# GETTING READY FOR GRADE 4!
# MATH

This year in Grade 3 mathematics learning was focused on the following areas:
-Developing an understanding of multiplication and division
-Developing an understanding of fractions
-Finding area of rectangular and rectilinear shapes
-Describing, analyzing, and comparing shapes

Next year in Grade 4 your child will continue to develop their mathematic skills by:
-Reasoning about place value to 1,000,000
-Reasoning about fractions and operations with fractions
-Building, drawing, and analyzing shapes and their attributes

The following choice boards provide a sample of activities that your child might choose to do over the summer to reinforce and review concepts, begin to bridge new concepts for the following year, and keep their mathematical curiosity alive. Engagement in mathematics leads to more academic success, so giving students voice over how they do the work and choice over what work they do is crucial.

The choice boards are grouped by topic based on the reporting domains—Operations and Algebraic Thinking, Numbers and Operations in Base 10, Numbers and Operations with Fractions, Measurement and Data, Geometry, and Mathematical Practices. Have a conversation with your child about what areas they are interested in, what activities they would like to engage in, and what areas they would like to grow as a mathematician. Students are encouraged to revisit any activities they are interested in.

Try the tasks together and have fun thinking and working together.
-Remember every child can be a strong mathematician.
-Encourage your child to stick with a task even if it seems challenging.
-Listen carefully to how your child is thinking about math.
-If you see signs of frustration, leave the problem and return to it with fresh perspective later

Ask:

| If your child is stuck and unsure how to begin... | While your child is working.... | When your child has completed the problem and reflecting on the answer... |
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| -What do you know?<br><br>-What do you need to find out?<br><br>-How might you begin?<br><br>-What should you do first? | -How can you organize your information?<br><br>-Can you make a drawing to explain your thinking?<br><br>-What do you need to do next?<br><br>-Do you see any patterns?<br><br>-Does this remind you of any other problems you've done? | -Is your solution reasonable?<br><br>-Can you convince me that your solution makes sense? What did you try that didn't work?<br><br>-How do you know that your answer makes sense?<br><br>-Do you think there is more than one answer? How could we find out? |

| Numbers in Base 10: Place value to 1,000 | | |
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| Create your own 'Which one doesn't belong'. Write 4 different 3-digit numbers. Find a way that 1 number does not belong to the rest (For example, 135 is odd but the rest of the numbers are even). Create a reason for each number. | Choose a number below 1,000. Write down everything you know about that number. Ask your family members what else they know about the number. | The answer when you subtract a 3-sigit number from another 3-digit number is 249. What are some possible number sentences that would make this true?<br><br>__ __ __ - __ __ __ = 249 |
| Learn to count forwards and backwards by 10s up to 200 in a language you do NOT know. What patterns do you hear when you say the words? | Ask someone in your family to tell you 4 different digits. What are all the different numbers you can make? Put them in order from least to greatest. | Do the 1,000 exercise challenge! Choose 5-10 different exercises and decide how many of each you will do. The total must be exactly 1,000! |
| Create a menu of your favorite foods for your dream restaurant. Give each item a price. Ask family members to order food and tell them the total price of their food. Bonus: Make a menu using a different currency! | Draw a map of your house. Show where you walk and record your steps. Do you think the total is more than 500 or less than 500? How do you know? | Find 4 numbers larger than 1,000 in a newspaper or in online articles. Put them in order from least to greatest. What is the difference between the smallest and the largest? |

| Operations and Algebraic Thinking: Multiplication and division, solving multi-step problems | | |
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| The answer to a multiplication problem is 16 (or 20, 24, 36, 54, 72). What are all the different number sentences it could be? | I multiplied 2 odd numbers and I got a product that was less than 30. What are all the possible number sentences? | The answer to a division question is 3. What might the question be? How do you know? |
| Would you rather have 8 rows of 3 candy bars, 6 rows of 5 pieces of pizza, or 4 rows of 7 dumplings? Why?<br><br>Write your own multiplication "Would you rather" questions. | Would you rather have 2 tables with 9 chairs or 4 tables with 5 chairs at your birthday party? Why? | Create your own 'Which one doesn't belong' with arrays. Find a way that 1 item does not belong to the rest (For example, the stars array does not belong because the total is an off number and the rest are even). Create a reason for each array. |
| Write your own multiplication "Would you rather" questions and ask your family members | Write a story problem that requires multiplication and subtraction to solve. Pretend to be a teacher and teach them how to solve them using your favorite strategy | Write a story problem that requires division and addition to solve. Pretend to be a teacher and teach them how to solve them using your favorite strategy |

| Number and Operations with Fractions: Understanding fractions as numbers | | |
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| Would you rather eat ½ a plate of vegetables of 6/6 of a plate of vegetables? Why? Write your own "Would you rather" fraction questions to ask your family. | Create your own 'Which one doesn't belong' with fractions. Find a way that 1 item does not belong to the rest (For example, 7/12 does not belong because the top number is more than 5 and the rest have a top number less than 5). Create a reason for each fraction. | Find two examples of fractions in the real world. What are two ways the fractions are the same and two ways the fractions are different? |
| Name five fractions that are not equivalent to 1/2. Choose at least two and write a story problem. | Read Fraction Fun on Epic. Write your own fraction book! | Create number cards and a fraction game. Write down the rules and teach it to your family. |
| Go on a fraction walk. Find at least three examples of fractions in the real world. They could be with numbers, words, or pictures. | Draw a square. Show at least five different ways to represent ½. Show at least three different ways to represent ¼. | Plan a meal for your family. With an adult, make a list of the ingredients, go shopping, and then follow the recipes. Are there fractions in your recipes? |

| Measurement and Data: Area, weight and volume, representing data | | |
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| What are all the different rectangular and rectilinear figures you can make with an area of 48? Draw them. | A shape made from two rectangles has an area of 36. Draw at least 4 different possibilities of what the shape might look like. | Pick a room in your house. Estimate the area. Then measure it. How close were you? |
| Find a newspaper and cut the articles or pictures out. Organize them by area from least to greatest. | Roll 2 dice and multiply to find the product. Record the products. Do this 25 times. Create a bar graph with the results. What do you notice? | Make a bar graph of the different types of items in your refrigerator. Be sure to include a title and labels. What do you notice? |
| Read the different labels on the liquids in your refrigerator. What is the total volume in liters and milliliters? | Create a schedule for your day with times, activities, and how long it will take to complete each activity. The next day create a schedule for your family. | Record the times of everything you do all day beginning with waking up and ending with going to bed. How much time do you spend eating? How much time do you spend in front of a screen? What other things you notice? |

| Geometry: Shapes and their attributes | | |
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| Find a quadrilateral in your house. Find a rhombus in your house. Name two ways they are they same and two ways they are different. | Go on a Scavenger Hunt to find all the right angles in your room. The next day find all the right angles in another room. | Find 'almost' shapes. Find things that are 'almost' a quadrilateral, rhombus, square, or rectangle. Describe why they are NOT that shape. |
| A shape has a perimeter of 18cm. Draw and label 5 possible shapes. | Find 5 different rectangles in your room. Predict which shape has the greatest perimeter. Measure to find out. Were you correct? How do you know? | Would you rather run two laps around a square running track that is 40 meters on each side or three laps around a rectangular running track with a perimeter of 100 meters? Why? |
| Create a sign for the door to your bedroom using only quadrilaterals. Your parents must be able to read it! | How many times can you fold a piece of paper in half? Predict and try. Try it with 4 different sizes of paper. Can you make the same number of folds with all sizes? | What are all the things you see out the window that are quadrilaterals? Draw them. |

| Mathematical Practices: Problem Solving, Modeling, Communicating Reasoning | | |
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| Gather two different items in your house. Name 3 ways that they are the same and 3 ways that they are different. | Create your own fun 'Which one doesn't belong'. Gather 4 different objects in your house. Find a way that 1 item does not belong to the rest (For example, the cookie does not belong because it is round and the other objects are square). Create a reason for each item. Ask your family to give reasons too! | Draw or take a picture of a building. What are all the different math questions you could ask? Ask another family member to think of 3 questions. |
| Draw a picture of yourself as a strong mathematician. Label what tools you need and write what you would do. | Write fun "Would you rather...?" number questions. For example "Would you rather have 13 large scoops of ice cream or 23 small scoops of ice cream? Why?" or "Would you rather have 10 minutes of free time at 9:00 and 15 minutes of free time at 10:00 OR 30 minutes of free time at 11:00? Why?" | Think of your favorite places at ISB (the playground, your classroom, the dome). From memory try to draw it and label as many parts as you can. |
| Create a number poster of important numbers in your life (your age, number of people in your family, your house numbers). Be sure to label what each number is! | Create a family workout based around a certain number up to 100. Have your family do the exercises with you. (For example if the number is 61 you could do 61 jumping jacks, 61 push ups, run for 61 seconds...) | Create activities for your family to do all based around a number. (For example if you choose 20 you might choose to have everyone read for 20 minutes, play outside for 20 minutes, eat 20 bites of food...) |