

MIDDLE TOWNSHIP PUBLIC SCHOOLS
 CAPE MAY COURT HOUSE, NJ 08210
 CURRICULUM GUIDE 2012

DISCIPLINE: Mathematics GRADE LEVEL: 6

Ratios and Proportional Relationships							
Understand ratio concepts and use ratio reasoning to solve problems.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.RP	1	How do I understand the concept of a ratio?	5 days	<ul style="list-style-type: none"> • H.O.T. problems • Math Online (glencoe.com) • Math Connects power point presentation • N.L.V.M. • Classroom ratios • Acceleration 	Social Studies (graphs and charts) Science (Chemistry, formulas, i.e. H ₂ O (water) Ratio 2 hydrogen molecules to every 1 molecule of oxygen	Formative: Teacher observation/ticket out the door/pair share/communicators Summative: Quiz and Test	Chapter 6, calculators, topical videos, manipulative

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.RP	2	How do I understand the concept of a unit rate?	3 days	<ul style="list-style-type: none"> • H.O.T. problems • Chapter 6 Mini lab p.314 • Math Connects power point presentation • Acceleration • E.A. extension activities 	Science (formulas)	Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 6 Calculators, topical videos, manipulatives
6.RP	3	How do I use ratio and rate reasoning to solve real-world and mathematical problems?	7 days	<ul style="list-style-type: none"> • H.O.T. problems • Math Connects power point presentation • Math Online (Glencoe.com) • Acceleration • E.A. extension activities 		Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 7, manipulatives, topical videos, smart board

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The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.NS	1	How do I interpret and compute quotients of fractions, and solve word problems?	10 days	<ul style="list-style-type: none"> • Roll a fraction (students will use fraction dice and operation dice to create problems) • H.O.T. problems • Acceleration • E.A. extension activity 		Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 5. manipulatives, smart boards, fraction cards

Compute fluently with multi-digit numbers and find common factors and multiples.

6.NS	2	How do I fluently divide multi-digit numbers using the standard algorithm?	5 Days	<ul style="list-style-type: none"> • H.O.T. problems • GCF and LCM relay race • Math Connects power point presentation • Acceleration • E.A. extension activities 		Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 3 and 4, smart board, calculators
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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.NS	3	How do I fluently add, subtract, multiply and divide multi-digit decimals?	5 days	<ul style="list-style-type: none"> • H.O.T. problems • Math Connects power point presentation • Working with money (dollar and cents) activity • E.A. extension activities • Acceleration 	Science (temperature) Social Studies (populations)	Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 3, smart boards, calculators

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.NS	4	How do I find the greatest common factor of two or more numbers and the least common multiple of two or more numbers? How do I use distributive property to express a sum of two whole numbers?	6 days	<ul style="list-style-type: none"> • H.O.T. problems. • Math Connect Power Point Presentation • Math Online (glencoe.com) • Get Ready for the lesson p. 197 • Acceleration • E.A. extension activity 		Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 4, calculators, topical videos

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Apply and extend previous understandings of numbers to the system of rational numbers.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.NS	5	How do I understand the purpose of positive and negative integers?	6 days	<ul style="list-style-type: none"> • H.O.T. problems • Math Connects power point presentation • Math online (glencoe.com) • Below Sea Level Activity • Football (yards) 	Science (temperature)	Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 11. manipulatives, smart boards
6.NS	6	How do I understand what a rational number? How do I find rational numbers on a coordinate plane?	6 days	<ul style="list-style-type: none"> • H.O.T. problems, • Math Connects power point presentation • Math online (Glencoe. Com.) • E.A. extension • Acceleration 		Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 11. manipulatives, smart boards

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.NS	7	How do I understand the ordering and absolute value of rational numbers?	6 days	<ul style="list-style-type: none"> • H.O.T. problems, • Math Connects power point presentation • Math online (Glencoe. Com.) • E.A. extension • Acceleration 		Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 11. manipulatives, smart boards
6.NS	8	How do I graph points in all four quadrants of a coordinate plane?	6 days	<ul style="list-style-type: none"> • H.O.T. problems • Math Connects power point presentation • Battle Ship activity • MAPS Get Ready for the lesson p. 599 • E.A. extension • Acceleration 	Social Studies (longitude and latitude)	Formative: Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 11. manipulatives, smart boards

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Expressions and Equations							
Apply and extend previous understandings of arithmetic to algebraic expressions.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.EE	1	How do I write and evaluate numerical expressions involving whole-number exponents?	3 days	<ul style="list-style-type: none"> • H.O.T. problems • Math Online (glencoe.com) • MAPS Connects • Power point presentation • N.L.V.M. • Acceleration 	Science (distance of objects in space from each other and from the earth)	Formative: Teacher observation/ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 6, calculators, topical videos
6.EE	2	How do I write, read, and evaluate expressions in which letters stand for numbers?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 			Chapter 1 and 12, topical videos, manipulative

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.EE	3	How do I apply properties of operations to generate equivalent expressions?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 1, 6, and 12
6.EE	4	How do I identify when two expressions are equivalent?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 6, calculators, topical videos, manipulative

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Reason about and solve one-variable equations and inequalities.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.EE	5	How do I understand how to solve an equation or inequality as a process of answering a question?	4 days	<ul style="list-style-type: none"> • E.A extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 1 and 12 calculators, topical videos, manipulative
6.EE	6	How do I use variables to represent numbers and write expressions when solving a real world or mathematical problem?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T problems • Math Online • Math Connects power point presentation • N.L.V. M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 1 and 12 calculators, topical videos, manipulative
6.EE	7	How do I solve real	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. 		Teacher Observation/ ticket	Chapter 1 and 12 calculators,

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		world and mathematical problems by writing and solving equations of the $x + p$ and $px = q$ for cases in which p , q , and x are all non negative rational numbers?		problems, <ul style="list-style-type: none"> • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		out the door/ pair share/ communicators Summative: Quiz and Test	topical videos, manipulative
6.EE	8	How do I write an inequality of the form $x > c$ or $x < c$ to represent a constraint of condition in a real world problem?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/pair share/ communicators Summative: Quiz and Test	Chapter 12 calculators, topical videos, manipulative

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Represent and analyze quantitative relationships between dependent and independent variables.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.EE	9	How do I use variables to represent two quantities in a real world problem?	3 day	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/pair share/ communicators Summative: Quiz and Test	Chapter 12 calculators, topical videos, manipulative
Geometry							
Solve real-world and mathematical problems involving area, surface area, and volume.							
6.G	1	How do I find the area of triangles and quadrilaterals?	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 10 calculators, topical videos, manipulative

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.G	2	How do I find the volume of right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths? Apply formula $V=lwh$ and $V=bh$	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 10 calculators, topical videos, manipulative

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6.G	3	How do I draw polygons in the coordinate plane given the coordinate for the vertices?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 10 calculators, topical videos, manipulative
6.G	4	How do I represent three-dimensional figures using nets made up of rectangles and triangles?	3 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V.M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 10 calculators, topical videos, manipulative

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Statistics and Probability							
Develop understanding of statistical variability.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						
6. SP	1	How do I recognize a statistical question as one that anticipates variability in the data related to the question and account for it in the answers?	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V. M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Glencoe McGraw Hill Math Connects 2009 Chapter 2 calculators , topical videos, manipulative

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6 S.P.	2	How do I understand that a set of data collected to answer a statistical question has a distribution which can be described by its center?	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V. M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 2 calculators , topical videos, manipulative
6 S.P.	3	How do I recognize that a measure of center for a numerical data set summarizes all of its values with a single number?	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V. M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 2 calculators , topical videos, manipulative

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Summarize and describe distributions.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw Hill Math Connects 2009
6 S.P.	4	How do I display numerical data in plots on a number line, including dot plots, histograms and box plots?	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V. M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 2 calculators , topical videos, manipulative
6 S.P.	5	How do I summarize numerical data sets in relation to their context?	4 days	<ul style="list-style-type: none"> • E.A. extension activity • Acceleration H.O.T. problems • Math Online • Math Connects power point presentation • N.L.V. M. • Acceleration 		Teacher observation/ ticket out the door/ pair share/ communicators Summative: Quiz and Test	Chapter 2 calculators , topical videos, manipulative

Benchmark assessments are schedule for October, February and May

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RATIOS AND PROPORTIONAL RELATIONSHIPS							
Analyze proportional relationships and use them to solve real-world and mathematical problems.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						
7.RP	1	How do you compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units?	1 week	Use the internet to find the MPG of a variety of cars. Find out how much gas each vehicle will use for a trip to Disney.	Map Skills-Social Studies	Formative Assessments (TOTD, teacher observation, communicators pair/share) Summative Assessments (Quiz, Test)	Glencoe McGraw-Hill Math Connects 2009 Chapter 6, Topical videos, Smart Board, CPS, Graphing Calculators, Manipulatives
7.RP	2	How do you recognize and represent proportional relationships between quantities?	2 weeks	Create a spreadsheet and use a formula to convert actual to-scale measurement			Chapters 3 and 6
7.RP	3	How do you use proportional relationships to solve multistep ratio and percent problems?	1 week	Determine a discount and final price of an item that is "On Sale." Acceleration Class, Enrichment Activities			Chapter 7

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THE NUMBER SYSTEM							
Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						
7.NS	1	How do you apply and extend previous understanding of addition and subtraction to add and subtract rational numbers	2 weeks	Brainpop video - "Adding and Subtracting Integers		Formative Assessment (TOTD, teacher observation, communicators pair/share) Summative Assessments	Glencoe McGraw-Hill Math Connects 2009 Chapter 2 and 5 Topical videos, Smart Board, CPS, Graphing Calculators
7.NS	2	How do you apply and extend previous understanding of multiplication and division and of fractions to multiply and divide rational numbers?	2 weeks	Use 2-color counters to model multiplication and division of integers			Chapters 2 and 5
7.NS	3	How do you solve real-world & mathematical problems involving the four operations with rational numbers?	2 weeks	Create a foldable with rules for the four operations with rational numbers. Acceleration Class, Enrichments Activities			Chapters 2 and 5

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EXPRESSIONS AND EQUATIONS

Use properties of operations to generate equivalent expressions.

Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.EE	1	How do you apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients?	2 weeks	Set up “human expressions” to determine equality.		Formative Assessments (TOTD, teacher observation, communicators pair/share) Summative Assessments (Quiz, Test)	Chapters 1 and 3 Topical videos, Smart Board, CPS, Graphing Calculators, Manipulatives
7.EE	2	How do you rewrite an expression in a different form to see how quantities in it are related?	1 week	Brainpop videos- Commutative, Associative, Distributive, Properties	Social Studies- Map Skills		Chapters 1 and 3
Solve real-life and mathematical problems using numerical and algebraic expressions and equations.							
7.EE	3	How do you solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form?	1 week	Take a salary and figure out a new salary based on a percentage raise.			Chapter 3

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.EE	4	How do you use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems?	1 week	Use Google Earth to find a building in another country. Determine the dimensions of the building, its perimeter, and the area of the floor plan. Acceleration Class, Enrichment Activities			Chapter 3

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Geometry							
Draw, construct, and describe geometrical figures and describe the relationships between them.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.G	1	How do you solve problems involving scale drawings of geometric figures?	1 week	Find the dimensions of a real building, using Google Earth, and create a scale drawing on grid paper		Formative Assessments (TOTD, Teacher observation, communicators pair/share) Summative Assessments (Quiz, Test)	Chapter 10 Topical videos, Smart Board, CPS, Graphing Calculators, Manipulatives
7.G	2	How do you draw geometric shapes with given conditions and tools?	2 weeks	Use Geometer's Sketchpad to create shapes matching given angle and side measures.			Chapter 10 and 11
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.							
7.G	3	How do you describe the two-dimensional figures that result from slicing three-dimensional figures?	1 week	Create a rectangular prism with cubes. Draw the top, side, and front views.			Chapter 11

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.G	4	How do you use the formulas for the area and circumference of a circle to solve problems?	1 week	Find real circles (hula hoop, Frisbee, bicycle tire) and determine area and circumference			Chapter 11
7.G	5	How do you write equations for an unknown angle in a figure using facts about supplementary, complementary, vertical, and adjacent angles?	1 week	Use Communicators to draw intersecting lines and determine the measure of supplementary complementary vertical, and adjacent angles	Science-Measurement		Chapter 10
7.G	6	How do you solve real-world problems involving area, volume, and surface area of two- and three-dimensional objects?	2 weeks	Roll paper into a cone and another into a cylinder with the same height and diameter. Determine which holds the most popcorn. Acceleration Class, Enrichment Activities			Chapter 11 and 12

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Statistics and Probability							
Use random sampling to draw inferences about a population.							
Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.SP	1	How do you determine if a population is a valid sample?	2 weeks	Compare the Middle School population to the entire school districts population	Social Studies- Census, Statistics	Formative Assessments (TOTD, teacher observation, communicators pair/share) Summative Assessments (Quiz, Test)	Chapter 8 and 9 Topical videos, Smart Board, CPS, Graphing Calculators, Manipulatives
7.SP	2	How do you use data from a random sample to draw inferences about a population?	2 weeks	Survey classmates and draw inferences about the results			Chapter 8 & 9
Draw informal comparative inferences about two populations.							
7.SP	3	How do you informally assess the degree of visual overlap of two numerical data distributions?	1 week	Compare the mean height of students in the classroom with the mean height of a basketball team.			Chapter 8

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.SP	4	How do you draw informal comparative inferences using measure of center and variability?	1 week	Compare the mean length of words in a 7 th grade science book to the mean length of words in a fourth grade science book.			Chapter 8
Investigate chance processes and develop, use, and evaluate probability models.							
7.SP	5	How is the probability of a chance event expressed? (A number between 0 and 1)	1 week	Roll two dice 36 times. Determine the probability of each sum as a number between 0 & 1. (Use the TI-73 app, ProbSim, to “roll the dice.”			Chapter 9
7.SP	6	How do you calculate the probability of a chance event from collected data?	1 week	Survey students about the chance of things happening in their lives. Determine the probability.			Chapter 9
7.SP	7	How do you develop a probability model to find probabilities in events?	1 week	Spin a spinner (TI-73 app-ProbSim) to determine the experimental and theoretical probability of the event.			Chapter 9

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Grade Level Standards		Essential Questions	Time Frame	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
7.SP	8	How do you find the probabilities of compound events?	1 week	Brainpop video -Independent and Dependent Events Acceleration Class, Enrichment Activities			Chapter 9

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THE NUMBER SYSTEM							
Know that there are numbers that are not rational, and approximate them by rational numbers.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						
8.NS	1	How can you identify rational and irrational numbers?	3	Graphic organizer comparing rational and irrational numbers		Formative: Teacher observation/ ticket out of the door/ communicators/ pair share	Glencoe McGraw-Hill Math Connects 2009 Chapter 2/ Brain pop/ Calculator
8.NS	2	How can you compare and order rational and irrational numbers?	3	Human number line Acceleration EA extension activities		Summative: Test/Quiz	Chapter 2/ Calculator/ Worksheets

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EXPRESSIONS AND EQUATIONS

Work with radicals and integer exponents.

Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.EE	1	What are the steps to go from exponential form to standard form?	3	View Science data – discuss why we use scientific notation to represent large or small numbers.		Formative: Teacher observation/ ticket out of the door/ communicators/ pair share	Chapter 2/ Worksheet/ CPS
8.EE	2	How do you calculate square roots and cube roots?	3	Online square root flashcards EA extension activities		Summative: Test/ Quiz	Chapter 2 & 3 / Worksheets
8.EE	3	How do you represent very large or very small quantities using scientific notation?	2	Practice problems using communicators Acceleration	Science: Scientific Notation		Chapter 2/ Brain pop/ Worksheets
8.EE	4	What are the steps to follow in order to perform operations with numbers expressed in scientific notation?	3	Math connects- PowerPoint Acceleration EA extension activities	Science: Scientific Notation		Chapter 2/ Worksheets/ Brain pop

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Understand the connections between proportional relationships, lines, and linear equations.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.EE	5	How can you find the unit rate and use it to graph proportional relationships?	5	Brainpop video on proportional relationships		Formative: Teacher observation/ ticket out of the door/ communicators/ pair share Summative: Test/ Quiz	Chapter 4/ Worksheets
8.EE	6	How can you use $y = mx + b$?	8	Graphing calculator activity Wacky waterworld activity Practice problems using communicators EA extension activities Acceleration			Chapter 9 / video/ worksheets / cps

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Analyze and solve linear equations and pairs of simultaneous linear equations.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.EE	7	How do you solve linear equations that have one solution, no solutions, or infinite solutions?	10	Practice problems using communicators		Formative: Teacher observation/ ticket our of the door/ communicators / pair share Summative: Test/ Quiz	Chapter 8 / worksheets
8.EE	8	How do you solve systems of linear equations?	8	YouTube video (http://www.youtube.com/watch?v=cwHR_B9zK7k) EA extension activities Acceleration			Chapter 9 / worksheets

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FUNCTIONS							
Define, evaluate, and compare functions.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/ Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.F	1	Why a function is a rule that assigns to each input exactly one output?	3	Function Machine (http://nlvm.usu.edu/en/nav/frames_asid_191_g3_t_2.html?from=category_g3_t_2.html)			Chapter 9 / worksheets
8.F	2	How do you compare properties of two functions each represented in a different way?	3	Complete function tables EA extension activities			Chapter 9 / worksheets/ Smartboard
8.F	3	What are examples of functions that are linear and those that are not linear?	5	Graphic organizer linear vs. not linear Practice problems using communicators Acceleration EA extension activities			Chapter 9 / worksheets/ Smartboard

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Use functions to model relationships between quantities.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.F	4	How do you construct a function to model a linear relationship between two quantities?	5	Gather data and create a linear graph Graphing calculator lab-modeling linear behavior (extend 9-6)		Formative: Teacher observation/ticket out of the door/communicators/pair share Summative: Test/quiz	Chapter 9 / Worksheets/ Smartboard
8.F	5	How can you describe a function qualitatively?	3	Foldable Acceleration EA extension activities			Chapter 9/ Worksheets/ Smartboard

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Geometry							
Understand congruence and similarity using physical models, transparencies, or geometry software.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.G	1	What are rotations, reflections, and translations?	6	Create transformation Chart Create pictures with reflectional, rotational, and translational symmetry		Formative: Teacher observation/ ticket out of the door/ communicators/ pair share Summative: Test/ Quiz/project	Chapter 6 / Smartboard/ Brain pop
8.G	2	Why are two shapes congruent after a reflection, rotation, or translation takes place?	2	Open ended questions on symmetry EA extension activities			Chapter 6/ Smartboard/ Brain pop
8.G	3	What effect do dilations, translations, rotations and reflections have on coordinates?	3	Online activity http://www.onlinemathlearning.com/transformation-game.html			Chapter 4 and 6/ Smartboard/ Brain pop
8.G	4	Why are two images similar after a series of translations, reflections, rotations, and dilations?	6	Brain pop video Communicators – Practice problems EA extension activities			Chapter 4 and 6/ Smartboard/ Brain pop/ Worksheets

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Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.G	5	What are the relationships of angles that are formed when parallel lines are cut by transversals?	8	Create angle booklet Play interactive online activity http://www.onlinemathlearning.com/transformation-game.html			Chapter 6/ Smartboard/ Worksheets
Understand and apply the Pythagorean Theorem							
8.G	6	What is Pythagorean theorem?	3	EA extension activity Acceleration		Formative: Teacher observation/ ticket out of the door/ communicators/ pair share	Chapter 3/ Brain pop/ Worksheets/ Smartboard
8.G	7	How can you use Pythagorean theorem to determine unknown side lengths of a triangle?	5	Straw activity Foldable – for finding a, b, and c		Summative: Test/Quiz/Project	Chapter 3/ Brain pop/ Worksheets/ Smartboard
8.G	8	How can you use Pythagorean theorem to find the distance between two points?	3	Map activity Pythagorean town project	Social studies- map skills		Chapter 3

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Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.G	9	What are the formulas for finding volume of 3D shapes and how can you use them to solve real world problems?	10	EA enrichment activities Acceleration Cut out and tape together 3D figure- use to figure out surface area	Science-Measurement	Formative: Teacher observation/ Ticket out the door/ Communicators/ Pair share Summative: Test/Quiz	Chapter 7/ Manipulatives/ Worksheets/ Smartboard

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Statistics and Probability							
Investigate patterns of association in bivariate data							
Grade Level Standards		Essential Questions	Time Frame (days)	Activities and Differentiation	Cross Curricular Connections	Assessment/Benchmark	Resources
Domain	Standard						Glencoe McGraw-Hill Math Connects 2009
8.SP	1	How do you construct and interpret scatter plots?	3	EA enrichment activities Acceleration Think aloud		Formative: Teacher observation/ ticket out of the door/ communicators/ pair share	Chapter 9/ Smartboards/ Worksheets
8.SP	2	Why are straight lines used to model relationships between two variables?	2	Gather real world data and graph and on a scatter plot		Summative: Test/Quiz	Chapter 9
8.SP	3	How do you use the equation of a linear model to solve problems in the context of bivariate data?	4	Math connects PowerPoint.			Chapter 9
8.SP	4	How can you create a two way table to compare bivariate data?	4	Use classroom data to create two way table	Science-collecting data and constructing tables		Chapter 9/ Worksheets/ Smartboard

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