Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Number and Quantity
CCSS Domain: The Real Number System (N-RN)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Extend the properties of exponents to rational exponents	describe the effects of all operations on rational numbers, including integers.	MA 1 1.10 MA 5 3.3 MA 5	Skill/Concept	Give the prime factorization of a set of numbers by making factor trees.	Project
	use rational numbers (fractions, decimals, percents to solve problems.			Describe and give examples of how multiplication and division are used to solve problems. Using the opposite operation, prove your answer.	Questioning
	recognize equivalent representations for the same number and generate them by decomposing and composing numbers.			Given a shopping ad, determine cost @ 25%, 50%, 1/4, and 1/2 off. Determine best answer, determine purchase price including sales tax.	Think/pair/share

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Number and Quantity
CCSS Domain: The Real Number System (N-RN)

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Use properties of rational and irrational numbers	describe numbers according to their characteristics, including whole number common factors and multiples, prime or composite, etc.	MA 5 1.10	Skill/Concept	Give the prime factorization of a set of numbers by making factor trees.	Classroom assignment

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Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Number and Quantity
CCSS Domain: Quantities (N-Q)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Reason quantitatively and use units to solve problems	apply operations to real numbers using mental math, paper-and-calculations for simple cases, and technology for more complicated cases.	MA 5 1.10	Skill/Concept	Setting up a checking account to pay for transactions by writing checks, keeping the balance sheet, filling out deposit slips and including all fees that the bank charges.	Review balance sheet

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Number and Quantity
CCSS Domain: The Complex Number System (N-CN)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Perform arithmetic operations with complex numbers	apply all operations on all rational numbers, including integers.	MA 1 3.1	Recall	Increase or decrease the amounts of ingredients in recipes by finding equivalent amounts.	individual white boards

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Number and Quantity
CCSS Domain: The Complex Number System (N-CN)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Represent complex numbers and their operations on the complex plane	solve problems involving proportions such as scaling and finding equivalent ratios.	MA 1 3.2	Skill/Concept	Write a proportion, then solve each problem. 1. Riding a bike 10 miles in one hour, how far can you ride in four hours? 2. If you can paint 20 feet of fence in 15 minutes, how many feet of fence can you paint in one hour? 3. A car uses 2 gallons of gas to go 60 miles. How much gasoline does it take to go 240 miles?	Thumbs up/ Thumbs down

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Algebra
CCSS Domain: Seeing Structure in Expressions (A-SSE)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Interpret the structure of expressions	compare and contrast various forms of representations of patterns.	MA 4 1.6	Skill/Concept	Find the missing integers in these patterns: 1. 24, ___, 18,15, ___, 9, ___ 2. 2, 7, ___, 17, ___, 27, 32 3. 1, 2, 4, ____, 16, ___, ___ 4. 1, 3, ___, 7, ___, 11, ___, ___ Compare the patterns. In which one were the missing integers the easiest to determine? Explain.	Think/pair/share

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)					
CCSS Conceptual Category: Algebra					
CCSS Domain: Seeing Structure in Expressions (A-SSE)					
Show-Me Standards					

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Write expressions in equivalent forms to solve problems	identify functions as linear or non linear from tables, graphs, or equations.	MA 4 1.6	Recall Skill/Concept	Plot information in the form of table. Then plot the same information on a graph and connect the points. Which representation more clearly shows a linear pattern? With which one is the rate of change easier to understand and why.	Observations
	compare situations with constant or varying degrees of change.	MA 4 1.6		Solve the problem: In 2002 the number of digital cameras sold was 36,000. By 2005, the number reached over 60,000. What is the rate of change in sales per year? At 8:00 a.m., the temperature was 32 degrees Fahrenheit. By 1:00 p.m.. it reached 57 degrees Fahrenheit. What was the rate of change per hour?	Classroom assessment

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Algebra
CCSS Domain: Creating Equations (A-CED)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Create equations that describe numbers of relationships	create equations that describe using multiple representations such as graphs, tables, and linear equations.	MA 4 3.6	Skill/concept	A Girl Scout troop with a membership of 24 girls is selling cookies. Their goal is to sell 768 boxes in 2 weeks time. How many boxes must each of the 24 girls sell during the 2 week in order for the troop to reach their goal? Show your work.	Practice Presentations

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Algebra
CCSS Domain: Reasoning with Equations and Inequalities (A-REI)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Understand solving equations as a process of reasoning and explain the reasoning	use symbolic algebra to represent and solve problems that involve linear relationships.	MA 4 3.3	Recall	Given mathematical equations with numbers and variables (i.e. x, n, a, etc.) representing an unknown value, solve for the variable using algebraic procedures.	Individual White Board

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Algebra
CCSS Domain: Reasoning with Equations and Inequalities (A-REI)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Solve equations and inequalities in one variable	use properties to generate equivalent forms for simple algebraic expressions that include rationals and integers.	MA 4 3.2	Recall	Solve problems involving factorization of numbers. Define factoring and factor the numbers. Write the numbers in 3 different ways.	Think/Pair/Share

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Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Geometry
CCSS Domain: Congruence (G-CO)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Experiment with transformations in the plane	identify similar and congruent shapes and the 2-dimensional cross section of a 3-dimensional shape.	MA 2 1.10	Recall	Find the length of the hypotenuse of a right triangle with a base of 5 straight side of 12. Procedure: use the Pythagorean Theorem - square the measure of the base and the straight side, add to find the square of the hypotenuse, then find the square root of the hypotenuse.	Questioning
	describe relationships between corresponding sides, corresponding angles, and corresponding perimeters of similar polygons.	MA 2 1.6		Determine the measure of the missing side (length) of a rectangle when given the measure of the width by comparing it to a smaller, equally proportional rectangle with the measures of length and width given.	Constructive Quiz

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Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Geometry
CCSS Domain: Congruence (G-CO)

Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Understand congruence in terms of rigid motions	reposition shapes under formal transformations, such as reflection (flip), rotation, (turn), and transition (slide). represent translations, reflections, rotations, and dilations of objects in the coordinate plane.	MA 2 3.3	Skill/Concept	Divide a piece of paper in half. Draw a triangle on the left side of your paper with a base of 3" and a straight side of 5". Begin changing the position of your triangle by flipping, turning, and sliding it over the center line. Name and show the position of the triangle after each transformation	Think/Pair/Share

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Geometry
CCSS Domain: Congruence (G-CO)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Prove geometric theorems	prove equivalent area and volume measures within a system of measurement (e.g. ft. to sq in. to cm, meters, cubic centimeters, cubic meters, etc.).	MA 2 1.6	Recall	Determine area of a wall, subtracting, windows and doors; amount of paint needed, wallpaper. Determine floor area for carpet, or land for fence, garden, etc.	classroom assignment
Make geometric constructions	use coordinate geometry to construct and identify geometric shapes in the coordinate plane using their properties.	MA 2 3.2	Recall	Draw a right triangle on graph paper with a base of 6 and a straight side of 6 and answer these questions: 1. How many right angles does you right triangle have? 2. What is the relationship of the acute angles? What is the measure of the hypotenuse?	Observation

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Geometry
CCSS Domain: Similarity, Right Triangles, and Trigonometry (G-SRT)

Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Understand similarity in terms of similarity transformations	determine all lines of symmetry.	MA 2 1.6	Recall	Draw a square on paper using a ruler. Position the ruler so the image matches with part of the figure on the opposite side of the ruler. Each time a line of symmetry is formed, draw it on the figure. Repeat with other (regular) polygons. For each regular polygon pictured (shown is an equilateral triangle, circle, rectangle, pentagon, and octagon). Name the: polygon, number of sides, number of diagonals acting as lines of symmetry and total number of lines of symmetry.	Observation Observation

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Geometry
CCSS Domain: Similarity, Right Triangles, and Trigonometry (G-SRT)

Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Prove theorems involving similarity	draw or use visual models to represent and solve problems.	MA 3.3	Strategic Thinking	Create a tessellation pattern on graph paper: draw a square; draw some simple shapes in the square; move the shapes to the opposite; repeat the shapes to create a pattern.	Observation

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Geometry
CCSS Domain: Circles (G-C)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Understand and apply theorems about circles	solve problems involving circumference and/or area of a circle and surface area/volume of a rectangular or triangular prism or a cylinder.	MA 2 1.10	Recall	Write the formula for circumference, area, or volume. Then substitute letters in the formula for numbers that correlate to the circle, cylinder, box, etc.	Classroom Assignment

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Statistics and Probability
CCSS Domain: Interpreting Categorical and Quantitative Data (S-ID)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Summarize, represent, and interpret data on a single count or measurement variable	find the range and measures of center, including median, mean, and mode.	MA 3 1.10	Skill/Concept	Apply the meaning of mean, median, mode and range for the following set of data.	Questions
	select, create and use appropriate graphical representation of data, including circle, graphs, histograms, etc.	MA 6 1.8, 3.6		Draw a line, bar, and circle that organizes and displays the data below.	Project

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Statistics and Probability
CCSS Domain: Conditional Probability and the Rules of Probability (S-CP)

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Understand independence and conditional probability and use them to interpret data	find, use and interpret measure of center, and spread, including range.	MA 3 1.10	Recall	Find the mean and range of different sets of data.	Quiz
	compare different representations for the same data and evaluate how well each representation shows the important aspects of the data.	MA 3 1.10		Make a line graph spaying the ages of the following 5 Presidents at their first inauguration. The ages are: 46, 58, 52, 61, and 47. Connect the points and describe the shape generated..	Classroom assignments

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Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)

CCSS Conceptual Category: Statistics and Probability

CCSS Domain: Conditional Probability and the Rules of Probability (S-CP)

Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Use the rules of probability to compute probabilities of compound events in a uniform probability model	use observations about differences between samples to make conjectures about the population from which the samples were taken.	MA 3 3.6	Strategic Thinking	Given information showing father' heights and their sons' heights when grown, answer the questions. 1) How many fathers and sons have the same height? 2) On the basis of this information could you predict the height of the son knowing the height of the father?	Think/pair/share

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Conceptual Category: Statistics and Probability
CCSS Domain: Using Probability to Make Decisions (S-MD)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Calculate expected values and use them to solve problems	use models to compute the probability of an event and make conjectures (based on theoretical probability).	MA 3 3.8	Strategic Thinking	The faces of a number cube are labeled 1,2,3,4,5 and 6. If the cube is rolled once, what is the probability of rolling an odd number. (Use the probability fraction: P = # of favorable outcomes.) Reduce results to lowest terms and calculate percent.	Think/pair/share

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Domain Measurement and Data (MD)

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Work with time and money	solve problems involving elapsed time (hours and minutes).	MA 5 3.1	Skill/concept	Solve problems using time leaving to arrival time; starting to work to leaving

Solve problems involving addition and subtraction of time (hours, minutes and seconds). | Classroom Assignment |

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Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Domain Measurement and Data (MD)

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Convert like measurement units within a given measurement system	convert from one unit to another within a system of linear measurement.	MA 2 1.6	Skill/concept	Convert kilometer, meters, inches, feet including distance; yards, miles and weight: pounds, grams etc.	individual white boards

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Domain Measurement and Data (MD)
Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Represent and interpret data	identify equivalent weights and capacities within a system of measure.	MA 2 1.6	Recall	Know structures of measurement and work together to measure and convert these measurements within each system.	Think/pair/share
	identify equivalent weights and capacities within a system of measure.	MA 2 1.6		Know structures of measurement and work together to measure and convert these measurements within each system.	Classroom Assignment

Mathematics Curriculum

Subject Area: Intermediate Math II (9-12)
CCSS Domain Measurement and Data (MD)

Show-Me Standards

CCSS Cluster	Common Core Standard	Show Me Standards	DOK	Instructional Strategies Student Activities/Resources	Assessment
	The students will:				
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition	use tools to measure angles to the nearest degree and classify the angle as acute, obtuse, right, straight or reflex.	MA 2 3.2	Recall	Using a ruler, construct an angle, then measure angles to the nearest degree and using a protractor; find the measure of angle A of triangle ABC if angle B=65 degrees and angle C = 40 degrees.	Discussions
	solve problems involving circumference and/or area of a circle and surface area/volume of rectangular or triangular prism or a cylinder.	MA 2 1.10		Write the formula for circumference, area or volume; substitute letters in formula for numbers that correlate to circle and or cylinder.	white boards