Grade 2 • Curriculum Correlation

Grades K–3 Open Questions for the Three-Part Lesson and the 2020 Ontario Curriculum

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Grades K–3: Open Questions for the Three-Part Lesson • *Number Sense and Numeration* [Number]

2020 Ontario Curriculum Expectations	Grades K–3: Open Questions for the Three-Part Lesson • *Number and Number Sense*	Book & Page Number
B. NUMBER		
B1. Number Sense **Overall Expectation:** By the end of Grade 2, students will demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life		
Whole Numbers		
B1.1 read, represent, compose, and decompose whole numbers up to and including 200, using a variety of tools and strategies, and describe various ways they are used in everyday life	**Q:** You represent a number less than 100 with exactly 10 base ten blocks. List two possible numbers. Describe what blocks you would use to represent them.	Number • Page 56
	Q: It takes five 10-frames to represent a number — four full ones and one that is less than half full. What might the number be?	
	Q: You see the number 50 on an Internet news site. What might that amount describe that makes sense?	
	Q: How much could four coins be worth?	
	Q: A number is on the left side of a 100-chart and close to the bottom. What might the number be?	
	Q: Choose a two-digit number. Break it up as many ways as you can. Tell what each way helps you to see about that number.	Number • Page 57
	Q: Choose three or more amounts of money that you can represent using six coins. How else could you show each of those amounts?	
	Q: Break up the number 48 to show each of the following things about it? Then, explain how you could use a number line or base ten blocks to show each thing. a) It is even. b) It is between 40 and 50. c) It can be broken up into three groups. d) It is a lot less than 100. e) It has 4 groups of 10 and some leftovers.	

B1.1 (continued)	**Q:** A certain number can be modelled with three more ones than tens. What could the number be? Think of three or more possibilities.	Number • Page 57
	Q: I am thinking of a number that might be the number of students in a classroom. What might that number be? What number could it not be? Explain your thinking.	Number • Page 58
	Q: Do you think there are more ways to represent the number 57 or the number 37? Why do you think that?	
	Q: How could knowing how to break up the number 36 help you figure out ways to break up the number 38?	
	Q: How might you put 48 counters into three groups so that one group has about double the number of counters as the other two groups?	
B1.2 compare and order whole numbers up to and including 200, in various contexts	**Q:** When is the number 75 a lot? When is it not?	
	Q: On a 100-chart, choose one number that is far from 1 and another number that is close to 1. How can you tell that the first number is far from 1? How can you tell that the second number is close to 1?	Number • Page 59
	Q: What number would you put at the dot? How sure are you?	
	Q: Describe a number that is about 40.	
	Q: ☐9 and 4☐are about the same distance apart as 1☐and☐5. What might the missing digits be?	
	Q: Fill in the boxes with a two-digit number and complete the sentence. It's easy to tell that☐☐is greater than 9 because...	
	Q: Use the digits 1 to 7, using each digit only once, to fill in the blanks. Then, order the numbers from least to greatest. Try it again, putting the digits in different places. 34134	Number • Page 60
	Q: You write down a two-digit number. You switch the digits around, and now your number is 18 more than the number you wrote. What could the number you wrote have been? Is there more than one possibility? How do you know?	
	Q: Choose three two-digit numbers that would make sense to put at points A, B, and C on the number line below. Tell why they make sense.	

B1.2 (continued)	**Q:** Aidan said that any two-digit number is more than any one-digit number. Is Aiden correct? How do you know?	Number • Page 61
	Q: You use base ten blocks to represent two two-digit numbers. Can it take fewer blocks to represent the greater number? Explain your thinking about whether, when, and why it can or cannot happen.	
	Q: Describe a time when you would choose to estimate to the nearest 10. Tell why that choice makes sense.	
	Q: Choose five two-digit numbers and put them in order. Tell how you know which number is least.	
	Q: A number on a number line is only a little bit closer to 30 than to 20. What might that number be?	Number • Page 70
B1.3 estimate the number of objects in collections of up to 200 and verify their estimates by counting	**Q:** Someone said Charlotte had about 40 counters. How many do you think "about 40" is?	Number • Page 61
B1.4 count to 200, including by 20s, 25s, and 50s, using a variety of tools and strategies	**Q:** You skip count by a number and you say 20. What might you have been skip counting by? What were you not skip counting by? How do you know?	Number • Page 68
	Q: What is a number that you are sure you will not say when you skip count by 25s? How do you know?	
	Q: Choose a number to skip count backwards by and a starting place. Then, tell a number you will say early in the skip count and a number you will say later.	
	Q: Choose 2, 5, or 10. Use a number line to count forward from 20 by that amount. What patterns do you notice?	Number • Page 69
	Q: Create a number line by skip counting by 5s. Choose five numbers, not ending in 0 or 5, and place them on your number line. Explain why you placed those numbers where you did.	
	Q: Play a spinner game. One spinner tells you whether to start at 0, 10, or 20. Another tells you whether to skip count by 2s, 5s, or 10s. A third spinner tells you whether to say the 5th, 6th, 10th, or 20th number when you skip count. Play with a partner. Both players spin the spinners and skip counts as indicated. The player with the lower number wins a point. The first player to get 10 points wins.	

B1.4 (continued)	**Q:** Use a number line to list some numbers that you say when you skip count by both 2s or 5s. Name some other numbers that are on only one list.	Number • Page 70
	Q: You mark the numbers you say when you skip count by 5s on a number line. You are just past one of the marks. What might the number be? What could it not be?	
	Q: Count backwards from 40, but not by 1s. What is the fourth number you say? Explain how you got there.	
B1.5 describe what makes a number even or odd	**Q:** Break up the number 48 to show each of the following things about it? Then, explain how you could use a number line or base ten blocks to show each thing.[SEP]a) It is even.[SEP]...	Number • Page 57
Fractions		
B1.6 use drawings to represent, solve, and compare the results of fair-share problems that involve sharing up to 10 items among 2, 3, 4, and 6 sharers, including problems that result in whole numbers, mixed numbers, and fractional amounts	**Q:** Two cakes are the same size. One cake is divided into three equal pieces. The other cake is divided into smaller equal-sized pieces. How many pieces might the second cake have been divided into? Why do you think that?	Number • Page 64
	Q: More than three pieces of paper are divided into equal parts. There are 12 equal parts in total. What fraction of a piece of paper might each part have been? Why?	
	Q: Which fractional pieces are small? What makes them small? Which fractional pieces are large. What makes them large?	
	Q: You put 12 identical fractional pieces together and you make more than one whole. How much of a whole might each piece be?	Number • Page 65
	Q: If a whole is divided into 12 equal parts, what fractions of it can you show? Is it[SEP]only twelfths?	
	Q: What fractions of an object might be smaller than sixths of that object?	Number • Page 66
	Q: Can one-half ever be less than one-fourth? If yes, explain how.	
	Q: You put together 10 identical fraction pieces, and it made more than two wholes. What pattern block pieces might you have used to show the fraction and the wholes?	

B1.7 recognize that one third and two sixths of the same whole are equal, in fair-sharing contexts	**Q:** If a whole is divided into 12 equal parts, what fractions of it can you show? Is it only twelfths?	Number • Page 65
	Q: Suppose you know that a certain number of thirds is greater than a certain number of sixths. How many thirds and how many sixths might there be? How would you show this with pattern blocks?	Number • Page 66

B2. Operations

Overall Expectation: By the end of Grade 2, students will: use knowledge of numbers and operations to solve mathematical problems encountered in everyday life

Properties and Relationships

B2.1 use the properties of addition and subtraction, and the relationships between addition and multiplication and between subtraction and division, to solve problems and check calculations	**Q:** What does the number sentence 12 − 8 = 4 tell you about the numbers 12, 8, and 4?	Number • Page 72
	Q: When and how would you use addition to help you figure out a subtraction question?	Number • Page 74
	Q: When would you add or subtract a little too much and then fix it up to do an addition or subtraction in your head?	
	Q: Which addition do you think doesn't belong? Why? 30 + 20 26 + 33 39 + 9 25 + 26	Number • Page 75
	Q: Create one sentence that uses the following words and numbers: difference, greater, 10, 80	
	Q: The result of a subtraction problem is one less than the result of 30 − 15. Explain what the problem might have been.	Number • Page 77
	Q: How does what you know about reading and representing numbers in ones and tens help you add and subtract them?	

Math Facts		
B2.2 recall and demonstrate addition facts for numbers up to 20, and related subtraction facts	**Q:** How would you subtract 12 − 8 in your head? What other numbers would you subtract in a similar way?	Number • Page 72
	Q: What is an easy way to add 9 + 9 in your head?	
	Q: Create a game that would require players to add single-digit numbers a lot. Describe the game and how it is played. Play the game with a friend.	Number • Page 73
	Q: Fill in the boxes with the digits 4 to 9. Use each digit only once. Use mental math to add the pairs of numbers. Try to use different strategies. Be ready to talk about your strategies. Then, describe a story that matches each of your problems.	
	Q: A number less than 19 is 6 more than another number. What could the two numbers be? Think of three or more pairs of numbers it could be. Which two pairs of numbers were easiest for you to figure out? Why?	
	Q: Fill in the blanks with the digits 2, 3, 7, and 8. Use each digit only once. Then, use mental math to subtract the numbers you have created. Try to use different strategies. Be ready to talk about your strategies. Then, describe a story that matches each of your problems.	
	Q: There are lots of ways to figure out 14 − 6 in your head. Which way is easier for you? Why?	Number • Page 74
	Q: Think about how you would figure out 7 + 8. What other additions would you do in a similar way?	
Mental Math		
B2.3 use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 50, and explain the strategies used	**Q:** If you subtract two two-digit numbers, could the result be a one-digit number? Explain why or why not.	Number • Page 75
	Q: Sometimes you might estimate the sum of two two-digit numbers by just adding the tens of the original numbers, but sometimes not. Give an example of each situation. Explain your thinking.	Number • Page 77

Addition and Subtraction		
B2.4 use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of whole numbers that add up to no more than 100	**Q:** You have two piles of counters. Altogether, you have just a few more than 12 counters. How many counters might there be in each pile?	Number • Page 72
	Q: The sum of two numbers that are pretty close to each other is a little less than 60. What could the two numbers be?	Number • Page 75
	Q: Create one sentence that uses the following words and numbers: difference, greater, 10, 80	
	Q: Centipedes always have an odd number of pairs of legs. They could have as few as 15 pairs or as many as 175 pairs. Create and solve two or more problems about centipede legs.	Number • Page 76
	Q: You add a number greater than 10 that you can represent with 5 base ten blocks to a number that you can represent with 10 base ten blocks. How many base ten blocks do you need to represent the answer? Think of three pairs of numbers to add.	
	Q: You buy two items. You pay for one with six coins and the other with four coins. What could the total price have been? List three or more possibilities. Prove that you are correct.	
	Q: One price is 32¢ more than another price. One of the prices can be represented with eight coins. What could the two prices be?	
	Q: Create a story problem with more than one answer that you could solve by subtracting two two-digit numbers. Solve the problem to get several answers.	
	Q: Describe two or more ways to calculate 48 + 49.	Number • Page 77

Multiplication and Division		
B2.5 represent multiplication as repeated equal groups, including groups of one half and one fourth, and solve related problems, using various tools and drawings	**Q:** You used skip counting to help you put 20 children into several equal groups. How many equal groups might there have been? What numbers would you have said when you counted?	Number • Page 80
	Q: How are these pictures alike? How are they different?	
	Q: There were four plates with the same number of sandwiches on them. How many sandwiches, in total, might there have been? What number of sandwiches could not have been the total number on the plates? Explain your thinking.	
	Q: Use 6, 8, 10, or 12 square tiles to make a rectangle. How could you look at the rectangle and see equal groups? What multiplication are you showing?	Number • Page 81
	Q: There are a lot of tricycles in the park. Tell how many wheels there might be on all the tricycles. Tell how many wheels there could not be on all the tricycles. Think of three or more possibilities.	
	Q: Use modelling clay to create a monster with 3 antennae, 4 eyes, and 5 legs. Decide on how many monsters you would like. How many antennae, eyes, and legs would there be altogether?	
	Q: Write a multiplication story that begins with the following phrase. Carlos had…	Number • Page 82
	Q: How could you rearrange the counters so that they show equal groups? What multiplication expression does it show?	
	Q: There are a lot of loose mittens to put together to make pairs. How many mittens might there be if every mitten has a match? How many mittens could not be there?	Number • Page 85
	Q: There are some students in the gym. At first the teacher was going to form groups of 4 students and then she changed her mind to form groups of 5. Would there have been more groups of 4 or more groups of 5? How do you know? Does it depend on how many students?	

B2.6 represent division of up to 12 items as the equal sharing of a quantity, and solve related problems, using various tools and drawings	**Q:** Choose 12, 20, or 24 counters. Tell the ways that you could arrange the counters into equal groups.	Number • Page 81
	Q: Would you find it easier to arrange 12 grapes or 15 grapes into equal groups of grapes? Explain.	Number • Page 82
	Q: You skip counted backwards to count how many children left the playground. The first number you said was 50. How many equal groups might there have been? What numbers would you have said when you counted?	Number • Page 83
	Q: Three people shared some almonds. They all had the same number of almonds. How many might there have been? How many do you think there were not? Explain your thinking.	
	Q: Some people shared $20, and they each received the same amount of money. Decide how many people there were. How much money did each person receive?	
	Q: Show that if 4 people share 12 tacos, they get the same number of tacos as if 5 people share 15 tacos. What other ways of sharing tacos would lead to the same number of tacos for each person?	Number • Page 84
	Q: Choose eight base ten blocks. They do not all have to be the same size. How could you arrange the blocks into equal piles or trade for equal values and arrange the blocks into equal piles so that every pile has the same value?	
	Q: Choose 12, 20, or 24 counters. Arrange the counters into equal groups in three or more ways.	
	Q: How is division like multiplication? How is it different?	Number • Page 85
	Q: Do you think it is easier to share 10 cookies or 12 cookies? Explain.	

F. FINANCIAL LITERACY

F1. Money and Finances

Overall Expectation: By the end of Grade 2, students will demonstrate an understanding of the value of Canadian currency

Money Concepts

F1.1 identify different ways of representing the same amount of money up to Canadian 200¢ using various combinations of coins, and up to $200 using various combinations of $1 and $2 coins and $5, $10, $20, $50, and $100 bills	**Q:** Describe a situation when you start with 15 coins, trade some coins for coins of equal value, and end up with 11 coins.	Number • Page 41
	Q: You represent an amount of money with 28 coins, including 13 quarters. How many other coins (not 28) might you have used to represent that same amount? Explain.	
	Q: You show an amount of money using three or more bills and five or more coins. What might that amount be? What bills and coins might you have used? How could you show that amount of money with a different number of bills and coins?	
	Q: You have a certain amount of money worth less than $20. You trade coins and bills so that you have more bills and fewer coins but the same value of money. Describe the bills and coins you started and ended with. Think of three or more possibilities.	Number • Page 42
	Q: Is it always possible to show any amount of money worth more than $1 at least two ways with coins and/or bills? Explain.	Number • Page 43
	Q: How much could four coins be worth?	Number • Page 56
	Q: Choose three or more amounts of money that you can represent using six coins. How else could you show each of those amounts?	Number • Page 57
	Q: You buy two items. You pay for one with six coins and the other with four coins. What could the total price have been? List three or more possibilities. Prove that you are correct.	Number • Page 76
	Q: One price is 32¢ more than another price. One of the prices can be represented with eight coins. What could the two prices be?	Number • Page 76
	Q: When might you start with four bills and three coins, trade for bills and coins of equal value, and end up with six bills and seven coins?	Number • Page 93
	Q: You show an amount of money using three coins. What might that amount be?	Number • Page 114
	Q: You represent an amount of money with seven coins. What might that amount be? Is it sometimes possible to use fewer coins to represent that same amount? If it is, give an example.	Number • Page 114

F1.1 (continued)	**Q:** When you trade coins for different coins of equal value (e.g., one quarter for five nickels), how might the number of coins change?	Number • Page 116
	Q: Do you think it's usually or always useful to group coins of the same amount when you are counting a pile of coins? Why or why not?	Number • Page 116
	Q: When you estimate the value of a pile of coins, what coins do you pay the most attention to and what coins do you ignore?	Number • Page 116
	Q: How could two children have the same amount of money even though one has many fewer coins?	Number • Page 116

Grades K–3: Open Questions for the Three-Part Lesson • *Measurement* • *Patterning & Algebra* [MPA]

2020 Ontario Curriculum Expectations	Grades K–3: Open Questions for the Three-Part Lesson • *Measurement* • *Patterning & Algebra*	Book & Page Number
C. ALGEBRA		
C1. Patterns and Relationships **Overall Expectation:** By the end of Grade 2, students will identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts		
Patterns		
C1.1 identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts	There are no Grade 2 Open Questions that meet this 2020 curriculum expectation.	
C1.2 create and translate patterns using various representations, including shapes and numbers	**Q:** Make a pattern that has two different colours and two different shapes in it. Use a pattern for the colours that is different from the pattern for the shapes. Repeat these steps to make a second pattern. Tell how your two patterns are similar and how they are different.	MPA • Page 88
C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns represented with shapes and numbers	**Q:** What might come next in this pattern? Use pattern blocks to show your answer.	MPA • Page 68
C1.4 create and describe patterns to illustrate relationships among whole numbers up to 100	There are no Grade 2 Open Questions that meet this 2020 curriculum expectation.	

C2. Equations and Inequalities **Overall Expectation:** By the end of Grade 2, students will demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts		
Variables		
C2.1 identify when symbols are being used as variables, and describe how they are being used	There are no Grade 2 Open Questions that meet this 2020 curriculum expectation.	
Equalities and Inequalities		
C2.2 determine what needs to be added to or subtracted from addition and subtraction expressions to make them equivalent	There are no Grade 2 Open Questions that meet these 2020 curriculum expectations.	
C2.3 identify and use equivalent relationships for whole numbers up to 100, in various contexts		

C3. Coding **Overall Expectation:** By the end of Grade 2, students will solve problems and create computational representations of mathematical situations using coding concepts and skills		
Coding Skills		
C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential and concurrent events	There are no Grade 2 Open Questions that meet these 2020 curriculum expectations.	
C3.2 read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes		

C4. Mathematical Modelling **Overall Expectation**: By the end of Grade 2, students will apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations		
This overall expectation has no specific expectations. Mathematical modelling is an iterative and interconnected process that is applied to various contexts, allowing students to bring in learning from other strands. Students' demonstration of the process of mathematical modelling, as they apply concepts and skills learned in other strands, is assessed and evaluated.	There are no Grade 2 Open Questions that meet this 2020 curriculum expectation.	

E2. Measurement **Overall Expectation:** By the end of Grade 2, students will compare, estimate, and determine measurements in various contexts		
Length		
E2.1 choose and use choose and use non-standard units appropriately to measure lengths, and describe the inverse relationship between the size of a unit and the number of units needed	There are no Grade 2 Open Questions that meet these 2020 curriculum expectations.	
E2.2 explain the relationship between centimetres and metres as units of length, and use benchmarks for these units to estimate lengths		
E2.3 measure and draw lengths in centimetres and metres, using a measuring tool, and recognize the impact of starting at points other than zero	**Q:** On centimetre grid paper, draw an open shape using a 20 cm line that bends in several places. Then, draw the smallest rectangle you can that will go around the line. What is the length and width of the rectangle?	MPA• Page 10
	Q: The height of an object is a bit greater than its width. What might the object and its measurements be?	
	Q: Choose three lengths from 10 cm and 20 cm. Draw a quadrilateral using these three side lengths. What is the length of the fourth side?	
	Q: Choose a number between 10 and 25. Draw a stick figure that you think is about that tall in centimetres. Check to see how close you are.	MPA• Page 11
	Q: About how many centimetres long is hair that you would describe as "long hair"?	
	Q: Draw a triangle that is twice as high as it is wide.	
	Q: Choose a letter of the alphabet that you can draw using one continuous line. It doesn't matter if the line bends or curves. Draw it so that the total distance is 10 cm.	MPA • Page 88

Time		
E2.4 use units of time, including seconds, minutes, hours, and non-standard units, to describe the duration of various events	There are no Grade 2 Open Questions that meet this 2020 curriculum expectation.	

Grades K–3: Open Questions for the Three-Part Lesson
Geometry and Spatial Sense • Data Management and Probability [GSSDP]

2020 Ontario Curriculum Expectations	Grades K–3: Open Questions for the Three-Part Lesson *Geometry and Spatial Sense • Data Management and Probability*	Book & Page #
E. SPATIAL SENSE		
E1. Geometric and Spatial Reasoning **Overall Expectation:** By the end of Grade 2, students will describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them		
Geometric Reasoning		
E1.1 sort and identify two-dimensional shapes by comparing number of sides, side lengths, angles, and number of lines of symmetry	**Q:** How could you cut this square to get two triangles with nothing left over? How could you cut this square to get three triangles with nothing left over?	GSSDP • Page 46
	Q: Tell what you know is true about a triangle. Then, tell what you know is not true about a triangle.	GSSDP • Page 68
	Q: Draw three or four quadrilaterals (four- sided shapes) that look a lot different from one another.	
	Q: Describe what shapes you see in this picture.	
	Q: Choose one of the descriptions from the list below. Using a geoboard, make two or three shapes for the description that you choose. Have your shapes look different from one another.	GSSDP • Page 69
	Q: You start sorting attribute blocks with a sorting hoop like this: What sorting rule might you be using? Sort lots of attribute blocks using your rule.	GSSDP • Page 70
	Q: Sheena says that these shapes go together. Find or make three 2-D shapes that could go with them. Explain why the shapes could all go together.	
	Q: Why are there always lots of ways to sort 2-D shapes?	GSSDP • Page 71

E1.1 (continued)	**Q:** Pick one of these shapes: octagon hexagon pentagon quadrilateral Draw five or six examples of the shape that you chose that look a lot different from one another. Tell what is the same about your shapes. Tell what is different about your shapes.	GSSDP • Page 71
	Q: How are these pentagons similar? How are they different?	GSSDP • Page 106
	Q: A 2-D shape has an even number of vertices. What might the shape be?	GSSDP • Page 109
	Q: Which of the shapes below is most like a square? Explain your answer.	
	Q: Using the same colour, draw an example of these quadrilaterals… Tell what is similar and different about your square and your rhombus. Then, tell what is similar and different about your rhombus and your parallelogram.	GSSDP •Page 110
	Q: The quadrilaterals that go in the large hoop here follow a rule. The quadrilaterals that go in the small hoop follow a different rule but also follow the rule for the large hoop. Quadrilaterals that don't follow either rule go outside both hoops. Draw hoops like these on a sheet of paper. Come up with rules for the hoops that work for the descriptions above. Then, draw a total of 8 to 10 quadrilaterals inside and outside of the hoops by following your rules.	
	Q: The first hoop has a sorting rule. The second hoop has a different rule. Draw these hoops onto a sheet of paper. Make a rule for each hoop so that both of the shapes below will go in the same spot when sorted. Draw these shapes where they should go. Then, draw 10 or more other polygons where they should go according to your rules.	GSSDP •Page 111
	Q: Pick two of the shapes below, and tell as many things as you can about them that are alike and different.	GSSDP •Page 113
	Q: Draw and cut out two to four of each of the following shapes: triangles, quadrilaterals, pentagons, hexagons, heptagons, and octagons. Sort them three different ways: 1. First, make a rule about sides. 2. Next, make a rule about angles. 3. Then, make a rule of your own. Tell why there are so many ways to sort shapes.	GSSDP •Page 114

E1.1 (continued)	**Q:** Jessica is looking at something in the classroom that shows symmetry. What might it be?	GSSDP • Page 21
	Q: Draw three or four different shapes that are symmetrical. Use a tool to show that each shape is symmetrical, and draw the lines of symmetry onto each one. Then, draw three or four different shapes that are not symmetrical. Tell what you notice.	GSSDP • Page 22
	Q: Using pattern blocks, make a design with lots of lines of symmetry. Then, use a tool to show that your design is symmetrical on both sides of these lines.	
	Q: Henry is looking at a picture that shows symmetry. It contains lots of 2-D shapes. He uses a transparent mirror to decide which shapes in the picture are congruent. Draw what the picture might look like, and show how Henry could use the transparent mirror to see which shapes in it are congruent.	GSSDP • Page 23
	Q: Show or tell how you would convince someone that a 2-D shape shows symmetry.	GSSDP • Page 24
	Q: Sketch a shape that you know the name of. Then, sketch a shape that you don't know the name of.	GSSDP • Page 47
	Q: Which of these shapes do you think is the least like the others? Why?	
	Q: Draw sorting hoops like below. Then, draw at least 8 shapes to show how you might sort regular polygons, irregular polygons, and other shapes using this hoop arrangement.	GSSDP • Page 49

E1.2 compose and decompose two-dimensional shapes, and show that the area of a shape remains constant regardless of how its parts are rearranged	**Q:** Krishan folds a square and sees rectangles. Nolan folds a square and sees triangles. How is that possible?	GSSDP • Page 46
	Q: What are some shapes that you see in this picture?	GSSDP • Page 47
	Q: How could you use pattern blocks to fill this shape?	
	Q: Choose a pentomino shape. Then, trace your shape. Draw lines inside your tracing to break it up into geometric shapes that are not squares. Tell what shapes it contains.	
	Q: Use 2 to 10 tangram pieces to make a shape. Are there other ways that you can make this same shape using tangram pieces?	
	Q: Represent the number 8 by using 8 linking cubes. Break down the number into smaller numbers two or more different ways. Then, make a paper square. Break it down into smaller familiar shapes two or more different ways. How are breaking down a number and breaking down a shape similar? How are they different?	GSSDP • Page 48
	Q: Choose one of these shapes…Repeat this exercise for one of the other shapes above.	GSSDP • Page 69
	Q: Arrange these seven tangram pieces to make them look like something real. Then, challenge a partner to cover your design using different tangram pieces. Your partner can use any number or variety of tangram pieces.	GSSDP • Page 70
	Q: Use more than one pattern block to make a quadrilateral, a hexagon, and an octagon. Then, cover each of your shapes using different pattern blocks from the ones that you first used for each shape.	
	Q: Trace a hexagon from a pattern blocks set. Fill in its outline using different pattern blocks in four different ways. When might it be useful to know that a hexagon can be broken down in some of the ways that you chose?	GSSDP • Page 71

E1.2 (continued)	**Q:** You have a picture of something in your head. You think that quadrilaterals are the best shape to use to draw it. Draw your picture. Tell why quadrilaterals are the best shape to use for your drawing.	GSSDP • Page 71
	Q: Sit back to back with a partner. Make a design using seven pattern blocks that are touching one another. Describe to your partner how to make your design without letting him or her see it. After you are done, compare your designs. Tell what you notice.	GSSDP • Page 82
	Q: Imagine a shape that is made of a rectangle, a triangle, and a square. What might the shape look like?	GSSDP • Page 109
	Q: Working in a group, make six or more squares or six or more triangles using tangram pieces. Which of the squares or triangles that you created are congruent (the same size and shape)? Tell how you know.	GSSDP • Page 111
E1.3 identify congruent lengths and angles in two-dimensional shapes by mentally and physically matching them, and determine if the shapes are congruent	**Q:** Make a design on a geoboard using four or five elastics. Then, on a second geoboard, show a symmetrical design. What congruent shapes are in your two designs?	GSSDP • Page 22
	Q: Dani says that you need congruent shapes to make a picture that shows symmetry. Oliver says you do not need congruent shapes to make a picture that shows symmetry. Which person do you agree with? Explain your thinking.	GSSDP • Page 25
	Q: Draw one of each of these shapes: • a regular polygon • an irregular polygon • a shape that is not a polygon Then, tell the instructions that you would give someone to make an exact copy of each shape that you made.	GSSDP • Page 48
	Q: Which of these pictures is the most different from the others?	GSSDP • Page 106
	Q: Fold a sheet of paper to make two or more shapes that are the same size. Convince a partner that the shapes are the same size.	GSSDP • Page 109
	Q: Using the same colour, draw an example of these quadrilaterals… Tell what is similar and different about your square and your rhombus. Then, tell what is similar and different about your rhombus and your parallelogram.	GSSDP • Page 110

Location and Movement		
E1.4 create and interpret simple maps of familiar places	**Q:** Tell some things that you know by looking at this map.	GSSDP • Page 81
	Q: Draw a map of an outdoor space that you know well. Label the objects and areas in the space. Tell where your favourite object or area is compared to other points on your map. Then, pick two other areas on your map. Show how to get from one of the areas to the other by using arrows.	GSSDP • Page 82
	Q: Jonny and Sierra are watching the same soccer game. They each tell a friend where Emily and Nicolas are standing on the field. They say different things and are both correct. Draw a map of a soccer field to help you explain how this could be possible. Tell where Jonny and Sierra could be saying that Emily and Nicolas are standing.	GSSDP • Page 83
E1.5 describe the relative positions of several objects and the movements needed to get from one object to another	**Q:** How could you get from one of these shapes to the other?	GSSDP • Page 81
	Q: *(Provide students with the following grid:)* Draw a path from the hexagon to the rhombus. Describe the path. Then, describe the same path from the rhombus to the hexagon. Compare your descriptions. What is the same about your descriptions? What is different?	GSSDP • Page 83
	Q: Use four or more pattern blocks to show each of the following: a reflection (flip), a translation (slide), and a rotation (turn). Then, show an example that could be showing either a reflection or a translation.	GSSDP • Page 120
	Q: Choose two of the pictures below. Do you know for sure if a reflection,a rotation, or a translation happened in each picture? If not, explain why you are unsure about which type of change occurred.	GSSDP • Page 121
	Q: The is up and to the right of the . Fill in the blanks using the map below.	GSSDP • Page 53

D. DATA

D1. Data Literacy

Overall Expectation: By the end of Grade 2, students will manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life

Data Collection and Organization

D1.1 sort sets of data about people or things according to two attributes, using tables and logic diagrams, including Venn and Carroll diagrams	**Q:** How might you describe this object in different ways without saying its name?	GSSDP • Page 86
	Q: The first hoop has a sorting rule. The second hoop has a different sorting rule. The blue rectangle is in both hoops because it follows both rules. What else might go in each hoop? What else might go where the blue rectangle is?	
	Q: Choose two of these objects. Describe them to find three things about them that are alike and three things that are different.	
	Q: Make a rule for the first hoop. Make a different rule for the second hoop. Sort the shapes into the hoops.	GSSDP • Page 87
	Q: How can you describe your shoes in two ways? Make a sorting rule about shoes for each attribute. Use your sorting rules to arrange your classmates into the following groups	
	Q: A train of pictures starts like this: Exactly two things change about the stick figure each time that you go to the next section of the train. What stick figure could go in each box?	
	Q: Pick two of the attribute categories below. Then, list three examples for each category that you chose. What 3-D figure has an attribute from both of your lists?	
	Q: Jeeva describes two objects in as much detail as he can. How can this help him find two things that are the same about the objects? Show an example using objects from the classroom.	GSSDP • Page 88
	Q: How are sorting with a single hoop and sorting with two overlapped hoops similar? How are they different?	
	Q: Make a pattern that has two different colours and two different shapes in it. Use a pattern for the colours that is different from the pattern for the shapes. Repeat these steps to make a second pattern. Tell how your two patterns are similar and how they are different.	

D1.2 collect data through observations, experiments, or interviews to answer questions of interest that focus on two pieces of information, and organize the data in two-way tally tables	**Q:** What different ways might students in our class answer this question? What is your favourite vegetable? Tell why you think that they might answer the question this way.	GSSDP • Page 89
	Q: What questions might you ask your classmates that would help you plan a class party? Tell why you think asking these questions would be helpful.	
	Q: You would like to know how many of your classmates are wearing stripes. What might you do to make that easy to find out?	
	Q: You want to ask your classmates if they like one school subject more than another. Which two subjects could you ask your classmates about? Collect your classmates' answers, and organize them by using check marks on a labelled chart.	GSSDP • Page 90
	Q: What are three choices that you could give your classmates to answer the following question: Which is your favourite month? Ask your classmates the question. Ask them to choose one of the options that you provided. Record the data. Choose a way to organize your results. Include a title and labels for your data.	
	Q: I asked the class, "How many of the people you live with did you see yesterday?"	
	Q: You want to collect some data about your classmates' favourite muffin flavours. What question could you ask? What three answers would you give your classmates to choose from? How might asking a different group of people change the answers that you give people to choose from?	GSSDP • Page 91
	Q: A class of students was asked how they get to school every day. These were their answers. Tell how you might organize this information into a graph. What are some things that you might see on your graph?	GSSDP • Page 93
	Q: How many jumping jacks can each of your classmates do in 10 seconds? Collect the results, and display your data using two of these types of graphs: Tell some things that you know by looking at each of the graphs.	GSSDP • Page 95
	Q: What question could you ask your classmates about their names? Ask your classmates the question. Display their answers on a bar graph. What are two things that you know by looking at the graph? What are two questions that you have about the graph?	GSSDP • Page 96
	Q: Roll two number cubes at the same time. Do this 20 or more times. Record the sum that is rolled each time by using tally marks and this template: Compare the results that you obtained for two of the sums that you rolled. Then, compare the results of two more pairs of results.	GSSDP • Page 96

Data Visualization		
D1.3 display sets of data, using one-to-one correspondence, in concrete graphs, pictographs, line plots, and bar graphs with proper sources, titles, and labels	**Q:** Is asking a group of people to draw a symbol to represent their favourite sport a good way to collect and organize data for a graph? Why or why not?	GSSDP • Page 91
	Q: What advice would you give the person who made the following graph?	GSSDP • Page 92
	Q: Cameron says the following about a graph that he made…What might the graph look like?	GSSDP • Page 94
	Q: How many jumping jacks can each of your classmates do in 10 seconds? Collect the results, and display your data using two of these types of graphs: Tell some things that you know by looking at each of the graphs.	GSSDP • Page 95
	Q: What question could you ask your classmates about their names? Ask your classmates the question. Display their answers on a bar graph. What are two things that you know by looking at the graph? What are two questions that you have about the graph?	GSSDP • Page 96
	Q: The mode on a graph is "8," "no," or "yellow." Pick one of these modes, and create an example of a graph that has this mode.	GSSDP • Page 133

Data Analysis		
D1.4 identify the mode(s), if any, for various data sets presented in concrete graphs, pictographs, line plots, bar graphs, and tables, and explain what this measure indicates about the data	**Q:** What do you know by looking at this pictograph?	GSSDP • Page 93
	Q: What question could you ask your classmates about their names? Ask your classmates the question. Display their answers on a bar graph. What are two things that you know by looking at the graph? What are two questions that you have about the graph?	GSSDP • Page 96
	Q: Roll two number cubes at the same time. Do this 20 or more times. Record the sum that is rolled each time by using tally marks and this template: Compare the results that you obtained for two of the sums that you rolled. Then, compare the results of two more pairs of results.	
	Q: This graph helps you compare the shoe sizes of a group of primary students: Compare the categories on the graph. Then, tell what you know about the data in the graph. What are you not sure about? What questions could you ask to find out the answers?	GSSDP • Page 98
	Q: Tell how you might use the word "most" when talking about yourself or people who you know.	GSSDP • Page 131

D1.4 (continued)	**Q:** Predict what the mode (the value that appears the most often) might be if you asked your classmates these survey questions: • What is your favourite activity to do during recess? • What is your favourite healthy snack? • What do you watch on TV? Tell why you think that each of your answers makes sense. Then, give an example of when you use mode in your life.	GSSDP • Page 133
	Q: The mode on a graph is "8," "no," or "yellow." Pick one of these modes, and create an example of a graph that has this mode.	
	Q: Is it better to know the mode of a set of data or to see a graph of the data? Explain your answer.	GSSDP • Page 134

D1.5 analyse different sets of data presented in various ways, including in logic diagrams, line plots, and bar graphs, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions	**Q:** You are given the following information about a group of students: What Will You Do First After School Today? How does the way this information is organized make it easy to tell something about it? Organize the information in a different way that makes it easier to see something else about it. Explain your answer.	GSSDP • Page 91
	Q: Greg uses the number 4 to talk about his graph below. What might he say?	GSSDP • Page 92
	Q: Compare and describe these three columns of linking cubes	GSSDP • Page 93
	Q: What do you know by looking at this pictograph?	
	Q: How are the following graphs similar? How are they different?	
	Q: Shanice asks her classmates a survey question. She records the first response on a line plot like this. What question might Shanice have asked? Ask your classmates this question, and record the answers on a line plot. Tell what you learned.	GSSDP • Page 94
	Q: I asked the class, "What is your favourite season?" I got these results. What are some questions that you have about the data in this chart? What do you think the answers to your questions could be?	
	Q: Maya is looking at a graph and says the following…	GSSDP • Page 95
	Q: What question could you ask your classmates about their names? Ask your classmates the question. Display their answers on a bar graph. What are two things that you know by looking at the graph? What are two questions that you have about the graph?	GSSDP • Page 96
	Q: Roll two number cubes at the same time. Do this 20 or more times. Record the sum that is rolled each time by using tally marks and this template: Compare the results that you obtained for two of the sums that you rolled. Then, compare the results of two more pairs of results.	

D1.5 (continued)	**Q:** How is a (are) _____ like (a) _____? How are they different? Fill in the two blanks using two choices from below. Then, answer the two questions.	GSSDP • Page 97
	Q: Is it more helpful to display data on a bar graph or a line plot? Give an example to explain your answer.	
	Q: Ling reads a graph and says, "My shoes are size 2," and "There are 5 people altogether in our class whose shoes are size 2." How are these two statements similar? How are they different?	
	Q: Pick two of these pictures of organized data. How might you change them to make it easier to tell things about the data shown? Tell how these changes would make it easier to read the data.	GSSDP • Page 98
	Q: This graph helps you compare the shoe sizes of a group of primary students: Compare the categories on the graph. Then, tell what you know about the data in the graph. What are you not sure about? What questions could you ask to find out the answers?	
	Q: Imagine that these were the number of days that it was sunny, cloudy, or rainy in your city last May…How might knowing this help you?	GSSDP • Page 101
	Q: Is it better to know the mode of a set of data or to see a graph of the data? Explain your answer.	GSSDP • Page 134

D2. Probability **Overall Expectation:** By the end of Grade 2, students will describe the likelihood that events will happen, and use that information to make predictions		
D2.1 use mathematical language, including the terms “impossible”, “possible”, and “certain”, to describe the likelihood of complementary events happening, and use that likelihood to make predictions and informed decisions	**Q:** Think of a question to ask your classmates where they could answer with one of the following words or phrases ...	GSSDP • Page 59
	Q: Why might you answer this question in different ways? How likely is it that you are going to go to school tomorrow?	GSSDP • Page 61
	Q: Use these words to make a sentence. sometimes bike friend usually	GSSDP • Page 99
	Q: A bag has some linking cubes in it. You predict that you will sometimes pull a blue cube out of it and that you will pull a red cube out of it most of the time. What cubes might be in the bag?	
D2.2 make and test predictions about the likelihood that the mode(s) of a data set from one population will be the same for data collected from a different population	There are no Grade 2 Open Questions that meet this 2020 curriculum expectation.	

Grade 2 Open Questions that now align with other grades in the Ontario 2020 Curriculum

Grade 2 Open Questions that now align with Grade 1 Expectations		Grades/Book/ Page #
Grade 1 **E1.2**	**Q:** You start making a 3-D figure like this: What figure might you be making? What figure could you not be making?	Grades K–3 GSSDP • Page 72
	Q: What figures and shapes do you see in this picture?	
	Q: Which one of these objects do you think is the most different from the others? Explain your answer.	
	Q: Which of these figures do you think are the most alike? Explain your answer.	
	Q: Find three or four objects in the classroom that look similar to a rectangle-based prism. Tell as many ways as you can how rectangle-based prisms can be different from one another.	Grades K–3 GSSDP • Page 73
Grade 1 **E1.4**	**Q:** Think of an object in the classroom. Make a list of clues to help a partner find it. Start off with clues that could work for many different objects. Then, add more details to your clues each time to get your partner closer to finding the object. Ask your partner what the object might be after you give each clue. Don't say what your object is until your partner guesses after your final clue.	Grades K–3 GSSDP • Page 83
Grade 1 **E1.5**	**Q:** Go for a walk around the classroom. Walk under something. Next, walk around something. Then, walk between some things. Move near and around some other objects as well. Say what you are doing with each of your movements.	Grades K–3 GSSDP • Page 81

Grade 2 Open Questions that now align with Grade 3 Expectations		Grades/Book/ Page #
Grade 3 **E1.1**	**Q:** Make up a sorting rule about the faces of 3-D figures. Then, sort these figures into the sorting hoops using your rule. Afterwards, make up a sorting rule about vertices. Then, sort the figures using your new rule.	Grades K–3 GSSDP • Page 73
	Q: Build one or two prisms or pyramids with an even number of toothpicks. Use modelling clay to join the toothpicks. Then, build one or two prisms or pyramids with an odd number of toothpicks. Tell what figures you build each time. How many faces, edges, and vertices do your figures have?	Grades K–3 GSSDP • Page 74
	Q: Pick one of the following figures: triangle-based prism pentagon-based pyramid rectangle-based prism cube	Grades K–3 GSSDP • Page 75
	Q: Choose one of the following figures without saying your choice: ...	Grades K–3 GSSDP • Page 76

Grade 3 **E1.1** (continued)	**Q:** Using toothpicks and modelling clay, make two prisms that look different from each other. Then, make two pyramids that look different from each other. Tell all the things that you notice about each figure.	
	Q: If you know the number of vertices on the base of a 3-D figure, what else do you know for sure about the figure?	
	Q: Choose a cube, a prism, or a pyramid. Then, do the following:	Grades K–3 GSSDP • Page 77
Grade 3 **E1.2**	**Q:** A hexomino is a shape made from six squares. This hexomino folds into a cube:	Grades K–3 GSSDP • Page 74
	Q: Build a structure using six 3-D figures. Then, have a partner look at your structure for 3 seconds. Challenge your partner to recreate your structure. Compare your structures. Then, discuss what 2-D shapes are in your structures.	
	Q: Imagine that you need to build a tall tower out of 3-D figures. What 3-D figures and 2-D shapes would you expect to see more of at the bottom and top of your structure? Build a tall tower out of 8 to 10 blocks to show that your answer makes sense.	Grades K–3 GSSDP • Page 77
Grade 3 **E1.3**	**Q:** What do you notice about this design?	Grades K–3 GSSDP • Page 78
	Q: Use a Mira to show how you might reflect this pattern-block design in different ways.	
	Q: Deesha says that hexagons are symmetrical since they have two sides that look the same, but one is flipped. Jacob says that hexagons are not symmetrical. Which person do you agree with? Explain or show why you're right.	
	Q: Fold a sheet of paper in half. Cut shapes or an interesting design out from along its fold line. Open the sheet of paper. What do you notice?	Grades K–3 GSSDP • Page 79
	Q: Write your name with some upper case letters and some lower case letters. Then, do the following:	
	Q: Use two to four pattern blocks to make four new shapes. Use a Mira or a ruler to see if each new shape shows symmetry. Describe why each shape shows or does not show symmetry. Do any of your shapes show symmetry in more than one way?	
	Q: Choose two of the shapes below, and draw them. ...	Grades K–3 GSSDP • Page 80
	Q: Create a design using eight or nine pattern blocks that has exactly one line of symmetry. Then, create another design using eight or nine pattern blocks that has more than one line of symmetry. Use a Mira or ruler to show that your designs work.	

Grade 3 **D2.1**	**Q:** The answer to a question is “almost always.” What could the question be?	Grades K–3 GSSDP • Page 99
	Q: You predict that when a spinner is spun, its arrow is: ...	
	Q: Think of an event or a special tradition that you celebrate. Use all of the words below to talk about things that you do or that happen during the event or special tradition. certain likely unlikely impossible	Grades K–3 GSSDP • Page 100
	Q: Play a probability game with a partner where he or she will pull linking cubes out of a bag. Make at least two rules for your game. You can use the template below to help you, or you can come up with your own probability statements.	
	Q: If you placed one of each type of Canadian coin in a paper bag, what do you think is: ...	
	Q: Something is very unlikely to happen today, and you are happy about this. What could it be? Something else is very likely to happen today, and you are happy about that as well. What could it be? How is it possible that something very unlikely and something very likely can both be things that make you happy?	Grades K–3 GSSDP • Page 101
	Q: A probability line looks like this: ...	
	Q: Give two or three examples of how the words “equally likely” can be used in different situations.	

Grade 2 Open Questions that no longer align with the Grade 2 2020 Ontario Curriculum	Book/Page #
Q: Think of two fractions. Use pattern blocks to compare them. Which fraction is greater? How do you know?	Grades K–3 Number • Page 64
Q: Make several identical rectangles from different colour sheets of paper. Cut each rectangle into equal pieces, but make sure the pieces are a different size from the pieces in the other rectangles. Choose some pieces from each rectangle. Tell which piece or group of pieces is more of the original rectangle. Tell how you know.	Grades K–3 Number • Page 65