

Mathematics Tasks | Grade 3

The tasks listed below support teaching and learning related to the learning outcomes from the 2022 Mathematics Curriculum for Grade 3. Multiple forms of representation (physical, visual, contextual, verbal, and symbolic) can be incorporated at any stage of the learning cycle to support students' conceptual understanding of mathematical concepts.

Many of these resources offer ideas for implementing the task, as well as suggestions for scaffolds and extensions. Some tasks are appropriate for multiple grades, especially with modifications. Therefore, teachers may wish to look at tasks in the grades above and below for more tasks.

Number Organizing Idea: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.			
Learning Outcome: Students interpret place value to 100 000			
Interpret place value	<p>The following Planning Guide was developed for the 2007 AB Mathematics Program of Studies (PoS). However, the planning process and many of the tasks and assessments still align with the 2022 AB Mathematics Curriculum. Please ensure that the Learning Outcome and Knowledge, Understanding, and Skills and Procedure statements are kept in mind as tasks are selected.</p> <ul style="list-style-type: none"> Place Value to 1000: This Planning Guide was developed for Grade 3 in the 2007 PoS. It contains information and sample activities to explore counting and place value to 1000. Tasks could be used to address students' understanding of 3-digit place value before working with numbers to 100 000. 		
	<p>Round The Three Dice</p> <p>This is a task that explores place value and rounding to the nearest multiple of 100 using three dice.</p> <p>Note Increasing the number of dice can allow for exploration of numbers within 100 000.</p>	<p>Four Digit Target</p> <p>This task examines place value and the relationship between placement of a digit and its impact on the overall value of the number.</p> <p>Note This task can be accommodated to attend to values to 100 000 and constraints could be changed.</p>	<p>How Many Pages...?</p> <p>A task visually exploring quantity within daily items (e.g., various books), with opportunities to estimate and discuss place value.</p> <p>Note Estimation 180 prompts could be part of a math routine to strengthen estimation skills.</p>
	<p>Open Middle Place Value</p> <p>This task will need to be modified to meet the value of 100 000 but will allowed students to explore the importance of place value.</p>	<p>Roll on Place Value (p.16)</p> <p>The goal of the game is to create the largest number. Players take turns rolling a die, placing it into the tray and announcing its place value for that roll.</p>	<p>What Number Am I? (p.12)</p> <p>Students use various clues to determine a five-digit number.</p> <p>Note Will need to discuss "100 times a place value amount."</p>

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Number Organizing Idea: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.			
Learning Outcome: Students apply strategies for addition and subtraction within 1000.			
Number facts	Splat! See the downloadable ppts for a “very powerful, highly interactive number sense strategy.	Window Sum An <i>Open Middle</i> problem that uses the digits 0-9 to create four equations that have equal sums. Note The problem involves 3 addend equations.	Strike it Out for Two This game offers an engaging context for practising addition and subtraction, but it also requires some strategic thinking.
	Cube Conversations Similar to Splat!, animated picture prompts to spark rich math discourse as students share how they see and added the total number of cubes.		
Two- and three-digit addition and subtraction	The following Planning Guide was developed for the 2007 AB Mathematics Program of Studies (PoS). However, the planning process and many of the tasks and assessments still align with the 2022 AB Mathematics Curriculum. Please ensure that the Learning Outcome and Knowledge, Understanding, and Skills and Procedure statements are kept in mind as tasks are selected. <ul style="list-style-type: none"> ▪ Addition and Subtraction: Sample activities provided in Step 3. 		
	Subtraction Slip This “error analysis” task connects to the <i>counting back</i> mental math strategy and uses a number line representation. A video showing a student making a mistake that could be used to introduce a routine of Get the Goof!	Arranging Additions and Sorting Subtractions A task to prompt flexible approaches as students consider calculation methods and the value of choosing a method based on the nature of the numbers. Note Fluency Routines can be used in relation to this task.	Number Squares A task that generates a never-ending supply of calculations as the sums become the new addends. A subtraction version is here .
	Creative Math Prompt Two missing digit subtraction equations to notice and wonder about while developing deeper understanding of place value and subtraction.	Three Neighbours A rich opportunity for students to get lots of practice adding!	Subtracting Reverses A great opportunity for students to practice mental math strategies as they conjecture and look for counterexamples. 3-digit reversal questions are also available as a notice and wonder task.

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Number Organizing Idea: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Learning Outcome: Students analyze and apply strategies for multiplication and division within 100.					
Multiplication and division	<p><u>Planning Guides</u> The following Planning Guides were developed for the 2007 AB Mathematics Program of Studies (PoS). However, the planning process and many of the tasks and assessments still align with the 2022 AB Mathematics Curriculum. Please ensure that the Learning Outcome and Knowledge, Understanding, and Skills and Procedure statements are kept in mind as tasks are selected.</p> <ul style="list-style-type: none"> ▪ Introducing Multiplication: Sample activities in Step 3. ▪ Introducing Division: Sample activities in Step 3. <p>Multiplication and Division: Sample activities in Step 3.</p>				
	<p><u>Odd and Even</u> A problem to explore multiplication of odd and even numbers using various representation methods.</p>	<p><u>Fruit Shop</u> Image prompts and questions to look for similarities/differences and connections using the array as a multiplicative structure.</p>	<p><u>Planting Carrots</u> An <i>Open Middle</i> problem that could be used as a framework to create other similar open-ended word problems.</p>	<p><u>Math Cards</u> The aim of the activity is to match cards with the same numerical answer, shown through different representations.</p>	<p><u>Missing Multpliers</u> An interactive task that explores problem solving element to multiplication.</p>

Number Organizing Idea: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.			
Learning Outcome: Students interpret fractions in relation to one whole.			
Interpreting fractions related to one whole	<p><u>Rod Fractions</u> A task to represent fractions concretely using Cuisenaire rods.</p>	<p><u>Half Fraction Snake</u> A rich <i>Math Pickle</i> challenge to explore fractions using only one-half. Many opportunities to discuss what is the whole.</p>	<p><u>WODB</u> Compare 4 images to determine reasons for each why they do not belong to the set. (Shape 55 and Shape 71)</p>
	<p><u>Fraction Talks</u> A variety of images from the <i>Math for Love</i> website that can be used as prompts to identify examples and non-examples of one-half. Students may be inspired to create their own prompts!</p>	<p><u>Halves and Nots</u> Visual images to prompt discussions about fractions with same and different size wholes. A Notice and Wonder routine is used as the suggested way to engage with the images.</p> <p>Note Task could be modified to start students exploring only one or two images.</p>	<p><u>Fractions on a Number Line</u> An <i>Open Middle</i> task to explore creating and placing fractions on a number line.</p>

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Algebra Organizing Idea: Equations express relationships between quantities.					
Learning Outcome: Students illustrate equality with equations.					
Illustrate equality with equations	<p>Planning Guides</p> <p>The following Planning Guide was developed for the 2007 AB Mathematics Program of Studies (PoS). However, the planning process and many of the tasks and assessments still align with the 2022 AB Mathematics Curriculum. Please ensure that the Learning Outcome and Knowledge, Understanding, and Skills and Procedure statements are kept in mind as tasks are selected.</p> <ul style="list-style-type: none"> ▪ Solving Equations: This Planning Guide was developed for Grade 4 in the 2007 PoS. It contains information and sample activities to explore representing problems as equations. 				
	<p>Number Lines</p> <p>Problems to solve for unknown values on horizontal and vertical number lines.</p>	<p>SolveMe Puzzles (Mobiles)</p> <p>An online interactive site with puzzles at different levels to reinforce the concept of equality, equation solving, and number sense.</p>	<p>Secret Number</p> <p>A game in which a symbol could be used to represent the “secret” number.</p>	<p>Super Shapes</p> <p>Questions to practice addition and subtraction and reinforce understanding of the inverse relationship.</p>	<p>Solving One-Step Equations</p> <p>An Open Middle problem where students use the numbers 1-9 only once to make multiple equations true.</p>

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Geometry Organizing Idea: Shapes are defined and related by geometric attributes.			
Learning Outcome: Students relate geometric properties to shape.			
Relating geometric properties to shape	<p>The following Planning Guide was developed for the 2007 AB Mathematics Program of Studies (PoS). However, the planning process and many of the tasks and assessments still align with the 2022 AB Mathematics Curriculum. Please ensure that the Learning Outcome and Knowledge, Understanding, and Skills and Procedure statements are kept in mind as tasks are selected.</p> <ul style="list-style-type: none"> ▪ Sorting and Describing Shapes: Step 3 includes sample activities to investigate and sort polygons. 		
	<p>Mathematical Art Identify shapes and geometric properties in pieces of artwork. See the example on p. 4.</p>	<p>Where Are They? A challenge to generate various polygons on isometric grid paper.</p> <p>Note There are numerous polygons listed that could be included as extensions for students.</p>	<p>Which One Doesn't Belong? Select appropriate images to engage students in mathematical discussion on geometric properties of regular and irregular polygons.</p>
	<p>Seeing Squares This interactive game is a problem-solving activity that challenges students to see squares on a geoboard with a partner or computer.</p> <p>Note This game can easily be adapted for other required shapes, like triangles.</p>	<p>Overlaps and Overlapping Again These two related tasks examine the relationship between the sides of a polygon, including perpendicular, parallel, and equal, using referents for 90° or by measuring.</p>	<p>Quadrilaterals This interactive device allows students to explore regular and irregular polygons.</p> <p>Note A printable version is available for hands on use.</p>
Transformation	<p>Tangram Browser An interactive to explore rotations and translations using tangrams and recreating images.</p> <p>Note Physical tangrams also allow students to explore reflections as well.</p>	<p>Tangram Tangle A challenge to create new shapes from two pieces of a square. Students can engage in discussion to identify which are unique shapes, not just others rotated or reflected.</p>	<p>Sponge Art Explore what does or does not change in rotations, reflections and transformations while creating artwork!</p>

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Measurement Organizing Idea: Attributes such as length, area, volume, and angle are quantified by measurement.				
Learning Outcome: Students determine length using standard units.				
Length	<p>Estimation180 (Days 1 to 5) Students estimate heights of various objects or people.</p> <p>Note Under the Resources tab is a link to download handouts. Within these handouts is a Reasoning Framework, which may be helpful to support student thinking.</p>	<p>Take One Metre Students are given one metre of paper cut up into smaller pieces. They work on refining their measuring skills using a ruler to determine the length of each piece of paper.</p> <p>Note Extend this task to have students approximate the lengths using imperial units.</p>	<p>Can You Do It Too? Students estimate how far they can throw a bean bag and then go out and test this for themselves.</p> <p>Note The task provides opportunity for various explorations and discussions. For example, measuring distances using different lengths or discussing which unit is most appropriate.</p>	<p>Same But Different Various picture prompts to use the Alike/Same and Different routine to explore measurement concepts, including metric and imperial units of measurement.</p>
Perimeter	<p>Perimeter An <i>Open Middle</i> challenge to explore shapes of rectangles with the perimeter of 20 units.</p>	<p>Shapes on the Playground A challenge to explore perimeter of regular polygons.</p>	<p>Creative Math Prompt An image of polygons on grid paper that can spark mathematical discourse about shapes and perimeter.</p> <p>Note Exploration of area could be an extension.</p>	

Measurement Organizing Idea: Attributes such as length, area, volume, and angle are quantified by measurement.				
Learning Outcome: Students interpret angles				
Angles	<p>Angles – Interactive Simulator An interactive digital tool for students to understand the structure of an angle and the motion of a length around a vertex.</p>	<p>Olympic Turns Photos of Olympic athletes that involve angles. Students can compare the angles indirectly or cut out images to compare directly.</p>	<p>Right Angle Challenge A challenge to make and identify right angles made with two sticks.</p>	<p>Take the Right Angle This task has students identifying when the hands on an analog clock form a right angle.</p> <p>Note Questions in this task involves telling time to the minute which students may not be familiar with yet.</p>

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Patterns Organizing Idea: Awareness of patterns supports problem solving in various situations.				
Learning Outcome: Students analyze patterns in numerical sequences.				
Numerical Sequences	Mystery Number A prompt to explore possible order of numbers in a finite sequence to determine a missing number according to a pattern rule.	A Pattern with 4 A prompt to create a finite sequence that progresses according to a pattern when given only one of the terms.	Multiplication Square Jigsaw An interactive activity to apply understanding of skip-counting sequences in a multiplication table.	Beach Huts This task challenges students to identify next numbers in a sequence by noticing, describing and generalizing multiple patterns. Note The extending questions at the bottom of the page are beyond curricular requirements.

Time Organizing Idea: Duration is described and quantified by time.			
Learning Outcome: Students tell time using clocks.			
Tell time using clocks	Time Twister Use the digits 0-9 to create times on clocks that meet certain constraints.	Two Clocks These clocks have only one hand, but can you work out what time they are showing from the information?	The Time Is A task to put times in order. Note The task could be extended to have students calculate the duration between times. Digital times should be rewritten using a colon to align with Canadian standards.

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Statistics Organizing Idea: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.			
Learning Outcome: Students interpret and explain representations of data			
Interpret and explain representations of data	Dot Plots See an example of a dot plot. Click on the link to an interactive site where students can create dot plots and bar graphs using collected data from their own question(s).	What's for Lunch? Collect, display and analyze data to explore how many sandwiches the class might eat in a school year.	Interpreting Graphs An <i>Open Middle</i> problem that uses the digits 1-6 to fill in the blanks and make the statements about the graph true.
	Endangered Species A bar graph visual to engage in a Data Talk as students work with second-hand data. Students have opportunities to estimate and discuss approximate numbers of each animal class.	The Water I Use in 24 Hours A very interesting visual to have students explore how representation tells a story about data. Note This task can also be connected to the learning outcome for time.	The Pet Graph A problem using logical reasoning to interpret a bar graph.