September 2011 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
			1 Start at 3. Multiply by 2 and add 3 to get the next term. Continue the pattern until you get to the fifth term. Is this a growing or shrinking pattern? Why?	2 If you surveyed the members of your household about their favourite type of ice cream, would this be a good representation of the preferences in your community?
5 What would be the best graph to show students' favourite TV show: a bar graph or a line graph? Can you explain your thinking?	6 Use the following digits and a decimal point to create the least and greatest numbers: 9, 0, 4, 1	7 Is 4.9 closer to 4 or 5? Is it closer to 4.1 or 4.0? Explain to someone how you know.	8 What is the value of the "8" in the following number: 28 519 ?	9 Start at 2. Multiply by 3 and subtract 1 to get the next term. Continue the pattern until you get to the fifth term. Is this a growing or shrinking pattern? Why?
12 Is 7.09 closer to 7 or 8? Is it closer to 7.1 or 7.0? Explain to someone how you know.	13 What would be the best graph to show the daily temperature for the month: bar graph or a line graph? Can you explain your thinking?	14 What is the value of the "3" in the following numeral: 134 709 ?	15 Can growing patterns only involve multiplication and addition? Explain your thinking to someone.	16 Survey 20 people to determine their eye colour. Record your data in a chart and a graph.
19 If you surveyed the ages of 100 people, what might the age categories be on the horizontal axis of your graph?	20 What is the value of the "4" in the following number: 1 490 212 ?	21 Use the following digits to create the least and greatest numbers: 7, 0, 1, 8, 4, 4	22 Draw pictures to represent this pattern: 2, 3, 5, 8, 12, 17	23 If you surveyed 100 people to determine their favourite food, would it make sense to count by ones on the vertical axis of your graph?
26 Is 1.009 closer to 1 or 2? Is it closer to 1.1 or 1.0? Explain to someone how you know.	27 Use the following digits to create the least and greatest numbers: 6, 3, 8, 4, 2, 0, 5	28 What is the value of the "7" in the following number: 7 903 919 ?	29 Use the following digits to create the least and greatest numbers: 3, 9, 0, 4, 8	30 In the number 2 472, the value of the 7 is 70. What is the value of the "6" in the number 4 633 ?

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October 2011 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
3 Put these numbers in order from greatest to least: 33.01, 1.33, 1.6, 7.01, 1.03, 1.331	4 What is the mean of the following set of values: 7.5, 18, 2, 16.1, 44, 3, 3 ?	5 Use the following digits and a decimal point to create the least and greatest numbers: 2, 3, 5, 5, 9, 0, 7	6 What will the 9th number in this pattern be: 1.5, 3.0, 6.0, ... ?	7 Using the following digits and a decimal point to create the least and greatest numbers: 9, 0, 4, 1
10 What is the value of the “2" in the following number: 3 418.2 ?	11 Can you find examples of charts or graphs at home (try a magazine, newspaper, or the internet)? What can you interpret from the graphs?	12 Put the following numbers in order from least to greatest: 4.5, 8.02, 9, 2.33, 1.4	13 Using the following digits and a decimal point to create the least and greatest numbers: 7, 3, 1, 6, 2	14 What will be the next term in this pattern: 42, 22, 12, 7, ____ ?
17 What is the mean of the following set of values: 12, 4, 36, 20, 16, 8 ?	18 Put the following numbers in order from least to greatest: 6, 56.7, 19.08, 33.001, 0.002	19 What is the value of the “5" in the following number: 61 702.25 ?	20 Draw pictures to represent this pattern: 12, 8, 6, 5, 4.5	21 What is the mean of the following set of values: 8, 14, 6, 22, 4, 4, 4, 12?
24 Put these numbers in order from greatest to least: 1.9, 1.0, 0.1, 0.11, 1.99, 1.999, 2.0	25 Using the following digits and a decimal point to create the least and greatest numbers: 6, 9, 3, 4, 5, 0	26 Create a growing pattern using two operations. Challenge someone to identify your patterning rule.	27 What is the mean of the following set of values: 1.5, 4.0, 1.1, 10.5, 8.1 ?	28 What is the value of the “1" in the following number: 44 505.991?
31 Can you find numbers in the thousands that are written in words (e.g. “Two-hundred thousand, six hundred, forty five”)?				

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November 2011 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
	1 Write five three-digit numbers. Use mental math to multiply each number by 10, 100, and 1 000.	2 Skip count by fives to 100, then backwards to 0. Skip count by fifties to 1 000, then backwards to 0.	3 Skip count on paper by threes to 60. Now do the same by sixes. What patterns do you see that can help you remember your six	4 Which of the following are prime numbers: 1, 2, 6, 7,10, 11, 15, 17, 18, 19, 24 ?
7 Identify all of the prime numbers between 0 and 30.	8 Identify all of the prime numbers between 0 and 100.	9 List all of the possible factors for the following numbers: 3, 9, 12, 16, 18, 20, 24, 25	10 Use two different charts to sort the following numbers in two different ways: 11, 13, 16, 33, 35, 12, 20, 19	11 Is (250 + 10) X 2 the same as (250 X 2) + (10 X 2)? Explain your thinking to someone. Note: Complete brackets first!
14 Draw a rectangle. Now turn this into a pararallelogram with two sets of parallel sides. What happened to the angles?	15 If a square has an area of 16 cm^2, what must the side lengths be?	16 What unit of measurement would be best to measure the length of a fence? A book? A ladybug?	17 What are the similarities and differences between a rectangle and a parallelogram? Record your ideas in a Venn Diagram.	18 Draw four polygons with three or more lines of symmetry. Mark their lines of symmetry.
21 Construct a triangle with a perimeter of 22 cm. What type of triangle did you make?	22 Estimate the area of your room. Which room in the house is closest in area to your room?	23 Draw a rectangle, and dissect it into two triangles. How are the triangles related to the rectangle? Think of sides, side lengths, angles, perimeter, area....	24 Draw as many polygons as you can with only 2 lines of symmetry. Mark the lines of symmetry.	25 Can you make an equilateral triangle with a perimeter of 36 cm, using only whole numbers (no decimals)? 34 cm?
28 Draw a parallelogram, and dissect it into two triangles. How are the shapes related? Think of sides, side lengths, angles, perimeter, area....	29 Create a shrinking pattern using two operations. Challenge someone to identify your patterning rule.	30 Write five three-digit numbers. Use mental math to double each number.		

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December 2011 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
			1 Draw a rectangle. Can you cut it into two pieces and rearrange it into a parallelogram?	2 Make a T-chart with the headings ACUTE and OBTUSE. Sketch 4 angles for each column. Estimate their measure in degrees.
5 If your tap drips 2mL every second, how much water is wasted in a minute? An hour? A day?	6 Can you construct a regular hexagon with a perimeter of 42 cm, using only whole numbers (no decimals)? 40 cm?	7 Classify these angle measures by type of angle: 45°, 180°, 135°, 90°, 99°	8 Construct a quadrilateral with one right angle. Can you also make it with a set of parallel sides?	9 Which whole numbers between 0 and 20 could be the perimeter of a regular pentagon? Draw one of these pentagons.
12 Construct a rectangle with an area of 12cm^2. Can you draw a different rectangle with the same area?	13 Classify these angle measures by type of angle: 33°, 100°, 89°, 22°, 113°	14 Draw a parallelogram. Divide it into two congruent triangles. Compare the triangles with the parallelogram (area, base...).	15 Find a clock with hands. Starting at 3:15 and going clockwise, what time would it be when the minute hand rotates 90°? 180°?	16 What would be a reasonable method for measuring the distance from your house to the school? What unit of measurement would you use?
19 Draw as many rectangles as you can with an area of 24cm^2.	20 Sketch a quadrilateral with two acute and two obtuse angles. Does it have to be a parallelogram? Can it be a parallelogram?	21 If six candy bars of equal length total 1.5m, how long in centimeters is each bar? Would these be large, average, or small bars?	22 Find five things in your house that are approximately one litre.	23 Find a clock with hands. Starting at 9:45 and going counter clockwise, what time would it be when the minute hand rotates 90°? 180°?
26 What is the product of 3.467 X 10? X 100? X 1 000? Use mental math.	27 Estimate, then calculate the number of weeks you have been alive.	28 How many times would you need to multiply 0.001 by ten to reach 100?	29 Draw three different parallograms. What can you say is true about their side lengths?	30 Draw as many polygons as you can with no lines of symmetry. If a square garden plot has an area of 3.2 m^2, how many centimeters must the side lengths be?

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January 2012 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
9 What is the product of 2.519 X 10? X 100? X 1 000? X 10 000? Use mental math.	10 Estimate, then calculate the number of days you have been alive.	11 Draw an equilateral triangle. How can you use this to build a regular hexagon. What can you observe about the angles?	12 Draw an isosceles triangle with side lengths of 5 cm, 5 cm, and 3 cm. If you double the side lengths, what happens to the perimeter?	13 Equipment for camping weighs 90 kg. How can the weight be divided fairly amongst 18 campers? How many grams would each person carry?
16 If you were to write counting rows of 9, on which row would 48 land? How about 104?	17 Draw an irregular hexagon (a hexagon with all different side lengths). What can you observe about the angles?	18 Estimate, then calculate the number of hours you have been alive.	19 Draw an isosceles triangle with side lengths of 5 cm, 5 cm, and 3 cm. If you double the side lengths, what happens to the area?	20 Draw a triangle with a base of 5cm and a height of 4cm. What is its area?
23 Each day, a candy factory produces 6 400 000 candies packed into bags of 64 candies each. How many bags do they make in a 5-day work week?	24 What is the product of 329 X 0.1? X 0.01? X 0.001? Use mental math.	25 Draw a parallelogram with a base of 5cm and a height of 4cm. What is its area? What would be the area of a triangle with the same dimensions?	26 If all 168 students at Happy Place School were grouped into 8 classrooms, how many students would be in each class? Use mental math.	27 Can you find objects in the shape of 6 different polygons in your house (triangle, pentagon, ...)?
30 Can you find examples of scalene, isosceles, and equilateral triangles around your home?	31 Find triangular shapes around your home. Estimate their perimeters and areas.			

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February 2012 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
		1 Can a right angle triangle also be an equilateral triangle? Prove your thinking to someone.	2 How could you use mental math to estimate the sum of 24 + 29 + 21 + 27? Could you use multiplication?	3 What is the rotational symmetry of an equilateral triangle? An isosceles triangle? A scalene triangle? Show someone how you know.
6 Write three words using only UPPER CASE letters that have two lines of symmetry.	7 If x X 3 = 12 and x X 3 + q = 20, what value does q represent?	8 Yummy Bakery made 486 loaves of bread, and sold the same amount to six different stores. How many loaves did each store buy? Use mental math.	9 Can a right angle triangle also be an isosceles triangle? Prove your thinking to someone.	10 Each day this week, the theatre sold 193, 222, 278, 393, and 512 tickets. Kylee estimates they sold 1 900 tickets for the week. Is her estimate reasonable?
13 What is the value of n in the equation 100 ÷ n + 4 = 29?	14 Can a right angle triangle also be a scalene triangle? Prove your thinking to someone.	15 If 1 000 ÷ t = 200 and t X n X 2 = 40, what is the value of n?	16 What type of triangle would help you to build a regular pentagon: an isosceles or an equilateral triangle? Show your proof to someone.	17 What is the value of s in the equation 20 X 5 = s X 25 ?
19 What is the value of c in the equation 1 000 ÷ c + 100 = 350?	20 Cut out an isosceles triangle. Trace it on a piece of paper, and label each vertex (Δ ABC). Rotate 180°clockwise around point B. Trace again.	21 Can you create a polygon using only two sides? Explain your thinking to someone.	22 What is the value of y in the equation 12.5 X 4 = y ÷ 5 ?	23 Cut out an isosceles triangle. Trace it on a piece of paper, and label each vertex (Δ ABC). Rotate 90°counter clockwise around point B.
26 Cut out a square and trace it on another piece of paper. Show someone why a square has a rotational symmetry of 4.	27 Draw a parallelogram with an area of 18cm^2. Can you draw a different parallelogram with the same area?	28 If everyone drank a litre of water per day, how many litres would your family need for one week? How many mL would this be?	29 What are the side lengths of a rhombus with a perimeter of 48cm?	30 Dr. Science found 1 293 specimens and sorted them into 3 equal groups. How many specimens were in each group? Use mental math.

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March 2012 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
			1 How are $2x$ and $x/2$ different? How are they related?	2 In the expression $2(x)$, the 2 is asking to do what to the term?
5 What is the area of Δ QRS if the base is 6 cm and the height is 9 cm? What is the area of a parallelogram with the same dimensions?	6 Is 3.09 closer to 3.0 or 3.1?	7 Can you find numbers around your home which include decimals? What are the numbers used for?	8 Listen to the news. List five ways that numbers are used to explain something.	9 What is the area of a parallelogram with a base of 4 cm and a height of 6 cm? What is the area of a triangle with dimensions twice as big?
12	13	14	15	16
19 In what ways are ½ and 50% the same? In what ways are they different?	20 Draw a cereal box or other rectangular prism. Now rotate and flip it and try drawing it from a different perspective.	21 What is the probability of rolling an even number on a dice? How would you express this as a ratio?	22 Determine whether 4/7 or 4/10 is larger. How could knowing ½ help you to prove your thinking?	23 Do 2/5, 4/10, and 40% equal the same quantity? Explain your thinking to someone.
26 Use a few small boxes to create a 3-d shape. Draw them. Now move to look at your shape from a different perspective, and try drawing it again.	27 If a one litre water jug is just under 75% full, how many mL of water are in the jug?	28 True or false. The volume of a triangular prism is half that of a rectangular prism. Explain.	29 If n + 2.5 = 10 and n+ n + s = 19, what value does s represent?	30 If... □ +□ = ♡ and ...✹+♡ = □ + □ + □ then .....□ =?

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April 2012 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
2 Can you find examples of right, acute, and obtuse triangles around your home?	3 If 23 out of 95 people surveyed prefer red cars, approximately what per cent of buyers might choose a red car?	4 If a rectangular prism has a base of 25 cm^2, and side lengths of 10 cm, what is its volume? Try using mental math and pictures only.	5 Use mental math to calculate 2.4 ÷ 6. Use mental math to calculate 25.5 ÷ 5.	6 A rectangular prism has square end faces with a length of 4 cm. The side faces are 10 cm long. Draw a net for the prism.
9 Use or draw a 10 X 10 grid. Prove to someone that 1/5 = 20%.	10 If a rectangular prism has square end faces, how many of the side faces will be congruent?	11 Create a picture explanation to show that ⅛ is the same as 12.5%. Explain your picture to someone.	12 If a rectangular prism has rectangular end faces, how many of the side faces will be congruent?	13 True or false: 6 pears to 11 plums is the same ratio as 18 pears to 33 plums. Explain your thinking to someone.
16 Use what you know about numerators and denominators to determine which is larger: 4/3 or 11/10	17 Maddie has a present to wrap. It is in a box with a length of 30 cm, a width of 20 cm, and a height of 50 cm. What is the total area of the wrapping paper she will need?	18 Use mental math to calculate 600 ÷ 10. Use mental math to calculate 600 ÷ 100. Use mental math to calculate 600 ÷ 1 000.	19 True or False: The probability of being born in March is 1/12? Discuss your thinking with someone.	20 True or false 1 = 2/16 + ½ + 1/4 ?
23 Think about how a ratio and a fraction are the same and different. Tell someone your thinking.	24 If you divide a spinner into 4 equal sections (A, B, C, D), what is the probability that you will land on D when you spin once?	25 The coach wants to order 18 new team shirts, for a total cost of $396. How much does each shirt cost?	26 The surface area of a rectangular prism is 210 cm^2. The square end faces have an area of 25 cm^2 each. What is the area of one side face?	27 Mika's goal is to jog 1.5 km daily. This past week he jogged a total of 7.7 km. Did he achieve his goal?
30 If you divide a spinner into 4 equal sections (A, B, C, D), what is the probability that you will land on D when you spin 100 times? 20 times?				

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May 2012 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
A closed box has six faces. What 3-d shapes could the box be? If it had only five faces, what 3-d shapes could it be?	1 How could you change a die to increase your chance of rolling a 5?	2 Draw four circles divided into quarters. Use the first two circles to shade in 1 ½ . Use the last two circles to shade in 7/4. Which is the greater amount?	3 There are 50 candies in a bag. The probability of drawing a lemon candy is 1/5. How many lemon candies are in the bag?	4 Put the following numbers in order from least to greatest: 7/10, 48%, 2/3, 1 ½, 3/4, 7/4
7 A triangular prism has a height of 8 cm and a base of 12.5 cm. The prism is 20 cm long. What is the surface area of the prism?	8 If approximately 25% of the students in your class were boys, what would be the ratio of girls to boys? Of girls to the whole class?	9 The base area of a triangular prism is 25 cm^2. The height of the prism is 6 cm. What would the volume of the prism be?	10 If 0 means "impossible" and 1 means "certain", how would you describe (using a number) the probability of tossing a coin and getting "heads"?	11 Selena says her class is made up of 80% boys. Is this possible? Is it likely?
14 If all cards are in a deck, what is the probability of drawing a 7? A black 7? A 7 of clubs?	15 Draw a net for a rectangular prism. Draw a second one with double the dimensions. Does this double the surface area?	16 Draw a net for a rectangular prism. Draw a second one with double the dimensions. Does this double the surface area?	17 The base area of a triangular prism is 30 cm^2. The volume of the prism is 150 cm^3. What is the height of the prism?	18 If all cards are in a deck (no jokers) what is the probability of drawing a face card?
21 In a survey of 500 people, 25% said they are afraid of the dark. How many respondents are afraid of the dark?	22 In a classroom of 24 students, 6 are left-handed. What is the ratio of right-handed to left-handed students? Of right-handed students to the whole class?	23 Draw a net for a triangular prism. Draw a second one with double the dimensions. Does this double the volume?	24 Draw a net for a triangular prism. Draw a second one with double the dimensions. Does this double the surface area?	25 Six shotputs weigh a total of 13.64 kg, how many grams does one shotput weigh?
28 In a box of 45 candies, 9 were red. What is the ratio of red candies to the number of candies in the box? What percentage of candies are red?	29 If a spinner is divided into 6 equal sections labelled A, A, B, C, D, E, what is the probability that you will land on A if you spin once?	30 Cut two strips of paper 16 cm long each. Use the two strips to show that 6/8 and 3/4 are equivalent.	31 If your faucet dripped once every five seconds, do you think the amount of water lost would fill a glass, a sink or a tub? Why?	

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June 2012 Grade Six

Monday	Tuesday	Wednesday	Thursday	Friday
				1 If John was 6.5 cm taller than he is now, he would be twice as tall as Stu. If Stu is 65.25 cm tall, how tall is John?
4 True or false 240 x 17 is equal to 200 x 10 + 40 x 7 ? Prove your thinking.	5 Think of a shape. Play 20 questions with a partner to identify the shape you selected. Switch roles.	6 Find at least two different ways to solve this equation: 35 074 ÷ 2 = ?	7 Think of what happens to a decimal number when you divide it by 10. When would knowing this be helpful?	8 Can you list at least 25 ways that mathematics is used by someone in your house?
11 Write an equation, using all four operations, in which every step contains the number 5.	12 Try to find a wall in your house with an area of about 10 square metres.	13 What is your favourite number? Tell someone why.	14 You do not have a protractor. How can you figure out if an angle is acute or obtuse?	15 How many squares are there in the border of a 10 x 10 grid? Explain your reasoning.
18 A palindrome is a number that reads the same way forward and backward. Write 2 five-digit palindromes. If you add them will they make a new palidrome?	19 Name 5 jobs that use Mathematics. Ask an adult how they use math in their lives at home and work.	20 Is a square also a rectangle? Explain your thinking to someone.	21 Are these equations equal? Show your thinking to someone: 6 x 700 and 60 x 70 and 600 x 7 and 6000 x 0.7.	22 2How can you figure out the capacity of a container if it is not labelled?
25 If every letter of the alphabet has a numerical value, 1 through 26, what is "J-U-N-E" worth?	26 How many seconds until summer holidays?	27 Think of a 4 digit number that represents you. Explain how the number represents you.	28 If math were a song, what song would it be? Explain why you think this.	29 Your faucet drips once every 5 seconds. How could you determine how much water is wasted in a day?

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