NUMERACY PROGRESSIONS

Alberta Education defines numeracy as follows: **Numeracy** involves acquiring and applying the mathematical knowledge and skills needed to engage with quantitative and spatial information in a variety of situations. Numeracy is embedded in learning experiences across all subject areas. It is foundational, allowing students to make informed decisions as knowledgeable, active participants in our democratic society. The Numeracy Progressions identify knowledge and behaviours that students may demonstrate by the end of each divisional age range.

	Kindergarten (ages 4–5)	Division 1 (ages 6–8)	Division 2 (ages 9–11)
Awareness Students develop awareness of the numeracy skills required to engage in tasks or to make decisions.			
Purpose	Children recognize that quantitative and spatial information is all around them.	Students recognize everyday situations where numeracy is used to make decisions.	Students recognize that numeracy helps people make informed decisions.
Personal Insight	Children participate in guided activities that model how to think about their numeracy strengths and the strategies they can use to regulate their learning.	Students, with guidance, recognize their numeracy strengths and the strategies they can use to regulate their learning.	Students recognize and describe their numeracy strengths and challenges. With some guidance, they choose appropriate strategies to regulate their learning.
Task Analysis	Children participate in guided activities that model how to complete a task involving numeracy.	Students identify tasks that involve numeracy and determine which information may be used to complete a task.	Students analyze situations that involve numeracy to identify relevant and irrelevant information.

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Quantitative Information Students apply knowledge of quantitative information to make an informed decision**.**			
Magnitude	Children describe the quantity of objects within a group(s) as being more, less, enough, too many, or too few for a variety of purposes (e.g., to share cookies, make teams).	Students interpret and compare quantities expressed as whole numbers in their environment.	Students interpret, compare, and use quantities expressed as whole numbers, percentages, fractions, and decimals that are commonly used in real-life situations.
Using Numbers	Children use numbers to count and label in their environment (e.g., board games, phone numbers, counting rhymes).	Students use numbers to indicate position or value in their environment (e.g., first, second, third, currency, music notes).	Students use negative numbers in real-life situations (e.g., temperature, golf scores, hockey statistics).
Calculations	Children solve basic counting problems informally in familiar situations.	Students use addition and subtraction in familiar situations.	Students calculate using whole numbers and decimals in real-life situations.
Patterns and Relationships	Children recognize and use non-numerical patterns in their environment and daily routines (e.g., days of the week, rhythms).	Students recognize and use patterns in their environment and daily routines (e.g., calendar, seasons).	Students analyze and use patterns, including increasing or decreasing patterns, to make simple predictions in real-life situations.
Organization of Data	Children organize familiar items by sorting according to shared characteristics.	Students organize objects, ideas, or information using a classification system.	Students organize objects, ideas, or information using a variety of classification systems.

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Collection of Data	Children participate in data collection and recording for a specified purpose.	Students formulate questions for a specific investigation and collect, record, and discuss the data using charts or graphs.	Students use an effective method to collect, organize, analyze, or represent data.
Interpretation of Data	Children extract specific data from a basic graph or chart.	Students extract specific data from a graph or chart to make comparisons or inferences.	Students interpret data from a graph or chart to make inferences and draw conclusions.
Probability	Children use simple probability language to describe familiar events (e.g., will happen, will not happen, might happen, always, never, impossible).	Students describe the likelihood of an event occurring using probability vocabulary (e.g., possible, impossible, probable, likely, unlikely).	Students describe the possible outcomes of events along a continuum from impossible to certain.
Spatial Information Students apply knowledge of spatial information to make an informed decision.			
Spatial Visualization	Children participate in activities that develop spatial thinking (e.g., puzzles, building with blocks, drawing).	Students physically manipulate objects to describe and represent them in a variety of orientations and sizes.	Students visualize and represent familiar objects in their environment from different viewpoints.
Management of Space	Children judge the space between themselves and others or objects in their environment.	Students judge and use the space around or between bodies, objects, or shapes in their environment.	Students judge and refine the use of space around or between bodies, objects, or shapes with fluency (e.g., positive/negative space).
Measurement	Children compare two familiar objects according to measurement attributes to complete a task (e.g., taller, shorter, heavier, smaller).	Students select and use basic measuring instruments to complete a task (e.g., ruler, calendar, stopwatch, thermometer).	Students identify and use appropriate measuring instruments and read simple meters, dials, and weigh scales in their environment.

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Units of Measurement		Students identify basic units of measure and familiar referents for a given task (e.g., “A metre is about the height of a door knob from the floor.”).	Students determine and use the type and unit of measurement, and familiar referent, most useful for a task (e.g., “A small water bottle could be used to measure 200 mL of vinegar.”).
Conversions			Students convert units of measurement within the same system in real-life situations (e.g., hours to minutes, centimetres to metres).
Time	Children describe and sequence familiar activities using relative time vocabulary (e.g., before, after, first, then, next, a long time ago).	Students describe the duration of familiar events and the intervals between them using units of time (e.g., seconds, minutes, hours, days, weeks, months, years).	Students determine the chronology and duration of events encountered in real- life situations using time and elapsed time.
Location and Direction	Children follow or give directions using gestures and basic positional language (e.g., in front, beside).	Students navigate or create directions and geographic representations using basic techniques (e.g., oral directions, gestures, basic maps, story maps).	Students navigate, or create or generate navigational aids, using a variety of traditional, non-digital, and digital techniques in familiar contexts (e.g., inuksuit, position of sun or stars, maps with legends, basic map features, mental maps).
Interpret, Represent, Communicate Students interpret, represent, and communicate in a variety of digital and non-digital formats to support decisions in situations involving numeracy.			
Interpretation and Representation of Quantitative Information	Children recognize or create basic representations of quantitative information (e.g., numbers, drawings).	Students create or interpret basic representations of quantitative information (e.g., numbers, drawings, equations, words, basic tables, musical notation).	Students create or interpret different representations of quantitative information.

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Interpretation and Representation of Spatial Information	Children interpret simple diagrams that represent spatial information (e.g., identify the real object represented by a drawing).	Students interpret or create simple models and labelled diagrams to represent spatial information (e.g., number line, diagrams of life cycles).	Students interpret or create models and labelled diagrams to represent spatial concepts (e.g., mind maps, topographical maps, timelines).
Communication	Children use basic vocabulary, gestures, objects, or symbols when communicating about quantitative or spatial information.	Students use basic vocabulary, gestures, objects, symbols, or analogies when communicating ideas in situations involving numeracy (e.g., “round like a wheel”).	Students identify and use meaningful terminology, gestures, symbols, objects, or analogies to explain quantitative and spatial concepts encountered in real-life situations.
Strategies, Methods, or Tools Students use efficient and effective strategies, methods, or tools to manage quantitative and spatial information.			
Strategies	Children use a non-symbolic strategy in a task involving numeracy (e.g., act it out, draw it).	Students identify different strategies that may be used to complete a task involving numeracy.	Students assess alternative strategies and recognize that the choice of strategy affects the end result.
Estimation	Children estimate the quantities of small sets of objects in familiar situations.	Students use estimation to check the reasonableness of results in familiar situations.	Students apply overestimating or underestimating when a precise answer is not required in real-life situations.
Methods or Tools	Children participate in activities that use non-digital basic methods or tools in a task involving numeracy (e.g., pencil and paper, counting with objects).	Students use non-digital methods or tools in a task involving numeracy (e.g., pencil and paper, mental calculations, visualization, calendars, agendas).	Students use effective non-digital and digital methods or tools in a task involving numeracy (e.g., pencil and paper, mental calculations, visualization, schedules, timetables, calculators).