

OVERVIEW

A quick view of the K-12 Cross Curricular Literacy Learning Progressions with a **GRADE SPECIFIC** focus

They highlight what a thinking or communication skill may look like for a proficient student across all learning areas, emphasizing their **CROSS-CURRICULAR** nature.

Each **ASPECT** represents a set of transferrable thinking or communication skills

A proficient student must develop, practice, and demonstrate each aspect to become a Literate Learner

All aspects are important when building Literacy skills

Each **SUB-ASPECT** further defines the transferrable skills within each aspect

The **DESCRIPTOR** is grade specific and describes what proficient student learning looks like at the end of the year/term

NUMERACY LEARNING PROGRESSIONS – GRADE 1 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes personal connections with aspects of the problem personal connections: experiences and prior knowledge	Identifies a significant fact and gathers other information from the problem	Identifies a clearly defined parameter needed to solve the problem parameter: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Recognizes the mathematical competencies and content needed to solve the problem content: refer to Math curriculum	Represents the mathematical problem, using concrete materials and diagrams	Develops a straightforward plan of approach, using prior knowledge and mathematical tools and strategies
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates the scope of the answer scope: e.g., range, size, shape, time	Finds a solution, using play, concrete materials, or models	Compares their solution with those of their teacher and/or peers
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Identifies a reasonable solution in relation to the original problem/scenario	Identifies an alternative approach approach: own approach, peer- or teacher-driven approach	Experiments with a recommended alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents the problem-solving process, using words, numbers, pictures, symbols, and/or manipulatives	Outlines their problem-solving approach	Outlines one problem- solving decision



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – KINDERGARTEN PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes a personal connection with one aspect of the problem personal connection: experiences and prior knowledge	Identifies a significant fact about the problem	Understands that problems have parameters parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Recognizes the mathematical competencies and content needed to solve the problem content: refer to Math curriculum	Represents the mathematical problem, using concrete materials and/or pictures	Experiments with problem solving using prior knowledge
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates the scope of the answer scope: range, size, shape, time	Finds a solution, using play, concrete materials, or models	Compares their solution with those of their teacher and/or peers
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Identifies a reasonable solution in relation to the original problem/scenario	Identifies an alternative approach approach: own approach, peer- or teacher-driven approach	Experiments with a recommended alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents the problem-solving process, using numbers, pictures, and/or manipulatives	Identifies one step of their problem-solving approach	Identifies one problem-solving decision



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 1 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes personal connections with aspects of the problem personal connections: experiences and prior knowledge	Identifies a significant fact and gathers other information from the problem	Identifies a clearly defined parameter needed to solve the problem parameter: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Recognizes the mathematical competencies and content needed to solve the problem content: refer to Math curriculum	Represents the mathematical problem, using concrete materials and diagrams	Develops a straightforward plan of approach, using prior knowledge and mathematical tools and strategies
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates the scope of the answer scope: e.g., range, size, shape, time	Finds a solution, using play, concrete materials, or models	Compares their solution with those of their teacher and/or peers
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Identifies a reasonable solution in relation to the original problem/scenario	Identifies an alternative approach approach: own approach, peer- or teacher-driven approach	Experiments with a recommended alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents the problem-solving process, using words, numbers, pictures, symbols, and/or manipulatives	Outlines their problem-solving approach	Outlines one problem- solving decision



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 2 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes personal connections to explore the problem personal connection: experiences and prior knowledge	Identifies and gathers most of the significant information from the presented problem to assist in solving it	Identifies some of the clearly defined parameters needed to solve the problem parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Identifies the mathematical competencies and content needed to solve the problem content: refer to Math curriculum	Represents the mathematical problem, using concrete materials and diagrams	Develops a basic plan of approach, using familiar mathematical tools and/or strategies basic: could be one step familiar: previously seen or modelled such as using base-10 blocks
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates reasonably within known parameters, using benchmarks benchmarks: e.g., 25, 50, 100, distance, rhythm, pattern	Finds a solution, using mathematical tools and/or strategies strategies: e.g., play, concrete materials, models	Verifies the accuracy of their solution by comparing it with a variety of proofs/checks, including estimation
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Reflects on the reasonableness of a solution in relation to the original problem/scenario	Explores an alternative approach approach: own approach, peer- or teacher-driven approach	Selects an alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents the problem-solving process, using familiar tools familiar tools: e.g., manipulatives, symbols, graphic organizers, charts	Outlines their problem-solving approach, using familiar mathematical language mathematical language: refer to Math curriculum	Describes one problem-solving decision and a supporting reason



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 3 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes personal connections to explore the problem personal connections: experiences and prior knowledge	Identifies and gathers most of the significant information from the presented problem to assist in solving it	Identifies most of the clearly defined parameters needed to solve the problem parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Identifies the mathematical competencies and content needed to solve the problem content: refer to Math curriculum	Represents the mathematical problem, using concrete materials, diagrams, and/or some familiar equations familiar equations: previously seen or modelled e.g., 2 digit addition	Develops a basic plan of approach, using familiar mathematical tools and/or strategies basic: could be one step
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates reasonably within identified parameters, using benchmarks and information from the scenario benchmarks: e.g., up to 1000, distance, rhythm, pattern	Finds a solution by applying familiar mathematical tools and/or strategies strategies: e.g., play, concrete materials, models	Verifies the accuracy of their solution, using familiar mathematical strategies and/or by comparing with their estimate
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Reflects on the reasonableness of a solution in relation to the original problem/scenario	Explores alternative approaches approach: own approach, peer- or teacher-driven approach	Selects an alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents processes and solution by selecting and using reasonable tools tools: e.g., table, manipulative, graphic organizer, array, model	Describes their problem-solving approach, using familiar mathematical language	Describes their problem-solving decisions and supporting reasons



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 4 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes general connections to understand the problem in context general connection: personal, or to similar problems	Gathers relevant information from the presented problem to assist in solving it	Identifies all clearly defined parameters needed to solve the problem parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to partially translate a familiar scenario into a mathematical problem mathematical understanding: refer to Math curriculum	Represents the mathematical problem, using concrete materials, diagrams, and/or some familiar equations familiar: previously seen or modelled such as using an array	Develops a sequence of steps that applies familiar mathematical tools and/or strategies
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates reasonably within identified parameters, using benchmarks and relevant information from the scenario benchmarks: up to 10 000, fractions, decimals, distance, colour, rhythm, pattern	Finds a solution by applying familiar mathematical tools and/or strategies strategies: e.g., equations, play, concrete materials, models	Verifies the accuracy of their solution, using reasonable estimates and other familiar mathematical strategies
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Reflects on the reasonableness of a solution in relation to the original problem/scenario	Compares and contrasts alternative approaches approaches: own approach, peer- or teacher-driven approach	Identifies and experiments with an alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents processes and solution by selecting and using reasonable tools tools: e.g., model, chart, map, table, graph, array	Describes their problem-solving approach, using familiar mathematical language mathematical language: refer to Math curriculum	Explains their problem-solving decisions and supporting reasons



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 5 PROFICIENCY DESCRIPTORS

Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes general connections to understand the problem in context general connections: personal, or to similar problems	Gathers relevant information from the presented problem to assist in solving it	Identifies all clearly defined parameters needed to solve the problem parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to partially translate a familiar scenario into a mathematical problem mathematical understanding: refer to Math curriculum	Represents the mathematical problem, using concrete materials, diagrams, and/or equations	Develops a logical sequence of steps that applies familiar mathematical tools and/or strategies familiar: previously seen or modelled such as using a calculator
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates reasonably within identified parameters, using benchmarks and relevant information from the scenario benchmarks: e.g., up to 1 000 000, fractions, decimals, distance, colour, rhythm, pattern	Finds a solution by applying familiar mathematical tools and/or strategies strategies: e.g., equations, play, concrete materials, models	Verifies the accuracy of their solution, using reasonable estimates and other familiar mathematical strategies
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Reflects on the reasonableness of a solution in relation to the original problem/scenario	Compares and contrasts alternative approaches approaches: own approach, peer- or teacher-driven approach	Identifies and experiments with an alternative approach to solve the problem
Aspect	Communicates – <i>The student represents, explains, and defends their approach and solution within the problem's scenario</i>		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents processes and solution by selecting and using reasonable tools reasonable tools: e.g., model, map, table, graph, array	Describes their problem-solving approach, using familiar mathematical language mathematical language: refer to Math curriculum	Explains their problem-solving decisions and supporting reasons



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 6 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes relevant connections to understand a real-world problem real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts relevant information from the presented problem as needed to solve it	Identifies only relevant explicit parameters needed to solve the problem parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate a familiar scenario into a mathematical problem mathematical understanding: refer to Math curriculum	Accurately represents the mathematical problem, using a variety of models models: e.g., concrete materials, diagrams, equations	Develops an organized and intentional sequence of steps that applies appropriate mathematical tools and/or strategies appropriate: refer to Math curriculum
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates reasonably within the context and parameters of the scenario, using benchmarks benchmarks: e.g., thousandths to billions, fractions, decimals, area, rhythm, pattern	Finds a solution, using appropriate strategies strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies familiar strategies: previously seen or modelled such as using a calculator
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Reflects on the reasonableness of their solution within the context of the problem reasonableness: rationality, practicality context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Describes the benefits and limitations of alternative approaches approaches: own approach, peer- or teacher-driven approach	Refines approach, using the benefits and limitations of alternative approaches to solving the problem refines: improves through small changes



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents the complete process and solution by selecting and using appropriate tools appropriate tools: e.g., model, chart, map, table, graph, array	Accurately explains their problem-solving approach approach: e.g., process: making a model; tool: manipulatives; strategy: using an equation	Presents a rationale for their problem- solving decisions and assumptions



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 7 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – <i>The student accesses and identifies relevant information in order to understand the real-world problem to be solved</i>		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes relevant connections to understand a real-world problem real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts relevant information from the presented problem as needed to solve it parameters: factors and conditions that define the problem	Identifies only relevant explicit parameters needed to solve the problem parameters: factors and conditions that define the problem
Aspect	Applies – <i>The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem</i>		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate a familiar scenario into a mathematical problem mathematical understanding: refer to Math curriculum	Accurately represents the mathematical problem, using a variety of models models: e.g., concrete materials, diagrams, equations	Develops a logical and organized plan that applies appropriate mathematical tools and/or strategies appropriate: refer to Math curriculum strategies: e.g., using a tool (calculator), picture, graph, equation
Aspect	Solves – <i>The student implements a plan to solve the mathematical problem and checks their solution</i>		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others' solutions, or their estimate</i>
Descriptor	Estimates reasonably within the context and parameters of the scenario, using benchmarks benchmarks: e.g., thousandths to billions, fractions, decimals, area, rhythm, pattern	Finds a solution, using appropriate strategies strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies familiar: previously seen or modelled e.g., using a tool [calculator], alternate algorithm, picture, graph
Aspect	Analyzes – <i>The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach</i>		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others' approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others' solution and/or approach</i>
Descriptor	Reflects on the reasonableness of their solution within the context of the problem reasonableness: rationality, practicality context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Describes the benefits and limitations of alternative approaches approaches: own approach, peer- or teacher-driven approach	Refines approach, using the benefits and limitations of alternative approaches to solving the problem refines: improves through small changes



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents the complete process and solution by selecting and using appropriate tools appropriate tools: model, chart, map, table, graph, array, equation	Accurately explains their problem-solving approach approach: e.g. process: making a model; tool: calculator; strategy: using an equation	Presents a rationale for their problem- solving decisions and assumptions



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 8 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – The student accesses and identifies relevant information in order to understand the real-world problem to be solved		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes relevant connections to fully understand the real-world problem in context real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts relevant information from the presented problem and other resources as needed to solve the problem	Identifies relevant explicit parameters and limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context
Aspect	Applies – The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate an unfamiliar scenario into a mathematical problem mathematical understanding: refer to Math curriculum unfamiliar scenario: previously unseen or unmodelled	Clearly represents the mathematical problem by choosing an appropriate model(s) appropriate: refer to Math curriculum models: e.g., concrete materials, diagrams, equations	Uses mathematical reasoning to develop a logical and organized plan that applies appropriate mathematical tools and/or strategies appropriate: refer to Math curriculum strategies: e.g., using a tool (calculator), picture, graph, equation
Aspect	Solves – The student implements a plan to solve the mathematical problem and checks their solution		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others’ solutions, or their estimate</i>
Descriptor	Estimates reasonably within the context and parameters of the scenario, using appropriate benchmarks benchmarks: e.g., perfect squares, volume; Arts: rhythm, pattern; Science: trend, frequency; Language Arts: pattern; ADST: area, volume, materials needed	Solves the mathematical problem, using effective strategies as needed strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies ; identifies factors that could affect accuracy of results familiar strategies: previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Analyzes – The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others’ approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others’ solution and/or approach</i>
Descriptor	Reflects on the validity of their solution within the context of the problem validity: accuracy in context context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Evaluates the benefits and limitations of alternative approaches approaches: own approach, peer- or teacher-driven approach	Revises approach, using the benefits and limitations of alternative approaches to solving the problem revises: reflects and adjusts
Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Effectively represents the complete process and solution, using appropriate presentations appropriate presentations: e.g., bulleted explanation, equation, graph, model, map, table, array	Accurately explains their problem-solving approach , identifying its limitations and assumptions approach: e.g., process: making a diagram; tool: calculator; strategy: using an equation	Presents a logical argument and justifies their decisions and assumptions



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 9 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – The student accesses and identifies relevant information in order to understand the real-world problem to be solved		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes relevant connections to fully understand the real-world problem in context real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts relevant information from the presented problem and other resources as needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context	Identifies relevant explicit parameters and limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context
Aspect	Applies – The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate an unfamiliar scenario into a mathematical problem mathematical understanding: refer to Math curriculum unfamiliar scenario: previously unseen or unmodelled	Clearly represents the mathematical problem by choosing an appropriate model(s) appropriate: refer to Math curriculum models: e.g., concrete materials, diagrams, equations	Uses mathematical reasoning to develop a logical and organized plan that applies appropriate mathematical tools and/or strategies appropriate: refer to Math curriculum strategies: e.g., using a tool (calculator), picture, graph, equation
Aspect	Solves – The student implements a plan to solve the mathematical problem and checks their solution		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others’ solutions, or their estimate</i>
Descriptor	Estimates reasonably within the context and parameters of the scenario, using appropriate benchmarks benchmarks: e.g., perfect squares, volume; Arts: rhythm, pattern; Science: trend, frequency; Language Arts: pattern; ADST: area, volume, materials needed	Solves the mathematical problem, using effective strategies as needed strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies ; identifies factors that could affect accuracy of results familiar strategies: previously seen or modelled e.g., using a tool [calculator], alternate algorithm, picture, graph



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Analyzes – The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others’ approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others’ solution and/or approach</i>
Descriptor	Reflects on the validity of their solution within the context of the problem validity: accuracy in context context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Evaluates the benefits and limitations of alternative approaches approaches: own approach, peer- or teacher-driven approach, comparison with research- based approaches	Revises approach based on their evaluation of alternative approaches to solving the problem revises: reflects and adjusts
Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Effectively represents the complete process and solution, using appropriate presentations appropriate presentations: e.g., bulleted explanation, equation, graph, model, map, table, array	Accurately explains their problem-solving approach , identifying its limitations and assumptions approach: e.g., process: making a diagram; tool: calculator; strategy: using an equation	Presents a logical argument and justifies their decisions and assumptions



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 10 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – The student accesses and identifies relevant information in order to understand the real-world problem to be solved		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes connections necessary to understand the context and implications of the real-world problem real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts and organizes relevant information from the presented problem and a variety of other external resources to solve the problem models: e.g., concrete materials, diagrams, equations	Identifies relevant explicit parameters and infers implicit limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context
Aspect	Applies – The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate an unfamiliar scenario into a mathematical problem mathematical understanding: refer to Math curriculum unfamiliar scenario: previously unseen or unmodelled	Clearly and accurately represents the problem by strategically choosing an effective model(s) models: e.g., concrete materials, diagrams, equations	Uses mathematical reasoning to develop a logical, organized, and effective plan that applies appropriate mathematical tools and/or strategies appropriate mathematical tools: refer to Math curriculum strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text
Aspect	Solves – The student implements a plan to solve the mathematical problem and checks their solution		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others’ solutions, or their estimate</i>
Descriptor	Estimates reasonably in context, within parameters, and considering limitations	Solves the mathematical problem by following a logical plan and using efficient strategies as needed strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies ; describes how factors affect accuracy of results familiar strategies: previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Analyzes – The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others’ approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others’ solution and/or approach</i>
Descriptor	Reflects on the validity of their solution , identifying contextual factors that may affect their answer validity: accuracy in context solution: e.g., lab results, map, product, model contextual factors: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Evaluates the efficiency and effectiveness of alternative approaches approaches: own approach, peer- or teacher-driven approach, comparison with research- based approaches	Revises approach, using the benefits and limitations of alternative approaches to compare alternative solution(s) to the problem revises: reflects and adjusts
Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents complex processes and solutions, using a variety of presentations in a manner that is suitable to the context presentations: e.g., bulleted explanation, equation, graph, model, map, table, diagram	Explains their problem-solving approach , describing any limitations and assumptions approach: e.g., process: making a flowchart; tool: calculator; strategy: using a familiar algorithm or evidence from text	Presents a valid, logical argument to justify their decisions about the selected approach and assumptions, and describes the effects of these choices



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 11 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – The student accesses and identifies relevant information in order to understand the real-world problem to be solved		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes connections necessary to investigate and understand new contexts and implications of real-world problems real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts and organizes relevant information from the presented problem and a variety of other external resources to solve the problem models: e.g., concrete materials, diagrams, equations	Identifies explicit and implicit parameters and limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context
Aspect	Applies – The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate a complex, unfamiliar scenario into a mathematical problem mathematical understanding: refer to Math curriculum unfamiliar scenario: previously unseen or unmodelled	Clearly and accurately represents the problem in context by strategically choosing an effective model(s) models: e.g., concrete materials, diagrams, equations	Uses mathematical reasoning to develop a logical, organized, and effective multi-step plan that applies appropriate mathematical tools and/or strategies appropriate mathematical tools: refer to Math curriculum strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text
Aspect	Solves – The student implements a plan to solve the mathematical problem and checks their solution		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others’ solutions, or their estimate</i>
Descriptor	Estimates reasonably in context, within parameters, and considering limitations; explains reasoning for estimate	Solves the mathematical problem by following a logical, multi-step plan and using efficient strategies as needed strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies ; compares and evaluates how factors affect accuracy of results familiar strategies: previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Analyzes – The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others’ approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others’ solution and/or approach</i>
Descriptor	Reflects on the validity and reliability of their processes and solutions and describes how contextual factors may affect their answer validity: accuracy in context reliability: reproducibility of results contextual factors: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Evaluates the efficiency and effectiveness of alternative approaches and possible improvements approaches: own approach, peer- or teacher-driven approach, comparison with research- based approaches	Redesigns approach to improve efficiency of process or accuracy of solution to the problem redesigns: iteratively reflects and adjusts
Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents complex processes and solutions; chooses a presentation that suits the purpose, context, and audience presentation: e.g., proof, model, equation, graph, model, map, table, diagram	Explains their problem-solving approach accurately and in detail, evaluating the effect of any assumptions or limitations approach: e.g., process: making a flowchart; tool: calculator; strategy: using an algorithm or evidence from text evaluating: assessing the implications	Presents a valid, logical argument to justify their decisions about the selected approach, evaluating assumptions and the effects of their choices evaluating: assessing the implications



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

NUMERACY LEARNING PROGRESSIONS – GRADE 12 PROFICIENCY DESCRIPTORS			
Aspect	Interprets – The student accesses and identifies relevant information in order to understand the real-world problem to be solved		
Sub-Aspect	Understands the real-world problem <i>Makes connections to a problem to aid understanding</i>	Extracts relevant information <i>Extracts key information, data, facts in order to solve a problem</i>	Identifies parameters and limitations <i>Recognizes reasonable factors, conditions, limitations that define the problem</i>
Descriptor	Makes connections necessary to investigate and understand new contexts and implications of real-world problems real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Extracts and organizes relevant information from the presented problem and a variety of other external resources to solve the problem models: e.g., concrete materials, diagrams, equations	Identifies explicit and implicit parameters and limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context
Aspect	Applies – The student applies mathematical vocabulary, tools, and symbols and develops a plan of approach to solve the problem		
Sub-Aspect	Translates the scenario into a mathematical problem (mathematizes) <i>Translate a scenario into a problem using mathematical vocabulary</i>	Represents the mathematical problem (visualizes) <i>Visually represents a problem with mathematical tools, visual representations, or mathematical symbols</i>	Develops a plan of approach <i>Thinks of and outlines various approaches to solve a mathematical problem</i>
Descriptor	Applies the mathematical understanding needed to translate a complex, unfamiliar scenario into a mathematical problem mathematical understanding: refer to Math curriculum unfamiliar scenario: previously unseen or unmodelled	Clearly and accurately represents the problem in context by strategically choosing an effective model(s) models: e.g., concrete materials, diagrams, equations	Uses mathematical reasoning to develop a logical, organized, and effective multi-step plan that applies appropriate mathematical tools and/or strategies appropriate mathematical tools: refer to Math curriculum strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text
Aspect	Solves – The student implements a plan to solve the mathematical problem and checks their solution		
Sub-Aspect	Estimates reasonably in context <i>Uses the information provided to support a best guess solution</i>	Solves the mathematical problem <i>Uses various approaches to find a solution to the problem</i>	Verifies accuracy of the mathematical solution <i>Checks their solution based on similar problems, others’ solutions, or their estimate</i>
Descriptor	Estimates reasonably in context, within parameters, and considering limitations; explains reasoning for estimate	Solves the mathematical problem by following a logical, multi-step plan and using efficient strategies as needed strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies ; compares and evaluates how factors affect accuracy of results familiar strategies: previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)



Aspect – the overarching skill being developed



Sub-Aspect – the skills that support the development of the Aspect



Descriptor – defines what a proficient understanding or display of the skill looks like at that grade level.

Aspect	Analyzes – The student reflects on the reasonableness of their solution; evaluates alternative approaches and solutions, and revises approach		
Sub-Aspect	Reflects on the reasonableness of the solution in context <i>Looks back on the reasonableness of the solution within the context of the problem (Does this make sense?)</i>	Evaluates alternative approaches <i>Checks on the reasonableness of others’ approaches to solve the problem</i>	Revises approach as needed <i>Revises their approach based on checking with others’ solution and/or approach</i>
Descriptor	Reflects on the validity and reliability of their processes and solutions and describes how contextual factors may affect their answer validity: accuracy in context reliability: reproducibility of results contextual factors: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Evaluates the efficiency and effectiveness of alternative approaches and possible improvements approaches: own approach, peer- or teacher-driven approach, comparison with research- based approaches	Redesigns approach to improve efficiency of process or accuracy of solution to the problem redesigns: iteratively reflects and adjusts
Aspect	Communicates – The student represents, explains, and defends their approach and solution within the problem’s scenario		
Sub-Aspect	Represents processes and solution <i>Effectively communicates the thinking and/or understanding in their approach and/or solution using visual representations or mathematical symbols</i>	Explains the approach taken <i>Clearly explains their problem-solving approach and solution with mathematical vocabulary</i>	Defends decisions and assumptions <i>Clearly justifies and defends the decisions and assumptions made in their approach and/or solution</i>
Descriptor	Represents complex processes and solutions; chooses a presentation that suits the purpose, context, and audience presentation: e.g., proof, model, equation, graph, model, map, table, diagram	Explains their problem-solving approach accurately and in detail, evaluating the effect of any assumptions or limitations approach: e.g., process: making a flowchart; tool: calculator; strategy: using an algorithm or evidence from text evaluating: assessing the implications	Presents a valid, logical argument to justify their decisions about the selected approach, evaluating assumptions and the effects of their choices evaluating: assessing the implications