IAA Curriculum

Content Area	Mathematics	Grade	6
Course Name	Math 6		

Unit Number	Unit Topic	Instruction	Review/Reteach/Extension	Assessing	Buffer	Total
1	Multiply and Divide Fractions	12	1	1		14
2	Ratios and Proportional Relationships	15	1	1		17
3	Factors and Multiples	10	1	1		12
4	Integer Operations	15	1	1	1	18
5	Ordering and Graphing Rational Numbers	12	1	1		14
6	Percents	12	1	1	1	15
7	Expressions	15	1	1	1	18
8	Equations	10	1	1		12
9	Geometry	12	1	1		14
10	Statistics and Probability	5				5
Extra	a Assessment Days/Days After Testing					35
Total Time		118	9	9	3	174
School Days	174					
Free Days	0					
				-	-	

Unit / Concept	Unit 1. Multiply and Divide Fr	Unit 1. Multiply and Divide Fractions						
Big Ideas	Dividing fractions is the inver	Dividing fractions is the inverse operation of multiplying fractions and uses the reciprocal as the divisor.						
EQ	How do I divide fractions and	mixed numbers?						
Competencies	Divide Fractions including mix	ked numbers, whole numbers a	nd estimations					
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary		
12 Days	Solve real-world and mathematical problems involving division of fractions with 80% accuracy or higher.	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach <u>Numberphile Cake Sharing Example</u> Brainpop Brownie Example Khan Academy Example Ruler Fraction Video Edgenuity Notes	M06.A-N.1.1	M06.A-N.1.1.1 -Interpret and compute quotients of fractions (including mixed numbers), and solve word problems involving division of fractions by fractions.	1.1.1 Given a story context for $(2/3) \div (3/4)$, explain that $(2/3) \div (3/4) = 8/9$ because 3/4 of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = (a/b) \times (d/c) =$ ad/bc.): How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi? Example 3: How many 2 1/4-foot pieces can be cut from a 15 $1/2$ -foot board?	Quotient Dividend Divisor. Factor Product Reciprocal Inverse Mixed number		
Resources		cgraw-hill.com, Traditional white Hand held dry erase paddles fo			Apple TV. Student dry erase m	arkers. Computer		
Formative Assessments	"Do Now" polls, classwork an	d homework examples, exit tick	iets					
Summative Assessments	Quizzes, Tests, Performance	Based Tasks, Projects.						
ELL / IEP Support	Translated "Do Now" examp	les and content, notes folder co	ontaining examples of	of completed, and accura	te problems.			

Unit / Concept	Unit 2. Ratios and Pro	Unit 2. Ratios and Proportional Relationships						
Big Ideas	Ratios are comparisons	Ratios are comparisons between two quantities showing the number of times one value contains or is contained within the other.						
Essential Question		coning to solve problems? alent ratios in the real world?						
Competencies	Represent and/or solve	e real world and mathematical proble	ms using rates, ratio	os, and/or percents. (Perce	nts done separately and later)			
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary		
15 Days	Write ratios in three ways that represent the relationship between two quantities with 80% accuracy or higher.	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Self-Paced Google Slide Deck Review Ratios / Percents <u>Muzology - Ratios Rates &</u> <u>Percents</u> <u>Comparing Ratios Using Ratio</u> <u>Tables</u> Extend - Cross Products Extra Credit Activity Unit Rate Grocery Worksheet (Grocery Items) Adapted Fishtank Curriculum	M06.A-R.1.1	1.1.1 Use ratio language and notation (such as 3 to 4, 3:4, 3/4) 1.1.2 Find the unit rate a/b associated with a ratio a:b (with $b \neq 0$) and use rate language in the context of a ratio relationship. 1.1.3 Construct tables of equivalent ratios relating quantities with whole-number measurements, 1.1.4 Solve unit rate problems including those involving unit pricing and constant speed. 1.1.5 Find a percent of a quantity as a rate per 100	 1.1.1 (3 to 4, 3:4, 3/4) to describe a ratio relationship between two quantities. "For every five votes candidate A received, candidate B received four votes." 1.1.2 (e.g., 30% of a quantity means 30/100 times the quantity); 1.1.3 Use tables to represent proportional relationships 1.1.4: If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? 1.1.5 - 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percentage. 	Ratio Rates Ratio table Equivalent fractions Proportion Cross Products Unit Rate Compound		
Resources		ED.mcgraw-hill.com, Traditional whit vities. Hand held dry erase paddles for			pple TV. Student dry erase mark	ers. Computer		
Formative Assessments	"Do Now" polls, classw	ork and homework examples, exit tic	kets					

Summative Assessments	Quizzes, Tests, Performance Based Tasks, Projects.
ELL and IEP Support	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems.



Unit / Concept	Unit 3. Factors and Mu	Unit 3. Factors and Multiples						
Big Ideas	Develop and/or apply n	Develop and/or apply number theory concepts to find common factors and multiples						
Essential Question	How can mathematical	ideas be represented?						
Competencies	Compute with multi-digi	t numbers and find common fa	actors and multi	ples.				
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary		
10 Days	Find common factors and multiples of two numbers (up to 2 - 3 digits) with 80% accuracy or higher	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Danika McKellar's Birthday Cake Method Adapted PSSA	M06.A-N.2.2	 2.2.1 - Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. 2.2.2 Apply the property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. 	 2.2.1 - Express 36 + 8 as 4(9 + 2). 2.2.2 -: Express 36 + 8 as 4(9 + 2). 	LCM - Least Common Multiple GCF - Greatest Common Factor Distributive Property Factoring		
Resources	Glencoe Math Connectl one to one activities. Ha	ED.mcgraw-hill.com, Tradition and held dry erase paddles for	al whiteboard a group activities	nd Intuos drawing tool projected vi s. Calculators	a Apple TV. Student dry era	ise markers. Computer cart fo		
Formative Assessments	"Do Now" polls, classwo	ork and homework examples,	exit tickets					
Summative Assessments	Quizzes, Tests, Perform	Quizzes, Tests, Performance Based Tasks, Projects.						
ELL and IEP Support	Translated "Do Now" e	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems.						
	Translated "Do Now" e	examples and content, notes f	older containing	examples of completed, and accu	rate problems.			

Unit / Concept	Unit 4. Integer Operations						
Big Ideas	Positive and negative numbe plane.	Positive and negative numbers are used together to describe quantities having opposite directions or values and locations on the number line and coordinate lane.					
Essential Question	How can positive and negation How are integers and absolution	ve values be represented? ite value used in real-world situ	ations?				
Competencies	Apply and extend previous u	nderstandings of numbers to th	e system of rational	numbers			
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary	
15 days +	Demonstrate that positive and negative numbers are used together to describe quantities having opposite directions or values by correctly identifying values on number lines with 80% accuracy or higher.	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Adapted Fishtank Khan Academy - Absolute Value of Integers Positive & Negative Numbers (Muzology) Lyrics	M06.A-N.3.1	 3.1.1 Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation 3.1.2 Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself 3.1.3 Locate and plot integers and other rational numbers on a horizontal or vertical number line; 	3.1.1 (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). 3.1.2 - (e.g., $-(-3) =$ 3; 0 is its own opposite). 3.1.3 locate and plot pairs of integers and other rational numbers on a coordinate plane.	Number line Integer Negative integer Absolute value Opposites Coordinate Plane Ordered pair X axis Y axis Quadrant Cartesian Plane	
Resources	Glencoe Math ConnectED.m one for each student Studen	cgraw-hill.com, Traditional whit t dry erase markers. Computer	eboard and Intuos d cart for one to one a	rawing tool projected via Apple T activities	℃. Dry erase coordinate g	rid (magnetic and	
Formative Assessments	"Do Now" polls, classwork ar	nd homework examples, exit tic	kets				
Summative Assessments	Quizzes, Tests, Performance	Based Tasks, Projects.					
ELL/IEP Support	Translated "Do Now" exam	ples and content, notes folder c	ontaining examples	of completed, and accurate prob	olems.		

Unit / Concept	Unit 5. Ordering and Graphing	Unit 5. Ordering and Graphing Rational Numbers						
Big Ideas	Rational numbers have fixed va	Rational numbers have fixed value along a continuum						
Essential Q	How do I order the value of ratio	onal numbers?						
Competencies	Apply and extend previous und	erstandings of numbers to the	e system of ratior	nal numbers				
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary		
2 Days	Demonstrate that positive and negative numbers are used together to describe quantities having opposite directions or values by correctly identifying values of rational numbers on number lines with 80% accuracy or higher.	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Ordering Rational Numbers Edpuzzle Graphing Ordered Pairs - Muzology / Lyrics Coordinate Grid Song Seasonal Coordinate Graphing Activity / Project	M06.A-N.3.2	 3.2.1 - Write, interpret, and explain statements of order for rational numbers in real-world contexts 3.2.2 - Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation. 3.2.3 - Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane 	 3.2.1 - Write - 3°C > - 7°C to express the fact that - 3°C is warmer than - 7°C. 3.2.2 - For an account balance of - 30 dollars, write - 30 = 30 to describe the size of the debt in dollars, and recognize that an account balance less than - 30 dollars represents a debt greater than 30 dollars. 3.2.3 Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. 	Magnitude Debt Credit Withdraw Deposit Rational Number Temperature Number line Integer Negative integer Absolute value Opposites Coordinate Plane Ordered pair X axis Y axis Quadrant Cartesian Plane		
Resources	Glencoe Math ConnectED.mcg one for each student) Student d				ole TV. Dry erase coordinate g	rid (magnetic an		
Formative Assessments	"Do Now" polls, classwork and l	homework examples, exit tick	kets					

Summative Assessments	Quizzes, Tests, Performathe quantitative relation between two amounts showing the number of times one value contains or is contained within the other.nce Based Tasks, Projects.
ELL and IEP Support	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems.



Unit / Concept	Unit 6. Percents					
Big Ideas	Percents are comparis	ons to 100.				
Essential Question	How can I use	e ratios to solve percent problems?				
Competencies	How can I use	e ratios to find percent or convert mea	asurement units?			
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary
12 Days +	Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percent.	Just Percents - Google Slide Deck Self-Paced Review & accompanying Menu Math (Compound Calculating Percents) High Price Harry / Pizza People Project	MA.CC.2.1.6.D.1	MA.M06.A-R.1.1	MA.M06.A-R.1.1.5	
Resources		tED.mcgraw-hill.com, Traditional whit vities. Hand held dry erase paddles f			Apple TV. Student dry erase mar	kers. Computer
Formative Assessments	"Do Now" polls, classw	ork and homework examples, exit tic	kets			
Summative Assessments	Quizzes, Tests, Perforr	Quizzes, Tests, Performance Based Tasks, Projects.				
ELL and IEP Support	Translated "Do Now"	examples and content, notes folder c	containing examples	of completed, and accura	te problems.	

Unit / Concept	Unit 7. Expressions	Unit 7. Expressions						
Big Ideas	Numerical expressions	s have a mathematical value.						
Essential Understandings	Apply and extend prev	vious understandings of arithmetic to n	umerical and a	lgebraic expressions				
Competencies	Identify, write, and eva	luate numerical and algebraic express	ions.					
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary		
15 Days	Identify and differentiate between expressions and equations with 80% accuracy or higher. Translate word problems to expressions or equations with 80% accuracy or higher	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Enrich: Exponent Pattern Wks <u>Math Antics - Variables</u> Payday - Hands - On Game Nearpod - Time To Climb Activity Extend: Kitty Kat Cafe on Wheels Part I PEMDAS - Order of Operations Relay PEMDAS - Puzzle Activity	M06.B-E.1	 1.1.1 - Write and evaluate numerical expressions involving whole-number exponents. 1.1.2 - Write algebraic expressions from verbal descriptions. 1.1.3 - Identify parts of an expression using mathematical terms (e.g., sum, term, product, factor, quotient, coefficient, quantity). 1.1.4 - Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems. 1.1.5 - Apply the properties of operations to generate equivalent expressions. 	 1.1.1 - Evaluate a base to a power 1.1.2 - Express the description "five less than twice a number" as 2y - 5. 1.1.3 - Describe the expression 2(8 + 7) as a product of two factors. 1.1.4 - Evaluate the expression b2 - 5 when b = 4. 1.1.5 - Apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x. Apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6(4x + 3y). Apply properties of operations to y + y + y to produce the equivalent expression 3y. 	Expression Equation Exponent Base Power Term Coefficient Quantity Variable Substitution Like Terms Formula Order of Operations PEMDAS		

Resources	Glencoe Math ConnectED.mcgraw-hill.com, Traditional whiteboard and Intuos drawing tool projected via Apple TV. Student dry erase markers. Computer cart for one to one activities. Hand held dry erase paddles for group activities. Calculators
Formative Assessments	"Do Now" polls, classwork and homework examples, exit tickets
Summative Assessments	Quizzes, Tests, Performance Based Tasks, Projects.
ELL / IEP Support	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems. Recorded conference examples to be played at student's convenience



Unit / Concept	Unit 8. Equations								
Big Idea	Real world equations are solvable.								
Essential Question	How do I solve a one-variable equation or inequality? How do I apply problem solving to real-world and mathematical problems?								
Competencies	Interpret and solve one-variable equations and inequalities								
Dates	SMART GoalInstructional Strategies and ActivitiesPA StandardsPSSA AnchorsPSSA Eligible ContentVocabula								
10 Days	Interpret word problems representing real world one variable equations / inequalities and solve for that variable with 80% accuracy or higher.	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Khan Academy - One Step Equations Kitty Kat Cafe on Wheels Part II (emphasis on solving one step equations) Revise so that variables are not used. Substitute words and or ? / blank symbols	M06.B-E.2 Interpret and solve one-variabl e equations and inequalities	 2.1.1 Use substitution to determine whether a given number in a specified set makes an equation or inequality true. 2.1.2 Write algebraic expressions to represent real-world or mathematical problems. 2.1.3 Solve real-world and mathematical problems by writing and solving equations 	 2.1.1 - Evaluate x+2 given x=3 2.1.2 - Ida's age was 5 years less than her sister Maria. 2.1.3 - solve of the form x + p = q and px = q for cases in which p, q, and x are all non-negative rational numbers 	Expression Equation Term Coefficient Quantity Variable Substitution Like Terms Formula Order of Operations			
Resources	Glencoe Math ConnectED.mcgraw-hill.com, Traditional whiteboard and Intuos drawing tool projected via Apple TV. Student dry erase markers. Computer cart for one to one activities. Hand held dry erase paddles for group activities. Calculators								
Formative Assessments	"Do Now" polls, classwork and homework examples, exit tickets								
Summative Assessments	Quizzes, Tests, Performance Based Tasks, Projects.								
ELL and IEP Support	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems. Recorded conference examples to be played at student's convenience								

Unit / Concept	Unit 9. Geometry							
Big Ideas	2D & 3D geometric figures have mathematically quantifiable measurements							
EQ	How do I solve real-world and mathematical problems involving area, surface area, and volume?							
	How do I determine what fits inside a 3 dimensional figure?							
Competencies	Find area, surface area, and volume by applying formulas and using various strategies¶ Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.							
Dates	SMART Goal Instructional Strategies PA Standards PSSA Anchors PSSA Eligible Content Vocabulary							

	cart for one to one activities. Hand held dry erase paddles for group activities. Calculators¶				
Formative Assessments ¶	"Do Now" polls, classwork and homework examples, exit tickets¶				
Summative ¶ Assessments¶	Quizzes, Tests, Performance Based Tasks, Projects.¶				
ELL / IEP Support¶	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems. ¶				



Unit / Concept	Unit 10. Statistics and Probability									
Big Ideas	How do I describe and represent data sets? How do I display statistical variability and central tendency?									
EQ	Demonstrate understanding of statistical variability by summarizing and describing distributions.									
Competencies	Display, analyze, and summarize numerical data sets in relation to their context.									
Dates	SMART Instructional Strategies PA PSSA Anchors PSSA Eligible Content									
PSSA Dependent	Correctly display statistical variability by analyzing, and summarizing distributions with 80% accuracy or higher	Direct instruction, guided practice and independent practice. Glencoe MH PSSA Coach Fishtank	M06.D-S.1.1 Display, analyze, and summarize numerical data sets in relation to their context.	 1.1.1 Display numerical data in plots on a number line, 1.1.2 Determine quantitative measures of center 1.1.3 - Describe any overall pattern and any deviations from the overall pattern 1.1.4 - Relate the choice of measures of center and variability to the shape of the data distribution 	 1.1.1 - Represent data using line plots, histograms, and box-and whisker plots 1.1.2 Find the median, mean, mode) of discrete data sets. 1.1.3 reference data within the context gathered. 1.1.4 - Relate the distribution to the context in which the data were gathered. 	Central Tendency Average Mean Median Mode Box Whisker Plot Range Quartile Deviation Histogram Line Plot Data Distribution Data Set Variability Interquartile Range Absolute Deviation				
Resources	Glencoe Math ConnectED.mcgraw-hill.com, Traditional whiteboard and Intuos drawing tool projected via Apple TV. Student dry erase markers. Computer cart for one to one activities. Hand held dry erase paddles for group activities. Calculators									
Formative Assessments	"Do Now" polls, classw	ork and homework examples, exit tickets		"Do Now" polls, classwork and homework examples, exit tickets						

Summative Assessments	Quizzes, Tests, Performance Based Tasks, Projects.

Additional Content

Unit / Concept	Computations with Multi-Digit Numbers							
Big Ideas	Mathematical equivalencies may be represented in different ways.							
Essential Question	How can mathematical ideas be represented? How do I compute multi-digit numbers?							
Competencies	Compute with multi-digit numbers using the four arithmetic operations with or without a calculator							
Dates	SMART Goal	Instructional Strategies	PA Standards	PSSA Anchors	PSSA Eligible Content	Vocabulary		
12 days	Identify and choose appropriate processes to compute fluently with multi-digit numbers with 80% accuracy or higher.	Direct instruction, guided practice and independent practice. Glencoe MH - PSSA Coach Muzology Multiplying and Dividing Decimals	M06.A-N.2.1.1	2.1.1 - Solve problems involving operations (+, -, ×, and ÷) with whole numbers, decimals (through thousandths),	2.1.1 - straight computation, or word problems	Rational Number Decimals Divisor Dividend Product Subtraction Addition		
Resources	Glencoe Math ConnectED.mcgraw-hill.com, Traditional whiteboard and Intuos drawing tool projected via Apple TV. Student dry erase markers. Computer cart for one to one activities. Hand held dry erase paddles for group activities. Calculators							
Formative Assessmen ts	"Do Now" polls, classwork and homework examples, exit tickets							
Summative Assessments	Quizzes, Tests, Performance Based Tasks, Projects.							
ELL / IEP Support	Translated "Do Now" examples and content, notes folder containing examples of completed, and accurate problems. Recorded conference examples to be played at student's convenience.							

Unit / Concept	Bivariate Equations								
Big Ideas¶	Relationships between independent and dependent variables are quantifiable¶								
Essential Question¶	How do I represent and analyze quantitative relationships between dependent and independent variables?¶								
Competencies¶	Use variables to represent two quantities in a real-world problem that change in relationship to one another. ¶								
Dates¶ ¶	SMART¶ Instructional PA¶ PSSA Anchors¶ PSSA Eligible Vocabulary¶ Goal¶ Strategies¶ \$ Standards¶ Content¶ Vocabulary¶								
¶ 12 days¶	Analyze scientific experiments to determine and represent independent and dependent variables with 80% accuracy or higher. ¶ € Evaluate and graph direct and indirect relationships between variables with 80% accuracy or higher.¶	Direct instruction, guided practice and independent practice. ¶ Glencoe MH - PSSA Coach¶ ¶ Science Experiment - Identify Independent versus dependent variable Activity¶	M06.B-E.3.1 Use variables to represent two quantities in a real-world problem that change in relationship to one another¶	 3.1.1 Write an equation to express the relationship between the dependent and independent variables.¶ 3.1.2 -Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation.¶ 	 3.1.1 - In a problem involving motion at a constant speed of 65 units, write the equation d = 65t to represent the relationship between distance and time.¶ 3.1.2 Choose and create a graph to represent data relationships that vary directly or indirectly¶ 	Independent Variable¶ Dependent Variable¶ ¶ Direct variation¶ Indirect variation ¶			
Resources¶	Glencoe Math ConnectED.mcgraw-hill.com, Traditional whiteboard and Intuos drawing tool projected via Apple TV. Student dry erase markers. Computer cart for one to one activities. Hand held dry erase paddles for group activities. Calculators¶								
Formative Assessments¶	"Do Now" polls, classwork and homework examples, exit tickets¶								
Summative ¶ Assessments¶	Quizzes, Tests, Performance Based Tasks, Projects.¶								
ELL / IEP Support¶	Translated "Do Now" examp	ples and content, notes folde	er containing exampl	es of completed, and accurate	e problems. ¶				