Name: _____ Date: _____

Math 8 Numbers *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning* *[ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*	Still Learning	On My Way	With Ease
General Outcome: Develop number sense.			
The big ideas/Enduring Understandings (Rocks)	**Include evidence.**		
Can I demonstrate an understanding of perfect squares and square roots (limited to whole numbers)? ***[C, CN, R, V]*** ❑ I can determine whether or not a number is a perfect square by using grid paper or square shapes. ❑ I can determine whether or not a number is a perfect square by using prime factorization. ❑ I can determine whether or not a number is a perfect square by using reasoning. ❑ I can determine the square root of a perfect square. ❑ I can determine the square of a given number.			
Can I demonstrate an understanding of percents from 0%-100% +? ***[CN, PS, R, V]*** ❑ I can describe why a percent may be > 100% ❑ I can describe why a percent may be between 0% & 1%. ❑ I can represent a percent using grid paper. ❑ I can examine a shaded region on a grid to determine percent. ❑ I can express a percent in decimal form. ❑ I can express a percent in fraction form. ❑ I can express a decimal in percent form. ❑ I can express a decimal in fraction form. ❑ I can express a fraction in decimal form. ❑ I can express a fraction in percent form. ❑ I can solve problems involving percents. ❑ I can solve problems involving combined percents, (e.g., addition of percents, such as GST + PST). ❑ I can solve problems that involve finding the percent of a percent; (e.g., "A population increased by 10% one year and by 15% the next year. Explain why there was not a 25% increase in population over the two years.")			
Can I demonstrate an understanding of ratio and rate? ***[C, CN, V]*** ❑ I can express a ratio in the forms 3:5 or 3 to 5. ❑ I can express a given rate, using words or symbols; e.g., 20 L per 100 km or 20 L/100 km. ❑ I can calculate and compare unit rates. ❑ I can identify and describe ratios and rates from real-life examples.			
Can I solve problems that involve rates, ratios and proportional reasoning? ***[C, CN, PS, R]*** ❑ I can solve for the unknown in a proportion to solve problems. ❑ I can draw and interpret scale diagrams. ❑ I can represent and analyse reductions and enlargements.			
****Can I demonstrate and understanding of adding and subtracting positive fractions and mixed numbers, concretely, pictorially and symbolically?*** *(Only for the 2008/2009 school year)* ❑ *I can add fractions* *☺ pictorially ☺ concretely ☺ symbolically* ❑ *I can subtract fractions* *☺ pictorially ☺ concretely ☺ symbolically* ❑ *I can add mixed numbers* *☺ pictorially ☺ concretely ☺ symbolically* ❑ *I can subtract mixed numbers* *☺ pictorially ☺ concretely ☺ symbolically* ❑ *I can express a positive mixed number as an improper fraction.* ❑ *I can express a positive improper fraction as a mixed number.* ❑ *I can solve problems involving adding and subtracting positive fractions.*			

Name: _____ Date: _____

Math 8 Numbers

[C] *Communication* ***[PS]*** *Problem Solving* ***[CN]*** *Connections* ***[R]*** *Reasoning*
[ME] *Mental Mathematics and Estimation* ***[T]*** *Technology* ***[V]*** *Visualization*

The big ideas/Enduring Understandings (Rocks)	Still Learning	On My Way	With Ease
	Include evidence.		
Can I demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially and symbolically? ***[C, CN, ME, PS]*** ❑ I can estimate the product of two positive proper fractions to determine if the product will be closer to 0, 1/2 or 1. ❑ I can estimate the quotient of two positive fractions, and compare the estimate to whole number benchmarks. ❑ I can express a positive mixed number as an improper fraction. ❑ I can express a positive improper fraction as a mixed number. ❑ I can multiply positive fractions ☺ pictorially ☺ concretely ☺ symbolically ❑ I can divide positive fractions ☺ pictorially ☺ concretely ☺ symbolically ❑ I can multiply positive mixed numbers. ❑ I can divide positive mixed numbers. ❑ I can solve a problem with positive fractions (and positive solutions), considering order of operations.			
Can I demonstrate an understanding of multiplication and division of integers, concretely, pictorially and symbolically? ***[C, CN, PS, R, V]*** ❑ I can multiply integers ☺ pictorially ☺ concretely ☺ symbolically ❑ I can divide integers ☺ pictorially ☺ concretely ☺ symbolically ❑ I can generalize and apply a rule for determining the sign of the product and quotient of integers. ❑ I can solve problems involving integers, considering order of operations.			

Important to know and be able to do (Sand)			
	Include evidence.		
Can I determine the approximate square root of numbers that are not perfect squares (limited to whole numbers)? ***[C, CN, ME, R, T]*** ❑ I can estimate the square root of a number that is not a perfect square, using the roots of perfect squares as benchmarks. ❑ I can approximate the square root of a number using a calculator. ❑ I can explain why the square root of a number shown on a calculator may be an approximation. ❑ I can identify a number with a square root that is between two given numbers.			

Name: _____ Date: _____

Math 8 Patterns and Relations (Patterns) ***[C]*** *Communication* ***[PS]*** *Problem Solving* ***[CN]*** *Connections* ***[R]*** *Reasoning* ***[ME]*** *Mental Mathematics and Estimation* ***[T]*** *Technology* ***[V]*** *Visualization*	**Still Learning**	**On My Way**	**With Ease**
General Outcome: Use patterns to describe the world and to solve problems.	**The big ideas/Enduring Understandings (Rocks)**	**Include evidence.**	
Can I graph and analyze two-variable linear relations? *[C, ME, PS, R, T, V] [ICT: P2–3.3]* ❑ I can determine the missing value in an ordered pair for a given equation. ❑ I can substitute numbers for variables to create a table of values. ❑ I can construct a graph from a linear relation. ❑ I can describe the relationship between the variables of a graph (how y changes in relation to x).			

Math 8 Patterns and Relations (Variables and Equations) ***[C]*** *Communication* ***[PS]*** *Problem Solving* ***[CN]*** *Connections* ***[R]*** *Reasoning* ***[ME]*** *Mental Mathematics and Estimation* ***[T]*** *Technology* ***[V]*** *Visualization*	**Still Learning**	**On My Way**	**With Ease**
General Outcome: Represent algebraic expressions in multiple ways.	**The big ideas/Enduring Understandings (Rocks)**	**Include evidence.**	
Can I model and solve problems, concretely, pictorially and symbolically, using linear equations? *[C, CN, PS, V]* ❑ I can solve one step equations using ☺ subtraction ☺ addition ☺ division ☺ multiplication ❑ I can solve two step equations using subtraction or addition followed by division or multiplication ❑ I can apply the distributive property to solve a given linear equation; e.g., $2(x + 3) = 5$ is equivalent to $2x + 6 = 5$. ❑ I can model solutions for equations using pictures. ❑ I can model solutions for equations using algebra tiles. ❑ I can verify the solution to a given linear equation. ❑ I can solve problems, using linear equations.			

Name: _____ Date: _____

Math 8 Shape and Space (Measurement) *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning* *[ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*	**Still Learning**	**On My Way**	**With Ease**
General Outcome: Use direct and indirect measurement to solve problems.			
The big ideas/Enduring Understandings (Rocks)	**Include evidence.**		
Can I develop and apply the Pythagorean theorem to solve problems? *[CN, PS, R, T, V] [ICT: P2–3.4]* ❑ I can identify the hypotenuse on a right angled triangle. ❑ I can model and explain the Pythagorean theorem ($a^2 + b^2 = c^2$) using a peg board or grid paper. ❑ I can explain, using examples, that the Pythagorean theorem applies only to right triangles. ❑ I can determine whether or not a given triangle is a right triangle by applying the Pythagorean theorem. ❑ I can determine the measure of the third side of a right triangle, given the measures of the other two sides. ❑ I can solve problems that involve Pythagorean triples.			
****Can I develop and apply a formula to calculate the area of triangles, parallelograms and circles?*** *(Only for the 2008/2009 school year)* ❑ *I can illustrate and explain how the area of a rectangle can be used to determine the area of a triangle.* ❑ *I can generalize a rule to create a formula for determining the area of triangles.* ❑ *I can illustrate and explain how the area of a rectangle can be used to determine the area of a parallelogram.* ❑ *I can generalize a rule to create a formula for determining the area of parallelograms.* ❑ *I can illustrate and explain how to estimate the area of a circle without the use of a formula.* ❑ *I can apply a formula for determining the area of a circle.* ❑ *Solve problems involving the area of triangles, parallelograms and/or circles.*			
Can I determine the surface area of right rectangular prisms, right triangular prisms and right cylinders to solve problems? *[C, CN, PS, R, V]* ❑ I can explain, using examples, the relationship between the area of 2-D shapes and the surface area of a given 3-D object. ❑ I can identify all the faces of a given prism and cylinder. ❑ I can describe and apply strategies for determining the surface area of a given rectangular or triangular prism. ❑ I can describe and apply strategies for determining the surface area of a given cylinder. ❑ I can solve problems involving surface area.			
Can I develop and apply formulas for determining the volume of right rectangular prisms, right triangular prisms and right cylinders? *[C, CN, PS, R, V]* ❑ I can determine the volume of a prism, given the area of the base? ❑ I can generalize and apply a rule for determining the volume of right cylinders. ❑ I can explain the connection between the area of the base of a given right 3-D object and the formula for the volume of the object. ❑ I can demonstrate that the position of a given 3-D object does not affect its volume. ❑ I can apply a formula to solve problems involving the volume of a right cylinder or a right prism.			

Name: _____ Date: _____

Math 8 Shape and Space (Measurement) *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning* *[ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*		**Still Learning**	**On My Way**	**With Ease**
	Important to know and be able to do (Sand)	**Include evidence.**		
	Can I draw and construct nets for 3-D objects? *[C, CN, PS, V]* ❑ I can match a given net to the 3-D object it represents. ❑ I can construct a 3-D object from a given net. ❑ I can draw nets for: ☺ cylinder ☺ rectangular prism ☺ right triangular prism			

Math 8 Shape and Space (3-D Objects and 2-D Shapes) *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning* *[ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*		**Still Learning**	**On My Way**	**With Ease**
	Important to know and be able to do (Sand)	**Include evidence.**		
General Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	**Can I draw and interpret top, front and side views of 3-D objects composed of right rectangular prisms?** *[C, CN, R, T, V] [ICT: C6–3.4]* ❑ I can draw and label the top, front and side views for a given 3-D object on isometric dot paper. ❑ I can identify and correctly place hidden lines on a 3-D drawing. ❑ I can predict the top, front and side views that will result from a described rotation (limited to multiples of 90º), and verify predictions. ❑ I can draw and label the top, front and side views that result from a given rotation (limited to multiples of 90º). ❑ I can build a 3-D block object given the top, front and side views.			

Math 8 Shape and Space (Transformations) *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning* *[ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*		**Still Learning**	**On My Way**	**With Ease**
	Important to know and be able to do (Sand)	**Include evidence.**		
General Outcome: Describe and analyze position and motion of objects and shapes.	**Can I demonstrate an understanding of the congruence of polygons?** *[CN, R, V]* ❑ I can define congruency. ❑ I can compare two polygons and explain why they are congruent or incongruent. ❑ I can draw the original figure on a Cartesian plane given the coordinates of the image's vertices and a description of the transformation (translation, rotation, reflection). ❑ I can determine the coordinates of the vertices of an image following a given combination of transformations of the original figure.			

Name: _____ Date: _____

Math 8 Statistics and Probability (Data Analysis) *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning [ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*		Still Learning	On My Way	With Ease
General Outcome: Collect, display and analyze data to solve problems.	**The big ideas/Enduring Understandings (Rocks)**	**Include evidence.**		
	Can I critique ways in which data is presented in circle graphs, line graphs, bar graphs and pictographs? *[C, R, T, V] [ICT: C7–3.1, C7–3.2, F4–3.3]* ❑ I can compare information provided for the same data set by a given set of graphs, including circle graphs, line graphs, bar graphs and pictographs, to determine the strengths and limitations of each graph. ❑ I can identify the advantages and disadvantages of different graphs, including circle graphs, line graphs, bar graphs and pictographs, in representing a given set of data. ❑ I can explain how the format of a graph, (size of the intervals, the width of the bars, the visual representation, etc.) may lead to misinterpretation of the data. ❑ I can identify conclusions that are inconsistent with a given data set or graph and explain the misinterpretation.			

Math 8 Statistics and Probability (Chance and Uncertainty) *[C] Communication [PS] Problem Solving [CN] Connections [R] Reasoning [ME] Mental Mathematics and Estimation [T] Technology [V] Visualization*		Still Learning	On My Way	With Ease
General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.	**The big ideas/Enduring Understandings (Rocks)**	**Include evidence.**		
	Can I solve problems involving the probability of independent events? *[C, CN, PS, T] [ICT: P2–3.4]* ❑ I can predict the probability of an event based on the number of possible outcomes. ❑ I can express probability as a fraction. ❑ I can express probability as a percent. ❑ I can express probability as a decimal. ❑ I can generalize and apply a rule for determining the probability of independent events. ❑ I can solve problems that involve determining the probability of independent events.			