

This document outlines the academic goals, the activities and materials used in the Eighth Grade class in order to achieve high academic success. There is a great deal of overlap in the standards within the activities and within the core areas, thus, standards addressed repeatedly throughout the year.

Time period	Standard	Resources (unit in textbook, learning center, recurring activity, other)	Internet/Media/ other resource
Week __1__ to __36__	(0) Fact fluency: Student is expected to perform single digit addition, subtraction, multiplication and division mentally with speed and accuracy.	5 minutes at the end of at least one lesson a week play a game for 20 minutes such as 'Around the World' or Skunk based on mental arithmetic and fact fluency. This includes multiplication facts.	Games – Skunk includes single digit addition mentally. Flashcards
Week __ to __	(1) Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations. The student is expected to:		
Week 2	1(A) compare and order rational numbers in various forms including integers, percents, and positive and negative fractions and decimals;	1.2 Integers and Absolute Value – Example 2 (Comparing and Ordering Integers)	X-Marks the spot hardcopy game and available on Alia's electronic folder 'Math Resources' (Pdf of Maths Games).
Week 5		2.3 Comparing and Ordering Rational Numbers	
Week 16		5.1 Fractions, Decimals and Percent – Example 4 (Ordering Rational Numbers).	
Week 5	1(B) select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships;	2.2 Equivalent Forms of Rational Numbers – Example 3 (Writing an Equivalent Decimal).	
Week 13		2.3 Example2 (Comparing using decimals).	
		4.3 Solving Proportions – Example 2 (Using Cross Products).	
Week 14	4.4 Similar Figures and Proportions		
Week 9	1(C) approximate (mentally and with calculators) the value of	3.1 Exploring Square Roots and Irrational Numbers (Example 2 and 3).	

	irrational numbers as they arise from problem situations (such as pi).	3.2 The Pythagorean Theorem 3.3 Using the Pythagorean Theorem	
Week 7	1(D) express numbers in scientific notation, including negative exponents, in appropriate problem situations; and	2.7 Powers and Exponents 2.8 Scientific Notation	
	1(E) compare and order real numbers with a calculator.	2.2 Turning fractions into decimals. It also could be caught with 3.1 Exploring Square Roots and Rational Numbers.	
Week ___ to ___	(2) Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions. The student is expected to:		
Week 2 Week 3 Week 6	2(A) select and use appropriate operations to solve problems involving rational numbers and justify the selections;	1.1 Algebraic Expressions and the Order of Operations 1.3 Adding and Subtracting Integers 1.4 Multiplying and Dividing Integers 2.4 Adding and Subtracting Rational Numbers 2.5 Multiplying and Dividing Rational Numbers	- Order of Operations http://www.watchknowlearn.org/Video.aspx?VideoID=25745&CategoryID=503 Powerpoint with number line to project on the board and get Ss up the front. Multiplying Integers Practice with boards. http://www.youtube.com/watch?v=SKII5ci_sl4&feature=autoplay&list=PL7BB4727D4EE74517&playnext=1
Week 6	2(B) evaluate a solution for reasonableness; and	2.6a Activity Lab – Estimating Solutions	
Week 13	2(C) use multiplication by a given constant	4.1 Ratios and Rates	

	factor (including unit rate) to represent and solve problems involving proportional relationships including conversions between measurement systems.	4.2 Converting Units 4.3 Solving Proportions	
Week ___ to ___	(3) Patterns, relationships, and algebraic thinking. The student identifies proportional or non-proportional linear relationships in problem situations and solves problems. The student is expected to:		
Week 13	3(A) compare and contrast proportional and non-proportional linear relationships; and	4.3a Activity Lab – Proportional and Nonproportional Relationships I'm need to think about how make the link to linear relationships stronger than the textbook does.	
Week 14-15	3(B) estimate and find solutions to application problems involving percents and other proportional relationships such as similarity and rates.	4.4 Similar Figures and Proportions 4.6 Scale Models and Maps 4.7 Similarity and Indirect Measurement	Fractions/% and Decimals http://www.mathplayground.com/Decection/Decection.html
Week 16		5.1 Fractions, Decimals and Percents 5.2 Estimating with Percent 5.3 Percents and Equations	Shopping Spree Game (Pdf and hard resource)
Week 17		5.5 Percent of Change	
Week ___ to ___	(4) Patterns, relationships, and algebraic thinking. The student makes connections among various representations of a numerical relationship. The		

	student is expected to generate a different representation of data given another representation of data (such as a table, graph, equation, or verbal description).		
Week 19	4(A) To combine like terms and simplify algebraic expressions (e.g. using the distributive property).	6.2 Simplifying Algebraic Expressions	
Week 19-20	4(B) To use two-step equations, multi-step equations and equations with variables on both to sides to solve problems.	6.1 Solving Two-Step Equations 6.3 Solving Multistep Equations 6.4 Solving Equations With Variables on Both Sides	
Week 20	4 (C) To write and solve inequalities with addition, subtraction, multiplication and division.	6.5 Solving Inequalities by Adding and Subtracting. 6.6 Solving Inequalities by Multiplying and Dividing.	
Week ___ to ___	(5) Patterns, relationships, and algebraic thinking. The student uses graphs, tables, and algebraic representations to make predictions and solve problems. The student is expected to:		
Week 3	5 (A) predict, find, and justify solutions to application problems using appropriate tables, graphs, and algebraic equations; and	1.6 Solving Equations by Adding and Subtracting – Example 2 (solving equations) 1.6b Activity Lab Number Squares 1.7 Solving Equations by Multiplying and Dividing	Making a scales activity which balances using spaghetti, marshmallows... Give this as Extra Credit after Chapter 1 Test
Week 10		3.5 Equations, Tables and Graphs	
Week 33		3.5b Matching Graphs 11.3 Functions	
Week 33	5 (B) find and evaluate an algebraic expression	11.1 Sequences	

	to determine any term in an arithmetic sequence (with a constant rate of change).		
Week ___ to ___	(6) Geometry and spatial reasoning. The student uses transformational geometry to develop spatial sense. The student is expected to:		
Week 14	6(A) generate similar figures using dilations including enlargements and reductions; and	4.5 Similarity Transformations	
Week 14	6(B) graph dilations, reflections, and translations on a coordinate plane.	4.5 Similarity Transformations	
Week 10		3.6 Translations	
Week 11		3.7 Reflections and Symmetry	
		3.8 Rotations	
Week ___ to ___	(7) Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. The student is expected to:		
Week 26	7 (A) draw three-dimensional figures from different perspectives;	8.2 Drawing Views of Three-Dimensional Figures 8.3 Nets and Three-Dimensional Figures	
Week 23-24	7 (B) use geometric concepts and properties to solve problems in fields such as art and architecture;	7.1 Pairs of Angles 7.2 Angles and Parallel Lines 7.3 Congruent Polygons 7.4 Classifying Triangles and Quadrilaterals 7.5 Angles and Polyons 7.6 Areas of Polygons	8.1 – http://www.youtube.com/watch?v=K9L9I86N-xM&feature=related http://www.youtube.com/watch?v=wlvn4anF-fl&feature=related
Week 25-27		All of Chapter 8 'Measurement' – Solids uses geometric concepts to explore real-life problems in art and	

		architecture.	
Week 9	7(C) use pictures or models to demonstrate the Pythagorean Theorem; and	3.1 Exploring Square Roots and Irrational Numbers (Example 2 and 3). 3.2 The Pythagorean Theorem 3.3 Using the Pythagorean Theorem	3.1 Rational and Irrational Numbers http://www.youtube.com/watch?v=m94WTZP14SA Colin Dodd's Pythagorus Song http://www.youtube.com/watch?v=l8-bnZh8Zuc&feature=relmfu
Week 10	7(D) locate and name points on a coordinate plane using ordered pairs of rational numbers.	3.4 Graphing on the Coordinate Plane	Plastic Sheet Coordinate Plane
Week ___ to ___	(8) Measurement. The student uses procedures to determine measures of three-dimensional figures. The student is expected to:		
Week 24	8 (A1) To find the circumference and area of a circle and the area of irregular figures.	7.7 Circumference and Area of a Circle.	
Week 26	8 (A) find lateral and total surface area of prisms, pyramids, and cylinders using concrete models and nets (two-dimensional models);	8.4 Surface Areas of Prisms and Cylinders 8.5 Surface Areas of Pyramids and Cones - Examples 1 and 2 only	
Week 26-27	(B) connect models of prisms, cylinders, pyramids, spheres, and cones to formulas for volume of these objects; and	8.6 Volumes of Prisms and Cylinders 8.7 Volumes of Pyramids and Cones 8.8 Spheres (Volumes)	
25-27	8 (C) estimate measurements and use formulas to solve application problems involving lateral and total surface area and volume.	8.4 8.5 8.6 8.7 8.8 (Bonus)	

Week ___ to ___	(9) Measurement. The student uses indirect measurement to solve problems. The student is expected to:		
Week 9	9(A) use the Pythagorean Theorem to solve real-life problems; and	3.2 3.3	
Week 14-15	9(B) use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.	4.4 Similar Figures and Proportions 4.6 Scale Models and Maps 4.7 Similarity and Indirect Measurement	
Week ___ to ___	(10) Measurement. The student describes how changes in dimensions affect linear, area, and volume measures. The student is expected to:		
Week 27	10 (A) describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally; and	8.9 Exploring Similar Solids	
As above	10 (B) describe the resulting effect on volume when dimensions of a solid are changed proportionally.	8.9 Exploring Similar Solids	
Week ___ to ___	(11) Probability and statistics. The student applies concepts of theoretical and experimental probability to make predictions. The student is expected to:		
Week 31	11 (A) find the probabilities of dependent and independent events;	10.4 Independent and Dependent Events	
Week 31	11 (B) use theoretical probabilities and experimental results to make predictions and decisions; and	10.1 10.2	
Week 17	11 (C) select and use different models to simulate an event.	5.8 Ratios and Probability (surveys, sample space, tree diagrams)	

Week 32		(10.5 and 10.6 – Permutations and Combinations)	
Week ___ to ___	(12) Probability and statistics. The student uses statistical procedures to describe data. The student is expected to:		
Week 28	12 (A) use variability (range, including interquartile range (IQR)) and select the appropriate measure of central tendency to describe a set of data and justify the choice for a particular situation;	9.1 Finding the mean, median, mode and range – also includes choosing the most appropriate measure 9.6 Box-and-Whisker Plots, including finding the IQR	
Week 29	12 (B) draw conclusions and make predictions by analyzing trends in scatterplots; and	9.7 Making Predictions from Scatter Plots	
Week 28-29	12 (C) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.	9.2 Line plots, frequency tables, histograms 9.3 Venn Diagrams 9.5 Stem-and-leaf Plots 9.6 Box-and-Whisker Plots 9.8 Circle Graphs	
Week ___ to ___	(13) Probability and statistics. The student evaluates predictions and conclusions based on statistical data. The student is expected to:		
Week 31	13 (A) evaluate methods of sampling to determine validity of an inference made from a set of data; and	10.3 Conducting a Survey	
Week 29	13 (B) recognize misuses of graphical or numerical information and evaluate predictions	9.4 Reading Graphs Critically 9.9 Choosing an Appropriate Graph	

	and conclusions based on data analysis.		
Week ___ to ___	(14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:		
Around Week 33	14(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	Until we develop a Math Fair concept in a few years, give students the opportunity to bring and share how they are using math in their science fair projects. 6.5-6.6 – Activity where Ss have to come up with their own example of a real life inequality such as maximum luggage allowance weight on a flight.	
	(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	As above and through doing word problems in each unit.	
	(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	3.1-3.3 – During the work on Pythagorean Theorem, Ss are encouraged to draw the problem described to find the right triangle.	
Week 31-32	(D) select tools such as real objects, manipulatives,	Probability – manipulatives used frequently in 10.1, 10.2, 10.3, 10.4	

	paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.		
Week ___ to ___	(15) Underlying processes and mathematical tools. The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models. The student is expected to:		
	15(A) communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models; and	7.3 Congruent polygons and congruence statements using mathematical language.	
Week 28	(B) evaluate the effectiveness of different representations to communicate ideas.	9.4 Reading Graphs Critically Link to Science Fair and deciding appropriate graphs etc. to use.	
Week ___ to ___	(16) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:		
	(A) make conjectures from patterns or sets of examples and nonexamples; and		
	(B) validate his/her conclusions using mathematical properties and relationships.		

Week	Internet Resource
Q1, W8	3.1 Rational and Irrational Numbers

	http://www.youtube.com/watch?v=m94WTZP14SA
Q1, W9	3.2 Colin Dodd's Pythagorus Song http://www.youtube.com/watch?v=l8-bnZh8Zuc&feature=relmfu
Q2 W6	5.3 %, Fractions and Decimals http://www.mathplayground.com/Decention/Decention.html
Q3 W3	Clasffiyng trianlges = Play song http://www.youtube.com/watch?v=coovK2Lmi-8 Quadrilateral rap - http://www.youtube.com/watch?v=v7LZQNvZWFs 7.5 Angles and Polygons http://www.youtube.com/watch?v=69IfTURDles