. They will deepen their awareness of how people influence, and are influenced by, places in the environment. They will realize the significance of developing a sense of belonging and stewardship towards the environment, valuing and caring for it, in the interests of themselves and future generations. Students will consolidate their understanding of time, recognizing how ideas and actions of people in the past have changed the lives of others, and appreciating how the past is recorded and remembered in different ways. They will gain an understanding of how and why people manage resources. They will understand the impact of technological advances on their own lives, on society and on the world, and will reflect on the need to make responsible decisions concerning the use of technologies.

Social Studies Strands	Description
Human Systems and Economic Activities	The study of how and why people construct organizations and systems; the ways in which people connect locally and globally; the distribution of power and authority.
Social Organization and Culture	The study of people, communities, cultures and societies; the ways in which individuals, groups and societies interact with each other.
Continuity and Change Through Time	The study of the relationships between people and events through time; the past, its influences on the present and its implications for the future; people who have shaped the future through their actions.
Human and Natural Environments	The study of the distinctive features that give a place its identity; how people adapt to and alter their environment; how people experience and represent place; the impact of natural disasters on people and the built environment.
Resources and the Environment	The interaction between people and the environment; the study of how humans allocate and manage resources; the positive and negative effects of this management; the impact of scientific and technological developments on the environment.