Course Description

Integrated Math II

Integrated Math II

Course Rationale:
Integrated Math is designed as an enhancement course for topics in secondary mathematics education. Topics introduced in Integrated Math provide the foundation students require for future success in high school mathematics, critical thinking, and problem solving. The primary goal in Integrated Math is to help students develop more concrete mathematical knowledge and apply this knowledge to applications represented in Missouri EOC assessment tests. The Integrated Math curriculum samples from the diverse topics often found on the EOC, and places a special emphasis on developing a plan to understand and solve these types of problems. In addition, the curriculum of Integrated Math will mimic and reinforce many of the topics students will see in their Algebra I and Geometry studies at the secondary level.

Course Description:
Integrated Math II topics include recognizing and developing patterns using tables, graphs and equations. Mathematical modeling is stressed as a methodology for approaching the solution to problems. Students will explore operations on algebraic expressions, and apply mathematical properties to algebraic equations. Students will problem solve using equations, graphs and tables and investigate linear relationships, including comparing and contrasting options and decision-making using algebraic models.   Reinforcement of topics from two-dimensional Geometry is integrated into this curriculum. This includes applications from the areas of area and perimeter, the Pythagorean Theorem and its applications, as well as geometric proportion. Finally, introductory instruction in the area of mathematical probability is provided to reinforce use of fractions and numerical modeling. Technology will be used to introduce and expand upon the areas of study listed above.

Resources:

Adopted Text: _____

Websites:

www.analyzemath.com
www.dese.mo.gov/
       Classroom Assessment Item Bank
www.edhelper.com
www.education.ti.com
www.illuminations.nctm.org
http://lnlvm.usu.edu
www.math.com/students/practice.html
http://mathematics.hellam.net/
http://mathforum.org/mathtools/sitemap.html
www.gomath.com/
www.mathgoodies.com
www.mcs.surrey.ac.uk
www.nytimes.com/learning/teachers/lessons/archive.html
www.regentprep.org/
www.satmathpro.com
http://score.kings.k12.ca.us/lessons.html
www.shodor.org/interactivate
www.stattrek.com/
www.successlink.org

Abbreviations:					
Subjects		**GLE**	**Grade Level Expectations**	**BT**	**Bloom's Taxonomy**
CA	Communication Arts		Math Strands	K	Knowledge
MA	Mathematics	NO	Number and Operations	C	Comprehension
SC	Science	AR	Algebraic Relationships	Ap	Application
SS	Social Studies	GSR	Geometric Spatial Relationships	An	Analysis
		M	Measurements	S	Synthesis
		DP	Data and Probability	E	Evaluation

Integrated Math II

Number and Operations						
1. Understand numbers, ways of representing numbers, relationships among numbers and number systems.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Represent and use rational numbers • Use real numbers to solve problems	MA 1 3.4 1.6	NO 1.B.10	Ap	>The students will work together to use real numbers to solve problems involving house painting <u>www.regentprep.org/</u> MAP A #3 Operations Applications of Mathematics Lessons for Applied Mathematics **Paint by Numbers**	Students will use real numbers to solve problems on various questions. **Attachment A**	75%
Integrated Skills: Workplace Readiness						

Number and Operations						
1. Understand numbers, ways of representing numbers, relationships among numbers and number systems.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Compose and decompose numbers • Use a variety of representations to demonstrate an understanding of very large and very small numbers	MA 5 3.6 1.8	NO 1.C.10	Ap	>The students will create their own place value chart (to the trillions) and use it to identify the position of digits in a number. They will put numbers in the correct positions and use the chart to read and write various whole numbers, as well as compare different numbers as "less than" or "greater than". The students will understand base ten, the use of commas in numbers, the places and periods on the charts. **Attachment B** (additional instruction)	Students will use a variety of representations to demonstrate an understanding of very large and very small numbers when completing a textbook assignment.	75%
Integrated Skills: Workplace Readiness						

Number and Operations						
2. Understand meanings of operations and how they relate to one another						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Apply properties of operations • Apply **properties of exponents** to simplify expressions or solve equations	MA 4 1.6 1.10	NO 2.C. 10-12	Ap	> The students will apply properties of exponents in a beginning lesson that includes assessment. http://www.mathgoodies.com/lessons/vol3/exponents.html	Students will apply properties of exponents to simplify expressions or solve equations on a constructed response question. **Attachment C**	80%
Integrated Skills: Workplace Readiness						

Number and Operations						
2. Understand meanings of operations and how they relate to one another						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Apply operations on real and complex numbers • Apply operations to real numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases	MA 1 MA 4 MA 5 1.4 3.4	NO 2.D. 9-10	Ap	>The students will apply operations when completing the SuccessLink lesson **"Compound Interest Project"** www.successlink.org	Students will apply operations to real numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases when completing a performance event activity: www.dese.gov Classroom Assessment Item Bank **All Wrapped Up**	80%
Integrated Skills: Workplace Readiness						

Number and Operations						
3. Compute fluently and make reasonable estimates.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Estimate and justify solutions • Judge the reasonableness of numerical computations and their results	MA 1 3.8	NO 3.D. 9-12	E	>The students will judge the reasonableness of computations by completing a variety of lessons. http://www.math.com/students/practice.html Teacher can choose from many types of lessons, activities and quizzes	Students will judge the reasonableness of numerical computations and their results on a textbook test.	80%
Integrated Skills: Workplace Readiness						

Number and Operations						
3. Compute fluently and make reasonable estimates.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Use proportional reasoning • Solve problems involving proportions	MA 1 MA 4 3.3 2.1	NO 3.E. 9-12	Ap	>The students will solve problems involving proportions using a step-by-step direction and variety of problems. **Attachment D** >In groups of 3 students will create proportion word problems. They will exchange their problems with another group and then check for accuracy.	Students will solve problems involving proportions on a performance activity.	80%
Integrated Skills: Workplace Readiness						

	Algebraic Relationships					
1. Understand patterns, relations and functions						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Create and analyze patterns • Generalize patterns using **explicitly** or **recursively** defined functions	MA 4 1.6 3.5	AR 1.B 9-12	C	>Students will generalize patterns using model functions whose first differences are all the same (linear models). They will find quadratic models for recursive functions whose second differences are the same. This will involve solving systems of linear equations, and we will remember how to do this by using matrices. They will model a recursive functions representing exponential growth and decay. Finally they will see that sometimes it is extremely difficult to find the model of a recursive function, but with today's technology (graphing calculators), recursive functions can be easily graphed and we can quickly find a given term. Emphasis will be put in the student's clear understanding of the difference between a recursive function and a model, and that both can represent the same sequence in different ways.	Students will generalize patterns using explicitly or recursively defined functions with a worksheet. **Attachment E**	80%
Integrated Skills: Workplace Readiness						

Algebraic Relationships						
1. Understand patterns, relations and functions						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Classify objects and representations ▪ Compare and contrast various forms of **representations** of patterns	MA 4 1.6	AR 1.C 9-12	A	>The students will compare and contrast various forms of patterns when working with the placement of frets on a musical instrument. http://illuminations.nctm.org Lessons, grades 9-12 **To Fret or Not To Fret**	Students will compare and contrast various forms of representations of patterns when completing a worksheet. **Attachment F**	80%
Integrated Skills: Workplace Readiness						

Algebraic Relationships						
1. Understand patterns, relations and functions						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Identify and compare functions ▪ Understand and compare the properties of **linear**, **exponential** and **quadratic** functions (include domain and range)	MA 4 1.6 3.6	AR 1.D 10	A	>The students will work together to understand and compare functions when completing the SuccessLink lesson "**Production Parabolas**" www.successlink.org	Students compare the properties of linear, exponential and quadratic functions on a worksheet. **Attachment G**	75%
Integrated Skills: Technology						

Algebraic Relationships						
1. Understand patterns, relations and functions						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Describe the effects of parameter changes ▪ Describe the effects of **parameter changes** on **quadratic** and **exponential** functions	MA 4 1.6 4.1	AR 1.E.10	C	>The students will describe the effects of parameter changes on quadratic and exponential functions when completing on-line activities at the following website. http://www.analyzemath.com/precalculus.html	Students will describe the effects of parameter changes on quadratic and exponential functions on a worksheet. **Attachment H**	80%
Integrated Skills: Workplace Readiness						

Algebraic Relationships						
2. Represent and analyze mathematical situations and structures using algebraic symbols.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Represent mathematical situations ▪ Use **symbolic algebra** to represent and solve problems that involve quadratic relationships, including **recursive** relationships	MA 4 MA 6 1.6 3.1	AR 2.A.10	Ap	>In groups, the students will use symbolic algebra to represent and solve problems when completing the SuccessLink lesson **"Linear Programming Project"** www.successlink.org	Students use of symbolic algebra to represent and solve problems that involve quadratic relationships including recursive relationships on a worksheet. Attachment I	80%
Integrated Skills: Workplace Readiness						

Algebraic Relationships						
2. Represent and analyze mathematical situations and structures using algebraic symbols.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Describe and use mathematical manipulation ▪ Describe and use algebraic manipulations, including factoring and rules of integer exponents	MA 4 3.1 4.1 2.1	AR 2.B. 9-10	C Ap	>The students will describe and use algebraic factoring in a BINGO game. www.successlink.org **Factor BINGO**	Students will describe and use algebraic manipulations, including factoring and rules of integer exponents on a worksheet. **Attachment J**	80%
Integrated Skills:						

Algebraic Relationships						
2. Represent and analyze mathematical situations and structures using algebraic symbols.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Utilize equivalent forms ▪ Use and solve equivalent forms of equations and inequalities (place-wise and quadratic)	MA 4 1.6 3.4	AR 2.C.10	Ap	> The students will use and solve equivalent forms of equations and inequalities when completing a performance event activity. **Attachment K**	Students will use and solve equivalent forms of equations and inequalities with a worksheet. **Attachment L**	80%
Integrated Skills: Workplace Readiness						

Algebraic Relationships						
2. Represent and analyze mathematical situations and structures using algebraic symbols.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Utilize systems ▪ Use and solve systems of linear equations or inequalities with 2 variables	MA 4 1.6	AR 2.D.10	Ap	>The students will use and solve systems of linear equations or inequalities when completing the on-line lessons, activities and assessment. www.regentprep.org/ MAP A #7 Patterns & Functions **Solve Systems of Linear Equations** **Solve Systems of Inequalities**	Students will use and solve systems of linear equations or inequalities with 2 variables on a worksheet. **Attachment M**	75%
Integrated Skills:						

124

Algebraic Relationships						
3. Use mathematical models to represent and understand quantitative relationships.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Use mathematical models ▪ Identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem	MA 4 1.6 3.6	AR 3.A. 9-10	K C	>The students will identify quantitative relationships and determine the type(s) of functions that model a situation when completing the lesson **Hanging Chains** located at the following website: http://illuminations.nctm.org Lessons, Grades 9-12	Students will identify quantitative and determine the type(s) of functions that might model the situation to solve the problem on a textbook assignment or worksheet. **Attachment N**	80%
Integrated Skills: Technology, Workplace Readiness						

Algebraic Relationships						
4. Analyze change in various contexts.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Analyze change ▪ Analyze quadratic functions by investigating rates of change, intercepts and zeros	MA 4 1.6 4.1	AR 4.A.10	A	>The students will analyze and investigate changes when completing the SuccessLink lesson **"Flying Rings"** www.successlink.org >The students will practice analyzing quadratic functions with an on-line activity. http://www.gomath.com/exercises/SlopeEquationYintercept.php	Students will analyze quadratic functions by investigating rates of change, intercepts and zeros on a textbook assignment or worksheet. **Attachment O**	80%
Integrated Skills: Technology						

Geometric and Spatial Relationships						
1. Analyze characteristics and properties of two- and three dimensional geometric shapes and develop mathematical arguments about geometric relationships.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Describe and use geometric relationships ▪ Use inductive and deductive reasoning to establish the validity of geometric **conjectures** proved theorems and critique arguments made by others	MA 2 3.5 2.1	GSR 1.A.10	Ap	>The students will use inductive and deductive reasoning to establish validity of geometric conjectures when working with parallelograms. www.successlink.org **Investigating Parallelograms** >The students will use inductive and deductive reasoning when examining Fibonacci Numbers http://www.mcs.surrey.ac.uk/Personal/R.Knott/Fibonacci/fib.html	Students will use inductive and deductive reasoning to establish the validity of geometric conjectures proved theorems and critique arguments made by others when completing assessment questions. **Attachment P**	80%
Integrated Skills: Technology						

Geometric and Spatial Relationships						
1. Analyze characteristics and properties of two- and three dimensional geometric shapes and develop mathematical arguments about geometric relationships.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Apply geometric relationships ▪ Apply relationships among surface areas and among volumes of **similar objects**	MA 2 3.6	GSR 1.B. 9-12	Ap	>The students will apply relationships among surface areas and among volumes to complete the lesson **Digging Dirt** located at the following website: http://enlvm.usu.edu/ma/nav/toc.jsp?sid=__ shared&cid=emready@application_volume &bb=published	Students will apply relationships among surface areas and among volumes of similar objects on a performance event. www.dese.gov Classroom Assessment Item Bank **A Packer's Nightmare**	80%
Integrated Skills:						

128

Geometric and Spatial Relationships						
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems						
Measurable Learner Objective The student will be able to:	Assessed Show-Me Goals	GLE Code	BT	Instructional Strategies/Student Activities/ Resources	Assessments (including Performance-based)	Mastery Min. %
Use coordinate systems ▪ Make conjectures and solve problems involving 2-dimensional objects represented with Cartesian coordinates	MA 2 3.6 4.1	GSR 2.A.10	Ap	>The students will make conjectures and solve problems when completing the SuccessLink lesson **"The Parcel of Land"** www.successlink.org	Students will make conjectures and solve problems involving 2-dimensional objects represented with Cartesian coordinates when completing questions similar to SAT questions. http://www.satmathpro.com/Coordinate.html	75%
Integrated Skills:						

Geometric and Spatial Relationships						
3. Apply transformations and use symmetry to analyze mathematical situations						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Use transformations on objects ▪ Use and apply constructions to represent translations, reflections, rotations, and dilations of objects	MA 2 1.10	GSR 3.A.10	Ap	>The students will use and apply constructions to represent transformations when completing tessellations in the SuccessLink lesson **"Escher and His Tessellations"** www.successlink.org	Students will use and apply constructions to represent translations reflections, rotations and dilations of objects when completing a worksheet/quiz. http://www.edhelper.com/geometry_highschool.htm **Transformations in the coordinate plane (grade 10)**	80%
Integrated Skills:						

Geometric and Spatial Relationships					
3. Apply transformations and use symmetry to analyze mathematical situations					
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Use transformations on functions ▪ Translate, dilate and reflect quadratic and exponential **functions**	MA 4 3.1	GSR 3.B.10	Ap	>The students will use transformations when exploring quadratic functions unsing the T1-83 calculator www.education.ti.com Activities Exchange Math Exploring Quadratic Data	Students will translate, dilate and reflect quadratic and exponential functions on a textbook assignment.	75%
Integrated Skills:					

				Geometric and Spatial Relationships		
3. Apply transformations and use symmetry to analyze mathematical situations						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Use symmetry ▪ Identify types of symmetries of 2- and 3-dimensional figures	MA 2 1.10	GSR 3.C.10	C	>The students will identify similar triangles when given the dimensions and or determine certain dimensions of one triangle when given the dimensions of a similar triangle. >The students will identify types of symmetries of 2- 3-dimensional figures when completing the lesson **"Crystals"** located at the following website: http://mathforum.org/alejandre/workshops/toc.crystal.html	Students will identify types of symmetries of 2- and 3-dimensional figures on a textbook assignment or a worksheet. http://www.edhelper.com/geometry_highschool.htm Similar Triangles	80%
Integrated Skills:						

Geometric and Spatial Relationships						
4. Use visualization, spatial reasoning and geometric modeling to solve problems.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Recognize and draw three- dimensional representations ▪ Draw representations of 3-dimensional geometric objects using a variety of tools	MA 2 1.4 1.8	GSR 4.A.10	Ap	>The students will draw representation of 3-dimensional objects using the TI-92 calculator when completing the following SuccessLink lesson **"Finding the Measures of Inscribed Angles in a Circle as Developed Through Cabri Geometry"** www.successlink.org	Students will draw representations of 3-dimensional geometric objects using a variety of tools when completing classroom activities.	80%
Integrated Skills: Technology						

Geometric and Spatial Relationships						
4. Use visualization, spatial reasoning and geometric modeling to solve problems.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Draw and use visual models ▪ Draw or use **visual models** to represent and solve problems	MA 2 3.1 1.8	GSR 4.B. 9-12	Ap	>The students will draw and use visual models to represent and solve a problem when completing the SuccessLink lesson **"Architecture"** www.successlink.org	Students will draw or use visual models to represent and solve problems when completing the performance task **"Going to the Dogs"** www.successlink.org	80%
Integrated Skills: Technology						

Measurement						
2. Apply appropriate techniques, tools and formulas to determine measurements.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Use angle measurement ▪ Solve problems of angle measure of parallel line cut by a transversal	MA 2 3.1 3.4	M 2.B.10	Ap	>The students will solve problems of angle measure of parallel line cut by a transversal when completing the lesson **"Types of Angles"** located at the following website. www.regentprep.org/ MAP A #4 Modeling/Multiple Representation Types of Angles	.Students will solve problems of angle measure of parallel line cut by a transversal on a textbook assignment or worksheet.' http://www.edhelper.com Geometry Parallel Lines	80%
Integrated Skills: Technology						

Measurement						
2. Apply appropriate techniques, tools and formulas to determine measurements.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Apply geometric measurements ▪ Determine the surface area, and volume of geometric figures, including cones, spheres, and cylinders	MA 2 3.4 4.1	M 2.C. 9-10	Ap	>In groups of 4-5, the students will determine surface area and volume of geometric figures when developing a refrigerated unit for other countries. www.successlink.org **Determining Optimal Dimensions of a Refrigeration Unit**	Students will determine the surface area, and volume of geometric figures, including cones, spheres and cylinders when completing the performance event activity "**Out of This World Geometry"** **Attachment Q**	80%
Integrated Skills:						

Measurement						
2. Apply appropriate techniques, tools and formulas to determine measurements.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Analyze precision ▪ Analyze effects of computation on **precision**	MA 2 1.7 3.8	M 2.D. 9-10	A	>The students will analyze effect of computation when completing the Real-Life Mathematics lesson **"Pixelmaniacs"** www.regentprep.org/ MAP A #3 Operations Applications of Mathematics Lessons for Applied Mathematics	Students will analyze effects of computation on precision when completing a performance event activity **"Frosted Googles."** www.dese.mo.gov Classroom Assessment Item Bank	80%
Integrated Skills: Technology						

Data and Probability						
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Formulate questions ▪ Formulate questions, design studies and collect data about a characteristic	MA 3 1.2	DP 1.A. 9-12	Ap	>The students will formulate questions, design studies and collect data about a characteristic when completing the SuccessLink lesson "**Statistics Survey Unit"** www.successlink.org >Probability and Statistic lessons and Tutorial http://www.stattrek.com/	The students will formulate questions, design studies and collect data about a characteristic on the completion of the classroom activity.	80%
Integrated Skills:						

Data and Probability						
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Represent and interpret data ▪ Select, create and use appropriate graphical representation of data	MA 3 <mark>1.8</mark> 3.6	DP 1.C. 9-10	Ap	><mark>The students will select, create and use graphical representations when focusing on Pascal's triangle and paths the SuccessLink lesson "**Counting Paths"**</mark> www.successlink.org	<mark>Students will select, create and use appropriate graphical representation of data on a performance event.</mark> www.dese.gov Classroom Assessment Item Bank **Shipping Charges**	80%
Integrated Skills: Technology						

Data and Probability						
2. Select and use appropriate statistical methods to analyze data						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Describe and analyze data ▪ Apply statistical concepts to solve problems and distinguish between a statistic and a parameter	MA 3 1.10 3.4	DP 2.A. 10-12	Ap	>The students will apply statistical concepts to solve problems when completing the unit **"Cardiac Output, Rates of Change and Accumulation"** located at the following website: http://illuminations.nctm.org Lessons, Grades 9-12	Students will apply statistical concepts to solve problems and distinguish between a statistic and a parameter when completing a T1-83 activity "**Birthday Paradox"** located at: http://illuminations.nctm.org Lessons, Grades 9-12	75%
Integrated Skills:						

Data and Probability						
2. Select and use appropriate statistical methods to analyze data						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Compare data representations ▪ Given **one-variable quantitative** data, display the distribution and describe its shape	MA 3 1.8	DP 2.B. 9-10	Ap	>The students will collect quantitative data on a question given by the teacher (example: batting averages of players on X team, scores on a test, number of members in a family, etc.) display the distribution and describe its shape.	Students will display the distribution and describe its shape of a given one-variable quantitative data a textbook assignment.	80%
Integrated Skills: Technology						

Data and Probability						
2. Select and use appropriate statistical methods to analyze data						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Represent data algebraically ▪ Display and analyze **bivariate** data where one variable is **categorical** and the other is numerical	MA 3 1.6	DP 2.C.10	A	>The students will gather bivariate data when completing the lesson **"Take Your Time"** from the NY Times. Example: Students could survey by gender the same leisure activities. http://www.nytimes.com/learning/teachers/lessons/archive.html	Students will display and analyze bivariate data where one variable is categorical and the other is numerical when completing a performance based assessment. **Attachment R**	80%
Integrated Skills:						

					Data and Probability		
3. Develop and evaluate inferences and predictions that are based on data.							
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**		**Assessments (including Performance-based)**	**Mastery Min. %**
Develop and evaluate inferences ▪ Describe how sample statistics reflect the values of population parameters and use **sampling distributions** as the basis for **informal inference**	MA 3 3.5	DP 3.A.10	E	>The students will describe how sample statistics reflect the values of population and use sampling distributions when working with the TI-83 graphing calculators, www.successlink.org **Graphing Calculators 101**		Students will describe how sample statistics reflect the values of population parameters and use sampling distributions as the basis for informal inference when completing the worksheet that accompanies the on-line lesson **"Replacement and Probability"** http://www.shodor.org/interactivate /lessons/replace.html	80%
Integrated Skills:							

				Data and Probability		
4. Understand and apply basic concepts of probability.						
Measurable Learner Objective **The student will be able to:**	**Assessed Show-Me Goals**	**GLE Code**	**BT**	**Instructional Strategies/Student Activities/ Resources**	**Assessments (including Performance-based)**	**Mastery Min. %**
Apply basic concepts of probability ▪ Describe the concepts of **sample space** and **probability distribution**	MA 3 4.1	DP 4.A.10	AP	>The students will describe the concepts of sample space and probability when completing the SuccessLink lesson **"Let's Play Powerball"** www.successlink.org >The students will describe the concepts of sample space and probability distribution when working with the on-line activity **"Hamlet Happens"** http://nlvm.usu.edu/en/nav/frames_asid_310_g_3_t_5.html	Students will describe the concepts of sample space and probability distribution when completing a performance based assessment. **Attachment S**	80%
Integrated Skills:						

						Data and Probability		

Data and Probability

4. Understand and apply basic concepts of probability.

Measurable Learner Objective The student will be able to:	Assessed Show-Me Goals	GLE Code	BT	Instructional Strategies/Student Activities/ Resources	Assessments (including Performance-based)	Mastery Min. %
Use and describe compound events ▪ Use and describe the concepts of **conditional probability** and **independent events**	MA 6 1.10 4.1	DP 4.B.10	AP	>The students will use and describe the concepts of conditional probability and independent events when completing the SuccessLink lesson **"Truth Tables"** www.successlink.org	Students will use and describe the concepts of conditional probability and independent events when completing classroom activities.	80%

Integrated Skills: