

Starting with Workforce Skills			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p><u>Core Values Lesson 1</u></p> <ul style="list-style-type: none"> - Explore <i>FIRST</i> Core Values and their relationship to developing teamwork. - Understand the importance of <i>Gracious Professionalism</i>[®] and <i>Coopertition</i>[®]. - Develop a team identity and use it for communicating expectations as a team using <i>FIRST</i> Core Values and <i>Gracious Professionalism</i>. - Utilize <i>Engineering Notebook</i> templates to improve written communication as a team while practicing discovery and innovation. <p><u>Project Management Lesson 2</u></p> <ul style="list-style-type: none"> - Explore how to make what you learn more impactful. -Understand the tools available for project management. - Turn expectations into the goals you would like to accomplish. -Determine the tools and methods your team will use to manage a project. - Develop a safety plan for your team. <p><u>Problem Solving Skills Lesson 3</u></p> <ul style="list-style-type: none"> - Discover the engineering design process and tools for computational thinking. -Understand how computational thinking tools can help you improve the engineering design process. - Turn expectations into the goals you would like to accomplish. 	Oral Communication	O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)	X
		O.1.2 demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a wide variety of situations, including work in groups (e.g., follow the conversation and make relevant contributions in a group discussion; express interest in what is being said by commenting and questioning)	X
		O.1.3 identify a variety of listening comprehension strategies and use them appropriately before, during, and after listening in order to understand and clarify the meaning of increasingly complex and challenging oral texts (e.g., use background knowledge about the structure of oral texts such as debates, interviews, speeches, monologues, lectures, and plays to make predictions and identify important ideas while listening; ask questions for clarification or further information; use a range of note-taking strategies to keep track of or summarize important points; use self-questioning to monitor understanding of what is being said)	X
		O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)	X
		O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills	X
		O.3.2 identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills	X
	Reading	R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them	X
		R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and “Works Cited” or “References” lists help readers locate information and understand its context)	X
		R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)	
		R.3.2 predict the meaning of and rapidly solve unfamiliar words using different types of cues, including: semantic (meaning) cues (e.g., base words, prefixes, suffixes, phrases, sentences, and visuals that activate existing knowledge of oral and written language); syntactic (language structure) cues (e.g., word order and the relationship between words, language patterns, punctuation); graphophonic (phonological and graphic) cues (e.g., familiar words within larger words, syllables within larger words, similarities between words with known spelling patterns and unknown words)	
	R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how they can use these and other strategies to improve as readers		

<p>- Use engineering design and computational thinking to solve a design problem.</p> <p>-Use computational thinking in the testing process to improve iterations in the design cycle.</p>	<p>W.1.3 gather information to support ideas for writing, using a variety of strategies and a wide range of print and electronic sources (e.g., produce a plan and timeline for carrying out research tasks; interview people with knowledge of the topic; identify and use graphic and multimedia resources; record sources used and information gathered in a form that makes it easy to understand and retrieve)</p>	X
	<p>W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)</p>	X
	<p>W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)</p>	X
	<p>W.2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies (e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)</p>	X
	<p>W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)</p>	X
	<p>W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)</p>	X
	<p>W.3.4 use punctuation appropriately to communicate their intended meaning in more complex writing forms, including forms specific to different subjects across the curriculum, with a focus on the use of: commas to separate introductory phrases from the main part of a sentence and to separate words, phrases, and clauses in a series; quotation marks to distinguish words being discussed as words and to indicate titles; ellipses (...) and dashes to indicate sentence breaks, ambiguities, or parenthetical statements</p>	X
	<p>W.3.5 use parts of speech correctly to communicate their meaning clearly, with a focus on subject/verb agreement and the use of nouns, pronouns, adjectives, adverbs, and prepositions</p>	X
	<p>W.3.8 produce pieces of published work to meet identified criteria based on the expectations (e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)</p>	X
<p>M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)</p>	X	

Building and Programming A Basic Robot			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p><u>Inside a Robot Lesson 1</u></p> <ul style="list-style-type: none"> - Discover what robot is and how are they used in industry. - Discover the parts of a <i>FIRST</i> Tech Challenge robot and how its technology is transferrable to the workforce. - Decompose a robot into how it can plan, sense, and act and the relationship of its systems and distinctions that allow it to achieve a task. - Develop design criteria for your robot using the Engineering Design Process. <p><u>Chassis and Drive System Lesson 2</u></p> <ul style="list-style-type: none"> - Discover different types of chassis configurations and how they achieve different functions. - Discover principles of speed, torque, the center of gravity, and structural integrity. - Experiment with principles of chassis speed, torque, and center of gravity using the robot physics lab. - Use understanding the problem, brainstorming, and decision-making to determine a chassis design. - Build a robot chassis that best meets your design criteria. <p><u>Electrical Wiring and Configuration Lesson 3</u></p> <ul style="list-style-type: none"> - Explore basic electrical theory and its importance in wiring the robot. 	Oral Communication	<p>O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)</p>	X
		<p>O.1.2 demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a wide variety of situations, including work in groups (e.g., follow the conversation and make relevant contributions in a group discussion; express interest in what is being said by commenting and questioning)</p>	X
		<p>O.1.3 identify a variety of listening comprehension strategies and use them appropriately before, during, and after listening in order to understand and clarify the meaning of increasingly complex and challenging oral texts (e.g., use background knowledge about the structure of oral texts such as debates, interviews, speeches, monologues, lectures, and plays to make predictions and identify important ideas while listening; ask questions for clarification or further information; use a range of note-taking strategies to keep track of or summarize important points; use self-questioning to monitor understanding of what is being said)</p>	X
		<p>O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)</p>	X
		<p>O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)</p>	X
		<p>O.1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations</p>	X
		<p>O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)</p>	X
		<p>O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)</p>	X
		<p>O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills</p>	X
		<p>O.3.2 identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills</p>	X
		<p>R.1.1 read a wide variety of increasingly complex or difficult texts from diverse cultures, including literary texts (e.g., short stories, novels, poetry, essays, science fiction, memoirs, scripts, satire), graphic texts (e.g., graphs and graphic organizers, charts and tables, surveys, maps, spreadsheets), and informational texts (e.g., essays, Canadian and global print and online sources, electronic texts, textbooks, dictionaries, thesauri, websites, transcripts)</p>	X

<ul style="list-style-type: none"> - Decompose the robot hardware and its importance in robot communication. - Wire a robot using a wiring diagram and preventative measures to limit electrostatic discharge on the robot. - Establish wireless communication pathways between the robot and the robot controller. - Configure the hardware according to the electrical diagram using consistent naming conventions. - Use a given template in the IDE to test configuration and wiring. Programming Lesson 4 - Apply computational thinking to plan algorithms using pseudocode and flow charts. - Develop algorithms to control motors, servos, and sensors with increased program flow. - Learn how abstraction occurs in programming tools and how it can help you troubleshoot and understand problems. - Use programming templates to program your robot in Driver Controlled Mode. - Develop a basic algorithm for autonomous programming: drive and park. <p>Manipulators Lesson 5</p> <ul style="list-style-type: none"> - Explore what a manipulator is. - Understand how to choose an actuator. - Choose an actuator to complete a task. 	Reading		
		R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)	X
		R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations	X
		R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them	X
		R.2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir (e.g., the author’s personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative), graphic texts such as a map (e.g., the different colours for land and water help readers understand what geographical features they are looking at), and informational texts such as a magazine article (e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)	X
		R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and “Works Cited” or “References” lists help readers locate information and understand its context)	X
		R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)	X
		R.3.2 predict the meaning of and rapidly solve unfamiliar words using different types of cues, including: semantic (meaning) cues (e.g., base words, prefixes, suffixes, phrases, sentences, and visuals that activate existing knowledge of oral and written language); syntactic (language structure) cues (e.g., word order and the relationship between words, language patterns, punctuation); graphophonic (phonological and graphic) cues (e.g., familiar words within larger words, syllables within larger words, similarities between words with known spelling patterns and unknown words)	X
	R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how they can use these and other strategies to improve as readers	X	
	Writing	R.4.2 explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read	X
		W.1.3 gather information to support ideas for writing, using a variety of strategies and a wide range of print and electronic sources (e.g., produce a plan and timeline for carrying out research tasks; interview people with knowledge of the topic; identify and use graphic and multimedia resources; record sources used and information gathered in a form that makes it easy to understand and retrieve)	X
		W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)	X
		W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)	X
		W.2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies (e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute	x

<p>- Use a gear ratio to affect torque and speed to achieve a task. - Utilize Engineering Notebook Templates to improve written communication as a team.</p> <p><i>Application of creating graphs and tables, and mathematical concepts should be focused as an expectation in the Engineering Notebook.</i></p>	<p>words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)</p>	
	<p>W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)</p>	
	<p>W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)</p>	
	<p>W.3.4 use punctuation appropriately to communicate their intended meaning in more complex writing forms, including forms specific to different subjects across the curriculum, with a focus on the use of: commas to separate introductory phrases from the main part of a sentence and to separate words, phrases, and clauses in a series; quotation marks to distinguish words being discussed as words and to indicate titles; ellipses (...) and dashes to indicate sentence breaks, ambiguities, or parenthetical statements</p>	
	<p>W.3.5 use parts of speech correctly to communicate their meaning clearly, with a focus on subject/verb agreement and the use of nouns, pronouns, adjectives, adverbs, and prepositions</p>	
	<p>W.3.8 produce pieces of published work to meet identified criteria based on the expectations (e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)</p>	
	<p>M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)</p>	
<p>M.2.2 identify the conventions and techniques used in a variety of media forms and explain how they help convey meaning and influence or engage the audience (e.g., website conventions: home pages provide users with a convenient preview of the types of information available; website techniques: “sidebars” with inviting audio/video elements entice viewers to browse and explore new topics that might not have been their first priority)</p>		

Designing for the Game			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p>Game Plan Lesson 1 -Explore the components of a <i>FIRST</i>® Tech Challenge Game. - Understand where to find details that are abstracted in the Game Rules. - Explore details of the game using measurements and algorithms. - Brainstorm ideas for competing in the game. - Use a decision matrix to determine a game plan</p> <p>Robot Plan Lesson 2 - Brainstorm ideas to achieve the robot actions determined in your game strategy. - Research ideas to understand processes others have used to achieve similar strategies. -Use the physics lab to test out ideas to achieve the game strategy. - Develop prototypes from the ideas. -Test prototypes to gain an understanding of system development that will be needed to achieve the game strategy</p> <p><i>Instruction of the math standards may not be</i></p>	Oral Communication	O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)	X
		O.1.2 demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a wide variety of situations, including work in groups (e.g., follow the conversation and make relevant contributions in a group discussion; express interest in what is being said by commenting and questioning)	X
		O.1.3 identify a variety of listening comprehension strategies and use them appropriately before, during, and after listening in order to understand and clarify the meaning of increasingly complex and challenging oral texts (e.g., use background knowledge about the structure of oral texts such as debates, interviews, speeches, monologues, lectures, and plays to make predictions and identify important ideas while listening; ask questions for clarification or further information; use a range of note-taking strategies to keep track of or summarize important points; use self-questioning to monitor understanding of what is being said)	X
		O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)	X
		O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)	X
		O.1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations	X
		O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)	X
		O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)	X
		O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills	X
		O.3.2 identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills	X
		R.1.1 read a wide variety of increasingly complex or difficult texts from diverse cultures, including literary texts (e.g., short stories, novels, poetry, essays, science fiction, memoirs, scripts, satire), graphic texts (e.g., graphs and graphic organizers, charts and tables, surveys, maps, spreadsheets), and informational texts (e.g., essays, Canadian and global print and online sources, electronic texts, textbooks, dictionaries, thesauri, websites, transcripts)	X

<p><i>directly covered in the lesson but are applied in the physics lab. The physics lab is a simulation tool embedded in the content, where students can test variables, visually see the results of changing variables, and use mathematical equations to understand the physics and mathematical calculations involved in the physics behind the design.</i></p> <p><i>Individual mathematical principles can be reinforced and taught using the physics documents for each physics lab.</i></p> <p>Robot Manipulator Physics Robot Speed, Acceleration and Center of Gravity Lab Physics</p> <p><i>The teacher guide contains sample experiments and results.</i></p> <p><i>Application of creating graphs and tables, and mathematical concepts should be created as an expectation in the Engineering Notebook students create as part of the documentation of their learning.</i></p>	Reading	R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)	X
		R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations	X
		R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them	X
		R.2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir (e.g., the author's personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative), graphic texts such as a map (e.g., the different colours for land and water help readers understand what geographical features they are looking at), and informational texts such as a magazine article (e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)	X
		R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and "Works Cited" or "References" lists help readers locate information and understand its context)	X
		R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)	X
		R.3.2 predict the meaning of and rapidly solve unfamiliar words using different types of cues, including: semantic (meaning) cues (e.g., base words, prefixes, suffixes, phrases, sentences, and visuals that activate existing knowledge of oral and written language); syntactic (language structure) cues (e.g., word order and the relationship between words, language patterns, punctuation); graphophonic (phonological and graphic) cues (e.g., familiar words within larger words, syllables within larger words, similarities between words with known spelling patterns and unknown words)	X
		R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how they can use these and other strategies to improve as readers	X
	R.4.2 explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read	X	
	Writing	W.1.3 gather information to support ideas for writing, using a variety of strategies and a wide range of print and electronic sources (e.g., produce a plan and timeline for carrying out research tasks; interview people with knowledge of the topic; identify and use graphic and multimedia resources; record sources used and information gathered in a form that makes it easy to understand and retrieve)	X
		W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)	X
		W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)	X
		W.2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies (e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)	X

		W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)	X	
		W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)	X	
		W.3.4 use punctuation appropriately to communicate their intended meaning in more complex writing forms, including forms specific to different subjects across the curriculum, with a focus on the use of: commas to separate introductory phrases from the main part of a sentence and to separate words, phrases, and clauses in a series; quotation marks to distinguish words being discussed as words and to indicate titles; ellipses (...) and dashes to indicate sentence breaks, ambiguities, or parenthetical statements	X	
		W.3.5 use parts of speech correctly to communicate their meaning clearly, with a focus on subject/verb agreement and the use of nouns, pronouns, adjectives, adverbs, and prepositions	X	
		W.3.8 produce pieces of published work to meet identified criteria based on the expectations (e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)	X	
		W.4.1 identify a variety of strategies they used before, during, and after writing, explain which ones were most helpful, and suggest future steps they can take to improve as writers (e.g., use a three-column reflection journal to monitor the writing process: What I learned/How I learned it/How I can use it)	X	
		W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers	X	
		W.4.3 select pieces of writing that they think reflect their growth and competence as writers and explain the reasons for their choice	X	
		Media Literacy	M.1.2 interpret increasingly complex or difficult media texts, using overt and implied messages as evidence for their interpretations (e.g., compare the coverage of a lead story in a morning newspaper to the coverage of that story on the evening news; compare the order in which news stories are reported on two different television channels and suggest reasons for the differences; compare the treatment of a historical figure in a movie to his or her treatment in a print biography)	X
			M.1.6 identify who produces various media texts and determine the commercial, ideological, political, cultural, and/or artistic interests or perspectives that the texts may involve (e.g., a music company's interest in a recording may be different from that of the artist; the company that produces a video game and the game's creator may have different views on how the game should be promoted)	X
M.2 identify some media forms and explain how the conventions and techniques associated with them are used to create meaning;	X			

Machines and Mechanisms			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p>Simple Machines Lesson 1</p> <ul style="list-style-type: none"> - Explore simple and compound machines and how they are used in robot manipulators. - Understand how forces transfer to motion and increase machine efficiency. - Consider the scalar and vector forces that affect how manipulators accomplish work. - Design a manipulator, and analyze the forces involved. Include essential calculations of the manipulator to achieve the desired output. <p>Robot Manipulator Physics Robot Speed, Acceleration and Center of Gravity Lab Physics</p> <p>Levers, Cams and Linkages Lesson 2</p> <ul style="list-style-type: none"> - Explore ways you can transform motion and develop mechanisms with linkages and cams. - Understand degrees of freedom and geometry when designing mechanisms that involve linkages. - Discover linkages from history and how they are used to transform motion. - Analyze your team game strategy and robot and determine if linkages and cams can increase the efficiency of your robot. - Prototype linkages and cams that could help you achieve your game strategy. <p>Conveyance, Intakes, and Object Trajectory Lesson 3</p> <ul style="list-style-type: none"> - Explore how machines and mechanisms in the industry gather objects and understand important design principles to an intake mechanism. 	Oral Communication	O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)	X
		O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)	X
		O.1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations	X
		O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)	X
		O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)	X
		O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)	X
	Reading	O.3 reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations.	X
		O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills	X
		R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)	X
		R.1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea (e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)	x

<ul style="list-style-type: none"> - Discover design principles needed for intake or shooting systems. - Explore ways to use the REV parts to develop intakes and shooters. - Explore ways to expand your kit of parts with 3D printing and other supplies you might have access to. - Experiment with trajectory, speed, and velocity to propel objects. <p>Linear Motion Lesson 4</p> <ul style="list-style-type: none"> - Know how to calculate mechanical advantage for a pulley system. - Apply your knowledge of calculating speed to a pulley system. - Gain a better understanding of how to design linear slides and pulley systems. - Understand different ways of achieving linear motion through worm gears and rack and pinions. 		<p>R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations</p>	X
		<p>R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them</p>	X
		<p>R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a “before-and-after” comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)</p>	X
		<p>R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and “Works Cited” or “References” lists help readers locate information and understand its context)</p>	X
		<p>R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)</p>	X
		<p>R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how they can use these and other strategies to improve as readers</p>	X
		<p>R.4.2 explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read</p>	X
	Writing	<p>W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)</p>	X
		<p>W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)</p>	X
		<p>W.3.1 spell familiar words correctly (e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)</p>	X
		<p>W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)</p>	X
		<p>W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)</p>	X
		<p>W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers</p>	X

	Media Literacy	M.1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts (e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media’s coverage of a social or environmental issue over a two-week period)	X
		M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)	X
		M.3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques (e.g., a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character, a one-minute video advertising a class fund-raising project, a website based on the content of a unit of study, a report on school sports events to be presented during morning announcements, magazine advertisements for a particular product, aimed at different age groups among the students in the school, an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper, a public-service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying, a storyboard for a video of a favourite song that is not available as a video)	X

Improving through Iteration I			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p>Iteration and the Product Life Cycle Lesson 1</p> <ul style="list-style-type: none"> - Explore problem-solving strategies such as improving reliability, functionality, and craftsmanship. - Explore how increasing the functionality and optimality of a design can increase reliability. - Use design criteria to evaluate project needs and priorities for improvement. - Understand productive struggle and the product life cycle and its effect on the design and iteration process. - Use design criteria and project management to make robot improvements and track those improvements. <p>Mechanism Improvement Lesson 2</p> <ul style="list-style-type: none"> - Explore machines that operate with reliability and precision. - Research ways that other mechanisms in the industry complete similar tasks. - Identify the shortest path for the object to be transported from point A to point B. - Prototype and improve your mechanism design. 	Oral Communication	<p>O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)</p>	X
		<p>O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)</p>	X
		<p>O.1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations</p>	X
		<p>O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)</p>	X
		<p>O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)</p>	X
		<p>O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)</p>	X
		<p>O.3 reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations.</p>	X
		<p>O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills</p>	X
	Reading	<p>R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)</p>	X
		<p>R.1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea (e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)</p>	x
		<p>R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations</p>	X

<p>Algorithm Improvement Lesson 3</p> <ul style="list-style-type: none"> - Explore problem-solving strategies such as improving reliability, functionality, and craftsmanship. - Explore how increasing the functionality and optimality of a design can increase reliability. - Use design criteria to evaluate project needs and priorities for improvement. - Understand productive struggle and the product life cycle and its effect on the design and iteration process. - Use design criteria and project management to make robot improvements and track those improvements. 		<p>R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them</p>	X
		<p>R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a “before-and-after” comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)</p>	X
		<p>R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and “Works Cited” or “References” lists help readers locate information and understand its context)</p>	X
		<p>R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)</p>	X
		<p>R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how they can use these and other strategies to improve as readers</p>	X
		<p>R.4.2 explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read</p>	X
	Writing	<p>W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)</p>	X
		<p>W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)</p>	X
		<p>W.3.1 spell familiar words correctly (e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)</p>	X
		<p>W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)</p>	X
		<p>W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)</p>	X
		<p>W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers</p>	X
	Media Literacy	<p>M.1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts (e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media’s coverage of a social or environmental issue over a two-week period)</p>	X
		<p>M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)</p>	X

		<p>M.3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques (e.g., a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character, a one-minute video advertising a class fund-raising project, a website based on the content of a unit of study, a report on school sports events to be presented during morning announcements, magazine advertisements for a particular product, aimed at different age groups among the students in the school, an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper, a public-service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying, a storyboard for a video of a favourite song that is not available as a video)</p>	X
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Project Sprints and Competition			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p>Conducting a Project Management Sprint Lesson 1 - Understand and apply the process of a project management sprint. - Use a time crunch with deadlines to tackle many tasks quickly. - Identify priorities for completion. - Monitor and ensure that we make progress. - Use workforce skills to prepare for our competition day.</p> <p>Communication and Presentation Lesson 2 - Explore presentation elements including an elevator pitch, business pitch, and bringing an idea to an audience.</p>	Oral Communication	<p>O.1.3 identify a variety of listening comprehension strategies and use them appropriately before, during, and after listening in order to understand and clarify the meaning of increasingly complex and challenging oral texts (e.g., use background knowledge about the structure of oral texts such as debates, interviews, speeches, monologues, lectures, and plays to make predictions and identify important ideas while listening; ask questions for clarification or further information; use a range of note-taking strategies to keep track of or summarize important points; use self-questioning to monitor understanding of what is being said)</p>	X
		<p>O.1.9 identify a wide variety of presentation strategies used in oral texts, evaluate their effectiveness, and suggest other strategies that might have been as effective or more so (e.g., compare two oral presentations, with a focus on the effectiveness of the presentation strategies used by each speaker)</p>	X
		<p>O.2.1 identify a range of purposes for speaking in a variety of situations, both straightforward and more complex, and explain how the purpose and intended audience might influence the choice of speaking strategies (e.g., to introduce a speaker; to support the resolution in a debate; to dramatize a favourite poem; to explain a complex procedure to an individual or group; to work towards the solution to a problem with a partner)</p>	X
		<p>O.2.2 demonstrate an understanding of appropriate speaking behaviour in most situations, using a variety of speaking strategies and adapting them to suit the purpose and audience (e.g., paraphrase different points of view on an issue to clarify alternative perspectives; affirm the contributions of others before responding; avoid making highly personal remarks in public or in formal situations)</p>	X
		<p>O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)</p>	X
		<p>O.2.6 identify a variety of non-verbal cues, including facial expression, gestures, and eye contact, and use them in oral communications, appropriately and with sensitivity towards cultural differences, to help convey their meaning (e.g., rehearse and use hand gestures and increased volume to emphasize points during a formal presentation)</p>	X
		<p>O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)</p>	X

<p>- Explore things you should and shouldn't do in a presentation.</p> <p>- Understand how to identify your strengths and weaknesses.</p> <p>- Explore ways to communicate about strengths and weaknesses.</p> <p>- Develop and present your team to an audience.</p> <p>Learning Portfolio Lesson 3</p> <p>-Identify and communicate about your career and technical skills using your strengths.</p> <p>- Develop a portfolio that demonstrates the skills you have acquired in the course.</p> <p>- Gain feedback from your team on how well you have communicated your skills.</p>		O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills	X
	Reading	R.1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea (e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)	X
		R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations	X
		R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them	X
		R.1.7 analyse a variety of texts, including complex or difficult texts, and explain how the various elements in them contribute to meaning and influence the reader's reaction (e.g., narrative: rising action holds attention and creates suspense; report on an investigation: the opening paragraph tells the reader about the purpose, goals, and audience for the report)	X
		R.2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir (e.g., the author's personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative), graphic texts such as a map (e.g., the different colours for land and water help readers understand what geographical features they are looking at), and informational texts such as a magazine article (e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)	X
		R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a "before-and-after" comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)	X
		R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and "Works Cited" or "References" lists help readers locate information and understand its context)	X
		R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)	X
		R.3.3 read appropriate texts with expression and confidence, adjusting reading strategies and reading rate to match the form and purpose (e.g., orally read to entertain a younger class, using suitable emphasis, intonation, and phrasing)	X
		R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how they can use these and other strategies to improve as readers	X
	R.4.2 explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read	X	
	Writing	W.1.1 identify the topic, purpose, and audience for more complex writing forms (e.g., a personal memoir about the school experience to share with classmates, family, and friends at graduation; a report on a topic of current interest in the style of a newspaper article, including headlines, for a school or community newspaper; a campaign flyer or brochure to promote a candidate for school government)	X
		W.1.3 gather information to support ideas for writing, using a variety of strategies and a wide range of print and electronic sources (e.g., produce a plan and timeline for carrying out research tasks; interview people with knowledge of the topic; identify and use graphic and multimedia resources; record sources used and information gathered in a form that makes it easy to understand and retrieve)	X

		W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)	X	
		W.1.5 identify and order main ideas and supporting details and group them into units that could be used to develop a summary, a debate, or a report of several paragraphs, using a variety of strategies (e.g., making jot notes; making sketch board outlines of a procedure or series of events) and organizational patterns (e.g., combined/multiple orders such as order of importance and cause and effect)	X	
		W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)	X	
		W.2.2 establish a distinctive voice in their writing appropriate to the subject and audience, (e.g., use emotive language to persuade the audience to share their feelings, and explain the effect they think it will have on the audience)	X	
			W.2.4 vary sentence types and structures for different purposes (e.g., to alter the pace or mood), with a focus on using a range of relative pronouns (e.g., who, which), subordinate conjunctions (e.g., whenever, because, although), and both the active and passive voice	X
	Writing		W.2.5 identify their point of view and other possible points of view, evaluate other points of view, and find ways to respond to other points of view, if appropriate	X
			W.2.6 identify elements in their writing that need improvement, selectively using feedback from the teacher and peers, with a focus on depth of content and appropriateness of tone	X
			W.2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies (e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)	X
			W.2.8 produce revised draft pieces of writing to meet identified criteria based on the expectations (e.g., adequate development of information and ideas, logical organization, appropriate use of form and style, appropriate use of conventions)	X
			W.3.1 spell familiar words correctly (e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)	X
			W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)	X
			W.3.6 proofread and correct their writing using guidelines developed with peers and the teacher (e.g., an editing checklist specific to the writing task)	X
			W.3.7 use a wide range of appropriate elements of effective presentation in the finished product, including print, script, different fonts, graphics, and layout (e.g., use legible printing and cursive writing; use an imaginative text layout, drawings, and a table of contents in a class poetry anthology for the school library; use a spreadsheet to display detailed specific information)	X
		W.3.8 produce pieces of published work to meet identified criteria based on the expectations (e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)	X	
		W.4.1 identify a variety of strategies they used before, during, and after writing, explain which ones were most helpful, and suggest future steps they can take to improve as writers (e.g., use a three-column reflection journal to monitor the writing process: What I learned/How I learned it/How I can use it)	X	
	W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers	X		

		W.4.3 select pieces of writing that they think reflect their growth and competence as writers and explain the reasons for their choice	X
	Media Literacy	M.1.1 explain how a variety of media texts address their intended purpose and audience (e.g., this stage production based on a popular novel uses music and lighting to enhance the original and appeal to its fans; this commercial for a sports car uses fast-paced editing and rock music to appeal to the target audience – young, single men and women)	X
		M.1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts (e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media’s coverage of a social or environmental issue over a two-week period)	X
		M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)	X
		M.2.2 identify the conventions and techniques used in a variety of media forms and explain how they help convey meaning and influence or engage the audience (e.g., website conventions: home pages provide users with a convenient preview of the types of information available; website techniques: “sidebars” with inviting audio/video elements entice viewers to browse and explore new topics that might not have been their first priority)	X
		M.3.1 explain why they have chosen the topic for a media text they plan to create (e.g., a poster advertising a class fund-raising campaign to appeal to local parent groups, businesses, or service organizations), and identify challenges they may face in engaging and/or influencing their intended audience	X
		M.3.2 identify an appropriate form to suit the purpose and audience for a media text they plan to create (e.g., a multimedia presentation about their class or grade, to be presented to parents during graduation ceremonies) and explain why it is an appropriate choice	X
		M.3.3 identify conventions and techniques appropriate to the form chosen for a media text they plan to create, and explain how they will use the conventions and techniques to help communicate their message (e.g., conventions in advertisements for a product to appeal to different age groups among the students: text, images, “free offer” promotional gimmicks; techniques: use of age-appropriate content in all elements of the advertisement)	X
		M.4 reflect on and identify their strengths as media interpreters and creators, areas for improvement, and the strategies they found most helpful in understanding and creating media texts.	X
		M.4.1 identify what strategies they found most helpful in making sense of and creating media texts, and explain how these and other strategies can help them improve as media viewers/listeners/producers	X

Industry 4.0 and Your Community			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
Industry 4.0 and Your Robot Lesson 1 - Understand Industry 4.0 technology and where I can find it in my daily life. - Discover big data and how it influences the ability to increase innovation. - Discover the Internet of Things and how it could change your future career. - Understand what artificial intelligence and machine learning are and how they apply to your robot. - Consider how you could use augmented reality to improve your own education	Oral Communication	O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)	X
		O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)	X
		O.1.7 analyse a variety of complex or challenging oral texts in order to identify the strategies that have been used to inform, persuade, or entertain, and evaluate the effectiveness of those strategies (e.g., compare the tone and the ideas emphasized in speeches about non-smoking regulations by a tobacco company representative and a person with asthma and suggest how each approach would influence an audience)	X
		O.1.9 identify a wide variety of presentation strategies used in oral texts, evaluate their effectiveness, and suggest other strategies that might have been as effective or more so (e.g., compare two oral presentations, with a focus on the effectiveness of the presentation strategies used by each speaker)	X
		O.2 use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;	X
		O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)	X
		O.2.4 use appropriate words, phrases, and terminology from the full range of their vocabulary, including inclusive and non-discriminatory language, and a range of stylistic devices, to communicate their meaning effectively and engage the interest of their intended audience (e.g., use imagery, figurative language such as similes and analogies, and other stylistic elements such as idioms and onomatopoeia to evoke a particular mood in a dramatic monologue or an appeal for support)	X

<p>and collaboration on your robot.</p> <p>Industry 4.0 and Your Community Lesson 2</p> <ul style="list-style-type: none"> - Explore audiences to share your impact with. - Brainstorm the best method to share your learning in your community. - Develop a project management plan for sharing your learning. <p>Community Impact Project</p> <ul style="list-style-type: none"> - Explore ethical concerns around Industry 4.0. - Explore ways you can make an impact on others. - Develop a plan to make an impact in your community through a project, awareness, or education of Industry 4.0 and the future. <p><i>To fully address the Media standards consider having</i></p>		<p>O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)</p>	X
		<p>O.3.2 identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills</p>	X
	Reading	<p>R.1.1 read a wide variety of increasingly complex or difficult texts from diverse cultures, including literary texts (e.g., short stories, novels, poetry, essays, science fiction, memoirs, scripts, satire), graphic texts (e.g., graphs and graphic organizers, charts and tables, surveys, maps, spreadsheets), and informational texts (e.g., essays, Canadian and global print and online sources, electronic texts, textbooks, dictionaries, thesauri, websites, transcripts)</p>	X
	Reading	<p>R.1.2 identify a variety of purposes for reading and choose increasingly complex or difficult reading materials appropriate for those purposes (e.g., several online or print articles by the same author to identify consistency or change in the author’s point of view; websites for information on a topic from different sources; stories from different cultures, including Aboriginal cultures, to compare treatments of similar themes)</p>	X
	Reading	<p>R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)</p>	X
	Reading	<p>R.1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea (e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)</p>	X
	Reading	<p>R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations</p>	X
	Reading	<p>R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them</p>	X
	Reading	<p>R.1.7 analyse a variety of texts, including complex or difficult texts, and explain how the various elements in them contribute to meaning and influence the reader’s reaction (e.g., narrative: rising action holds attention and creates suspense; report on an investigation: the opening paragraph tells the reader about the purpose, goals, and audience for the report)</p>	X
	Reading	<p>R.1.8 evaluate the effectiveness of a text based on evidence taken from that text</p>	X
Reading	<p>R.1.9 identify the point of view presented in texts, including increasingly complex or difficult texts; give evidence of any biases they may contain; and suggest other possible perspectives (e.g., determine whether an environmental argument should include an economic perspective or an economic argument should include an environmental perspective)</p>	X	
Reading	<p>R.2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir (e.g., the author’s personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative), graphic texts such as a map (e.g., the different colours for land and water help readers understand what geographical features they are looking at), and informational texts such as a magazine article (e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)</p>	x	
Reading	<p>R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a “before-and-after” comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)</p>	X	

students analyzed bias and media		R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)	X
		R.3.2 predict the meaning of and rapidly solve unfamiliar words using different types of cues, including: semantic (meaning) cues (e.g., base words, prefixes, suffixes, phrases, sentences, and visuals that activate existing knowledge of oral and written language); syntactic (language structure) cues (e.g., word order and the relationship between words, language patterns, punctuation); graphophonic (phonological and graphic) cues (e.g., familiar words within larger words, syllables within larger words, similarities between words with known spelling patterns and unknown words)	X
		W.1.1 identify the topic, purpose, and audience for more complex writing forms (e.g., a personal memoir about the school experience to share with classmates, family, and friends at graduation; a report on a topic of current interest in the style of a newspaper article, including headlines, for a school or community newspaper; a campaign flyer or brochure to promote a candidate for school government)	X
		W.1.2 generate ideas about more challenging topics and identify those most appropriate to the purpose	X
	Writing	W.1.3 gather information to support ideas for writing, using a variety of strategies and a wide range of print and electronic sources (e.g., produce a plan and timeline for carrying out research tasks; interview people with knowledge of the topic; identify and use graphic and multimedia resources; record sources used and information gathered in a form that makes it easy to understand and retrieve).	X
		W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts).	X
		W.1.5 identify and order main ideas and supporting details and group them into units that could be used to develop a summary, a debate, or a report of several paragraphs, using a variety of strategies (e.g., making jot notes; making sketch board outlines of a procedure or series of events) and organizational patterns (e.g., combined/multiple orders such as order of importance and cause and effect).	X
		W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)	X
		W.2.1 write complex texts of a variety of lengths using a wide range of forms (e.g., a memoir of a significant Canadian; a report comparing the economies of two nations and explaining how a new industry might affect each nation's economy; briefing notes for an oral debate outlining both sides of an argument, including appeals to both logic and emotion; a narrative in the style of a particular author, adding to or extending a text by that author; an original satirical, science-fiction, or realistic fiction piece modelled on the structures and conventions of the genre; a free verse or narrative poem, or a limerick)	X
		W.2.5 identify their point of view and other possible points of view, evaluate other points of view, and find ways to respond to other points of view, if appropriate	X
		W.2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies (e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)	X
		W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)	X
		W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)	X

		W.3.4 use punctuation appropriately to communicate their intended meaning in more complex writing forms, including forms specific to different subjects across the curriculum, with a focus on the use of: commas to separate introductory phrases from the main part of a sentence and to separate words, phrases, and clauses in a series; quotation marks to distinguish words being discussed as words and to indicate titles; ellipses (...) and dashes to indicate sentence breaks, ambiguities, or parenthetical statements	X
		W.3.8 produce pieces of published work to meet identified criteria based on the expectations (e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)	X
		W.4.1 identify a variety of strategies they used before, during, and after writing, explain which ones were most helpful, and suggest future steps they can take to improve as writers (e.g., use a three-column reflection journal to monitor the writing process: What I learned/How I learned it/How I can use it)	X
		M.1.2 interpret increasingly complex or difficult media texts, using overt and implied messages as evidence for their interpretations (e.g., compare the coverage of a lead story in a morning newspaper to the coverage of that story on the evening news; compare the order in which news stories are reported on two different television channels and suggest reasons for the differences; compare the treatment of a historical figure in a movie to his or her treatment in a print biography)	X
	Media Literacy	M.1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts (e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media's coverage of a social or environmental issue over a two-week period)	X
		M.1.4 explain why different audiences (e.g., with respect to gender, age, culture, race, income level) might have different responses to a variety of media texts (e.g., predict how a member of a particular age/gender/ ethnocultural/socio-economic group might react to a controversial article in a print or online news magazine and give reasons for their prediction)	X
		M.1.5 demonstrate understanding that different media texts reflect different points of view and that some texts reflect multiple points of view (e.g., a television broadcast of a sports game presents the views of fans, the announcers, the sponsors, and the television network; different media texts represent people of different age, gender, income level, or ethnocultural background differently, communicating obvious or subtle messages that might indicate bias or stereotyping; different points of view are often presented in a news report of a conflict)	X
		M.1.6 identify who produces various media texts and determine the commercial, ideological, political, cultural, and/or artistic interests or perspectives that the texts may involve (e.g., a music company's interest in a recording may be different from that of the artist; the company that produces a video game and the game's creator may have different views on how the game should be promoted).	X
		M.2.2 identify the conventions and techniques used in a variety of media forms and explain how they help convey meaning and influence or engage the audience (e.g., website conventions: home pages provide users with a convenient preview of the types of information available; website techniques: "sidebars" with inviting audio/video elements entice viewers to browse and explore new topics that might not have been their first priority)	X
		M.3.1 explain why they have chosen the topic for a media text they plan to create (e.g., a poster advertising a class fund-raising campaign to appeal to local parent groups, businesses, or service organizations), and identify challenges they may face in engaging and/or influencing their intended audience	X
		M.3.2 identify an appropriate form to suit the purpose and audience for a media text they plan to create (e.g., a multimedia presentation about their class or grade, to be presented to parents during graduation ceremonies) and explain why it is an appropriate choice.	X
		M.3.3 identify conventions and techniques appropriate to the form chosen for a media text they plan to create, and explain how they will use the conventions and techniques to help communicate their message (e.g., conventions in advertisements for a product to appeal to different age groups among the students: text, images, "free offer" promotional gimmicks; techniques: use of age-appropriate content in all elements of the advertisement)	X

		<p>M.3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques (e.g., a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character, a one-minute video advertising a class fund-raising project, a website based on the content of a unit of study, a report on school sports events to be presented during morning announcements, magazine advertisements for a particular product, aimed at different age groups among the students in the school, an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper, a public-service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying, a storyboard for a video of a favourite song that is not available as a video)</p>	X
		<p>M.4.1 identify what strategies they found most helpful in making sense of and creating media texts, and explain how these and other strategies can help them improve as media viewers/listeners/producers</p>	X

Sensors, Machine Learning, and Java

Lesson Outcomes	Strand	Specific Expectations	Addressed
<p>Sensors and Feedback Lesson 1</p> <ul style="list-style-type: none"> - Understand touch, color, and encoder capabilities for providing feedback to the robot. - Decompose sensor data to determine how it collects and receives data. - Develop algorithmic thinking through utilizing Boolean data, program flow, and decisions to improve the robot. - Utilize decision trees to understand program flow and decisions that are made. - Develop a robot program that includes increased program flow with compound Boolean data, operators, and functions. <p>Developing Functions and States Lesson 2</p> <ul style="list-style-type: none"> - Explore the machine states and how they provide feedback for robot control. 	Oral Communication	<p>O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)</p>	X
		<p>O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)</p>	X
		<p>O.1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations</p>	X
		<p>O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)</p>	X
		<p>O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)</p>	X
		<p>O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)</p>	X
		<p>O.3 reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations.</p>	X
		<p>O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills</p>	X

<p>- Explore ways of creating abstraction in code through functions.</p> <p>- Use the robot Inertial Measurement Unit to improve robot navigation through functions.</p> <p>- Consider autonomous states of your robot and use abstraction to create functions using states for an autonomous program</p> <p>Developing Robot Machine Learning Lesson 3</p> <p>- Explore decision trees and how they help a robot make decisions.</p> <p>- Understand what machine learning is and the process used to develop machine learning modules.</p> <p>- Discover the prebuilt machine learning models using TensorFlow and Vuforia.</p> <p>- Decompose a machine learning template and use it to perform robot actions.</p> <p>Object-Oriented Programming Lesson 3</p> <p>- Explore how to enable Java to compare your Blocks programs to Java programs.</p> <p>- Explore the syntax of Java programming.</p> <p>- Discover Java as an object-oriented programming environment.</p>	Reading	<p>R.1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea (e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)</p>	X
		<p>R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations</p>	X
		<p>R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them</p>	X
		<p>R.1.7 analyse a variety of texts, including complex or difficult texts, and explain how the various elements in them contribute to meaning and influence the reader’s reaction (e.g., narrative: rising action holds attention and creates suspense; report on an investigation: the opening paragraph tells the reader about the purpose, goals, and audience for the report)</p>	X
		<p>R.2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir (e.g., the author’s personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative), graphic texts such as a map (e.g., the different colours for land and water help readers understand what geographical features they are looking at), and informational texts such as a magazine article (e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)</p>	X
		<p>R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a “before-and-after” comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)</p>	X
		<p>R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and “Works Cited” or “References” lists help readers locate information and understand its context)</p>	X
		<p>R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)</p>	X
		<p>R.3.3 read appropriate texts with expression and confidence, adjusting reading strategies and reading rate to match the form and purpose (e.g., orally read to entertain a younger class, using suitable emphasis, intonation, and phrasing)</p>	X
		<p>R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how they can use these and other strategies to improve as readers</p>	X
	<p>R.4.2 explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read</p>	X	
	Writing	<p>W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)</p>	X
		<p>W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)</p>	X
		<p>W.3.1 spell familiar words correctly (e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)</p>	X
<p>W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words:</p>		X	

- Discover the Java code repository to explore inheritance, classes, methods, and objects. - Use tutorials to develop Java programs for creating an op mode and programming a motor and a sensor.		affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)	
		W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)	X
		W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers	X
	Media Literacy	M.1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts (e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media's coverage of a social or environmental issue over a two-week period)	X
		M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)	X
		M.3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques (e.g., a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character, a one-minute video advertising a class fund-raising project, a website based on the content of a unit of study, a report on school sports events to be presented during morning announcements, magazine advertisements for a particular product, aimed at different age groups among the students in the school, an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper, a public-service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying, a storyboard for a video of a favourite song that is not available as a video)	X

Improving through Iteration II			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p>Mechanism Improvement Lesson 1</p> <ul style="list-style-type: none"> - Explore the path the game object is taking. - Study the physics behind the design. - Research additional manufacturer ways of improving the use of materials. - Consider better fabrication of the design. - Prototype and improve your mechanism design. <p>Algorithm Improvement Lesson 2</p> <ul style="list-style-type: none"> - Explore the steps to add additional hardware and data needed for the hardware. - Identify the data needed for additional hardware and how the data will need to be processed to achieve additional functionality. - Use the engineering design process to understand what will be needed from an algorithm standpoint to add functionality to the robot. <p>Conducting a Project Management Sprint Lesson 3</p> <ul style="list-style-type: none"> - Understand and apply the process of a project management sprint. - Use a time crunch with deadlines to tackle many tasks quickly. - Identify priorities for completion. 	Oral Communication	O.1.1 identify a range of purposes for listening in a variety of situations, formal and informal, and set goals appropriate to specific listening tasks (e.g., to evaluate the effectiveness of the arguments on both sides of a class debate on an environmental, social, or global issue; to respond to feedback in peer conferences and student/teacher conferences)	X
		O.1.4 demonstrate an understanding of the information and ideas in increasingly complex and difficult oral texts in a variety of ways (e.g., compare views about an oral text with two other classmates and prepare a joint summary to present to the class; cite details from an oral text to support their opinions about it in a small-group discussion; use visual art, music, or drama to represent important ideas in an oral text)	X
		O.1.5 develop and explain interpretations of oral texts using the language of the text and oral and visual cues to support their interpretations	X
		O.1.6 extend understanding of oral texts, including increasingly complex or difficult texts, by connecting, comparing, and contrasting the ideas and information in them to their own knowledge, experience, and insights; to other texts, including print and visual texts; and to the world around them (e.g., respond in role as a character from an oral text while being interviewed by another student; discuss similarities and differences between oral and print texts on the same topic, focusing on specific elements such as the accuracy and relevance of information; debate the wisdom of the choices made by a historical personage depicted in an oral biography, based on ideas about what their own choices might have been)	X
		O.2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience (e.g., combine logic with an appeal to emotion in a charity fund-raising speech; use a cause-and-effect structure in a report on the rise of a political movement or the emergence of a contentious Aboriginal issue)	X
		O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)	X
		O.3 reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations.	X
	O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills	x	
	Reading	R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)	X
		R.1.4 demonstrate understanding of increasingly complex and difficult texts by summarizing important ideas and explaining how the details support the main idea (e.g., theme or argument and supporting evidence in reviews, essays, plays, poems; key information and related data in public documents, online and print reference articles, manuals, surveys, graphs, tables and charts, websites, transcripts)	X
		R.1.5 develop and explain interpretations of increasingly complex or difficult texts using stated and implied ideas from the texts to support their interpretations	x
		R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them	X

- Monitor and ensure that we make progress. - Use workforce skills to prepare for our competition day.		R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a “before-and-after” comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)	X
		R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and “Works Cited” or “References” lists help readers locate information and understand its context)	X
		R.3.1 automatically read and understand most words in a wide range of reading contexts (e.g., words from grade-level texts; terminology used in discussions and posted in the classroom; words from shared-, guided-, and independent-reading texts, electronic texts, and resource material used in the curriculum subject areas)	X
		R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how they can use these and other strategies to improve as readers	X
		R.4.2 explain, in conversation with the teacher and/or peers or in a reader’s notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read	X
	Writing	W.1.4 sort and classify ideas and information for their writing in a variety of ways that allow them to manipulate information and see different combinations and relationships in their data (e.g., by using electronic graphic organizers, tables, charts)	X
		W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)	X
		W.3.1 spell familiar words correctly (e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)	X
		W.3.2 spell unfamiliar words using a variety of strategies that involve understanding sound-symbol relationships, word structures, word meanings, and generalizations about spelling (e.g., orally emphasize differences in easily confused words: affect/effect, technicality/technically; compare complicated words to words with known letter patterns; use knowledge of the history of a word to help spell it: sheep herder/shepherd; use knowledge of familiar words to spell technical terms)	X
		W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)	X
		W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers	X
		Media Literacy	M.1.3 evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts (e.g., explain how a series of newspaper stories on a controversial issue captured and maintained their interest; explain the similarities and differences in the treatment of a particular topic or theme in different media texts and evaluate the relative effectiveness of the treatments; as a class, evaluate the media’s coverage of a social or environmental issue over a two-week period)
	M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)		
M.3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques (e.g., a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character, a one-minute video advertising a class fund-raising project, a website based on the content of a unit of study, a report on school sports events to be presented during morning announcements, magazine advertisements for a particular product, aimed at different age groups among the students in the school, an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper, a public-	X		

	service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying, a storyboard for a video of a favourite song that is not available as a video)	
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Learning Pathways and Career Exploration			
<i>Lesson Outcomes</i>	Strand	Specific Expectations	Addressed
<p>Learning Pathways Lesson 1</p> <ul style="list-style-type: none"> - Explore team roles on a FIRST® competitive team and their correlation to jobs in different industries. - Learn the benefits of being on a competitive team that can advance regionally and internationally. -Identify how opportunities on a competitive team can help you achieve scholarships, internships, and industry credentials. <p>Résumé Lesson 2</p> <ul style="list-style-type: none"> -Understand the principles of writing a good résumé. -Understand the difference between an entry-level résumé and a professional résumé. - Build your own résumé that demonstrates the impact you make with your workforce and technical skills. 	Oral Communication	O.2.1 identify a range of purposes for speaking in a variety of situations, both straightforward and more complex, and explain how the purpose and intended audience might influence the choice of speaking strategies (e.g., to introduce a speaker; to support the resolution in a debate; to dramatize a favourite poem; to explain a complex procedure to an individual or group; to work towards the solution to a problem with a partner)	X
		O.2.2 demonstrate an understanding of appropriate speaking behaviour in most situations, using a variety of speaking strategies and adapting them to suit the purpose and audience (e.g., paraphrase different points of view on an issue to clarify alternative perspectives; affirm the contributions of others before responding; avoid making highly personal remarks in public or in formal situations)	X
		O.2.7 use a variety of appropriate visual aids (e.g., photographs, multimedia, diagrams, graphs, charts, costumes, props, artefacts) to support and enhance oral presentations (e.g., use a chart to clarify the order of events in a report about a scientific breakthrough; use a video clip from an animated cartoon to show how sound is used to complement the image)	X
		O.3.1 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills	X
		O.3.2 identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills	X
	Reading	R.1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand increasingly complex or difficult texts (e.g., activate prior knowledge on a topic through dialogue or by developing mind maps; use visualization and comparisons with images in other texts or media to clarify impressions of characters, scenes, or concepts; ask questions to monitor and clarify understanding; identify important ideas; synthesize ideas to broaden understanding)	X
		R.1.6 extend understanding of texts, including increasingly complex or difficult texts, by connecting the ideas in them to their own knowledge, experience, and insights, to other texts, and to the world around them	X
		R.1.7 analyse a variety of texts, including complex or difficult texts, and explain how the various elements in them contribute to meaning and influence the reader's reaction (e.g., narrative: rising action holds attention and creates suspense; report on an investigation: the opening paragraph tells the reader about the purpose, goals, and audience for the report)	X
		R.2.1 analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts such as a memoir (e.g., the author's personality and/or special experience of the subject are an important part of the narrative, even if the author is not the subject of the narrative), graphic texts such as a map (e.g., the different colours for land and water help readers understand what geographical features they are looking at), and informational texts such as a magazine article (e.g., sidebars allow minor themes to be developed in detail without interrupting the main narrative)	X
		R.2.2 analyse increasingly complex texts to identify different types of organizational patterns used in them and explain how the patterns help communicate meaning (e.g., a "before-and-after" comparison in an advertisement; time order and cause and effect in an online magazine or newspaper article)	X
		R.2.3 identify a variety of text features and explain how they help communicate meaning (e.g., tree diagrams, tables, end notes, and "Works Cited" or "References" lists help readers locate information and understand its context)	X

Community Impact Project -Identify and communicate about your career and technical skills using your strengths. - Develop a portfolio that demonstrates the skills you have acquired in the course. - Gain feedback from your team on how well you have communicated your skills.		R.4.1 identify the strategies they found most helpful before, during, and after reading and explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how they can use these and other strategies to improve as readers	X
		R.4.2 explain, in conversation with the teacher and/or peers or in a reader's notebook/reflective journal, how their skills in listening, speaking, writing, viewing, and representing help them make sense of what they read	
	Writing	W.1.1 identify the topic, purpose, and audience for more complex writing forms (e.g., a personal memoir about the school experience to share with classmates, family, and friends at graduation; a report on a topic of current interest in the style of a newspaper article, including headlines, for a school or community newspaper; a campaign flyer or brochure to promote a candidate for school government)	X
		W.1.2 generate ideas about more challenging topics and identify those most appropriate to the purpose	X
		W.1.5 identify and order main ideas and supporting details and group them into units that could be used to develop a summary, a debate, or a report of several paragraphs, using a variety of strategies (e.g., making jot notes; making sketch board outlines of a procedure or series of events) and organizational patterns (e.g., combined/multiple orders such as order of importance and cause and effect)	X
		W.1.6 determine whether the ideas and information they have gathered are relevant, appropriate, and sufficiently specific for the purpose, and do more planning and research if necessary (e.g., check for depth and breadth of coverage of the topic)	X
		W.2.2 establish a distinctive voice in their writing appropriate to the subject and audience, (e.g., use emotive language to persuade the audience to share their feelings, and explain the effect they think it will have on the audience)	X
		W.2.3 regularly use vivid and/or figurative language and innovative expressions in their writing (e.g., adjective phrases: The car with the fluorescent red racing stripe; adverb phrases: He walked with the gait of a sailor; specialized vocabulary and terminology; analogies and idioms)	X
		W.2.6 identify elements in their writing that need improvement, selectively using feedback from the teacher and peers, with a focus on depth of content and appropriateness of tone	X
		W.2.7 make revisions to improve the content, clarity, and interest of their written work, using a variety of strategies (e.g., use sticky notes while rereading to record questions and ideas; cut and paste to improve logic of organization; add or substitute words and phrases, including vocabulary from other subject areas; use idioms, figurative language, and rhetorical devices such as analogy to achieve particular effects; adjust sentence length, type, and complexity to suit the audience and purpose; use patterns such as repetition with variations to emphasize important points and hold the attention of the audience)	X
W.2.8 produce revised draft pieces of writing to meet identified criteria based on the expectations (e.g., adequate development of information and ideas, logical organization, appropriate use of form and style, appropriate use of conventions)		X	
W.3.1 spell familiar words correctly (e.g., words from their oral vocabulary, anchor charts, and shared-, guided-, and independent-reading texts; words used regularly in instruction across the curriculum)		X	
W.3.3 confirm spellings and word meanings or word choice using a wide variety of resources appropriate for the purpose (e.g., locate entry words, pronunciation keys, prefixes, and information about word origins in online and print dictionaries, including thematic dictionaries such as a dictionary of synonyms, antonyms, and homonyms, a science dictionary)	X		
W.3.4 use punctuation appropriately to communicate their intended meaning in more complex writing forms, including forms specific to different subjects across the curriculum, with a focus on the use of: commas to separate introductory phrases from the main part of a sentence and to separate words, phrases, and clauses in a series; quotation marks to distinguish words being discussed as words and to indicate titles; ellipses (...) and dashes to indicate sentence breaks, ambiguities, or parenthetical statements	X		
W.3.5 use parts of speech correctly to communicate their meaning clearly, with a focus on subject/verb agreement and the use of nouns, pronouns, adjectives, adverbs, and prepositions	X		
W.3.6 proofread and correct their writing using guidelines developed with peers and the teacher (e.g., an editing checklist specific to the writing task)	X		

		W.3.7 use a wide range of appropriate elements of effective presentation in the finished product, including print, script, different fonts, graphics, and layout (e.g., use legible printing and cursive writing; use an imaginative text layout, drawings, and a table of contents in a class poetry anthology for the school library; use a spreadsheet to display detailed specific information)	X
		W.3.8 produce pieces of published work to meet identified criteria based on the expectations (e.g., adequacy of information and ideas, logic and effectiveness of organization, effective use of form and stylistic elements, appropriate use of conventions, effective presentation)	X
		W.4.2 describe how their skills in listening, speaking, reading, viewing, and representing help in their development as writers	X
		W.4.3 select pieces of writing that they think reflect their growth and competence as writers and explain the reasons for their choice	X
	Media Literacy	M.2.1 explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning (e.g., print advertisements use text, images, colour, different fonts, and different camera angles in a seamless combination to create an effect)	X
		M.3.3 identify conventions and techniques appropriate to the form chosen for a media text they plan to create, and explain how they will use the conventions and techniques to help communicate their message (e.g., conventions in advertisements for a product to appeal to different age groups among the students: text, images, “free offer” promotional gimmicks; techniques: use of age-appropriate content in all elements of the advertisement)	X
		M.3.4 produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques (e.g., a multimedia presentation examining two or more elements of a narrative, such as theme, plot, setting, or character, a one-minute video advertising a class fund-raising project, a website based on the content of a unit of study, a report on school sports events to be presented during morning announcements, magazine advertisements for a particular product, aimed at different age groups among the students in the school, an interview with a family member about his or her cultural heritage for publication in a school or community magazine/newspaper, a public-service announcement on a current issue that is relevant to their fellow students, such as daily physical activity, literacy, or bullying, a storyboard for a video of a favourite song that is not available as a video)	X
		M.4.2 explain how their skills in listening, speaking, reading, and writing help them to make sense of and produce media texts	X