

Visions Unlimited Academy
Curriculum Map
Math Kindergarten

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Understand and apply numbers, ways of representing numbers, the relationships among numbers, and different number systems.	Number Sense	What number is this? How many are here? Which number is bigger/smaller?	Strand 1 Concept 1 PO1 model numbers 0-20, PO2 say & write numbers 0-20, PO3 counting forward & backward, PO4 identify numbers, PO5 write numbers, PO6 models of equivalent numbers, PO7 compare numbers to 20, PO8 ordinal numbers through fifth, PO9 order three numbers, PO10 identify coins	Oral performance, matching & sequencing activities, models of numbers	demonstration, using manipulatives, class discussion	variety of manipulatives, <i>Everyday Math</i> , paper, writing utensils
Understand and apply numerical operations and their relationships to one another.	Numerical Operation	What if we take ___ away?	Strand 1 Concept 2 PO1 model addition, sums through 10, PO2 model subtraction, minuends through 10, PO3 select correct operation to solve, PO4 solve word problems, PO5 apply math symbols, PO6 math terminology	class participation, written and oral answers to math problems	math games, demonstration, group discussions	math manipulatives, paper, pencil
Use estimation strategies reasonably and fluently.	Estimation	What is estimation? Guess the measurement. Check measurement. Guess the answer. Check answer.	Strand 1 Concept 3 PO1 use estimation to solve problems	demonstrate estimate of whole numbers and measurement, discussion, apply concept to solve problems	demonstration, chart and graphs to show answers and checks	ruler, pencils, cubes

Understand and apply data collection, organization, and representation to analyze and sort data.	Data Analysis	What does this graph/chart show us?	Strand 2 Concept 1 PO1 formulate questions for data collection, PO2 interpret pictographs, PO3 answer questions based on pictographs, PO5 formulate questions, PO7 solve problems using data displays	oral/written answers for graph questions, class participation	demonstration, asking questions, creating graphs/charts with shared writing	chart paper, markers, books with graphs and charts
Understand and demonstrate the systematic listing and counting of possible outcomes.	Discrete Math	How many combinations can you make from this set of two?	Strand 2 Concept 3 PO1 determine all possible outcomes involving a combination of two sets of two items	demonstration,	class discussion, graphing answers, sample	thinkfinity.org Billy Bear, colored manipulatives
Understand and apply vertex-edge graphs.	Vertex-edge Graphs	What is the least number of colors needed to color this without common edges having the same color?	Strand 2 Concept 4 PO1 color objects so common edges do not share the same color	demonstration of coloring sheet, class participation, discussion	demonstration, class discussion, examples	markers, crayons, coloring sheet,
Identify patterns and apply pattern recognition to reason mathematically.	Patterns	What is a pattern? How do we make patterns? How sure are you of what comes next in the pattern?	Strand 3 Concept 1 PO1 communicate patterns orally, PO2 extend patterns, PO3 create patterns	create a pattern, discussion, find patterns around the student	demonstration, class discussion,	pattern manipulatives, writing utensils, paper
Analyze the attributes and properties of 2 and 3 dimensional shapes and develop mathematical arguments about their relationships.	Geometric Properties	What shape is this? How could we describe this shape? How does this shape compare to this one?	Strand 4 Concept 1 PO1 identify 2D shapes, PO2 terms of position & size, PO3 shapes in the environment	matching activities, class participation, oral response	demonstration, class discussion, hands-on matching and comparing activities	math manipulatives of various shapes

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.	Measure-ment	What would we use to measure this group of objects? Group these object according to their attributes.	Strand 4 Concept 4 PO1 verbally compare objects, PO2 how objects can be measured, PO3 order objects	matching activities, class participation, oral response	demonstration, class discussion, hands-on matching and comparing activities	math manipulatives of various shapes
Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships.	Logic	How do these things go together? What attribute makes them similar/different?	Strand 5 Concept 2 PO1 sort objects, PO2 provide rationale for classification	matching & sorting activities, class participation, oral response	class discussion, hands-on matching & sorting games, asking students to explain their thinking	math manipulatives of various shapes

Visions Unlimited Academy
Curriculum Map Math Grade One

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Understand and apply numbers, ways of representing numbers, the relationships among numbers, and different number systems.	Number Sense	How does the place this digit is in tell us its value? How many tens are in ___? How many ones?	Strand 1 Concept 1 PO1 model numbers 0-100, PO2 say & write numbers 0-100, PO3 counting forward & backward, PO4 identify numbers, PO5 write numbers, PO6 models of equivalent numbers, PO7 say numbers in place value context, PO8 construct models of numbers, PO9 expanded notation, PO10 odd & even numbers, PO11 compare numbers to 100, PO12 ordinal numbers through tenth, PO13 order three numbers, PO14 model halves, PO15 say & write fractions, PO16 identify coins & bills, PO17 count coins through \$1.00, PO18 value of collection of coins, record using symbols	performance rubrics, class participation, correctness of model, oral response	demonstration, hands-on number projects, modeling of numbers w/ manipulatives	base 10 blocks, play money, number cards, math games, paper and writing utensils

Understand and apply numerical operations and their relationships to one another.	Numerical Operation	What is the sum? What is the difference? How do you know?	Strand 1 Concept 2 PO1 addition, sums through 20, PO2 subtract, minuends through 20, PO3 addition & subtraction facts through 9s, PO4 add one & two digit numbers, PO5 subtract one & two digit numbers, PO6 select correct operation to solve, PO7 solve word problems, PO8 skip counting, PO9 fact families, PO10 commutative property of addition, PO11 addition & subtraction are inverse operations, PO12 apply math symbols, PO13 math terminology, PO14 add fractions, PO15 subtract fractions, PO16 add & subtract money	operations tests, students explanation and demonstration of math processes	demonstration, Hands-on and written practice	math manipulatives, operations worksheets, math games, number cards
Use estimation strategies reasonably and fluently.	Estimation	What are some of the ways to find a number that is more than another number? Or less than another number? Or between numbers?	Strand 1 Concept 3 PO1 use estimation to solve problems, PO2 estimate measurements	demonstration of problem solving, discussion, class participation	class discussion, demonstration, group activities, examples	manipulatives, writing utensils, paper
Understand and apply data collection, organization, and representation to analyze and sort data.	Data Analysis	What does this graph/chart show us? How could we make a graph to display this information? What are you wondering?	Strand 2 Concept 1 PO1 formulate questions for data collection, PO2 make a pictograph or tally chart, PO3 interpret pictographs, PO4 answer questions based on pictographs, PO5 formulate questions, PO6 solve problems using data displays	oral/written answers for graph questions, class participation	demonstration, asking questions, creating graphs/charts with shared writing	chart paper, markers, books with graphs and charts

Understand and demonstrate the systematic listing and counting of possible outcomes.	Discrete Math	How many outfits can you make using these shirts and pants? Which children can play on the play ground out of these 6 students?	Strand 2 Concept 3 PO1 determine all possible outcomes involving a combination of two sets of two items	class participation, discussion, and demonstration.	demonstration, class discussion, graphing of answers	thinkfinity.org Billy Bear, actual clothes, objects to arrange
Understand and apply vertex-edge graphs.	Vertex-edge Graphs	What is the least number of colors needed to color this without common edges having the same color?	Strand 2 Concept 4 PO1 color objects so common edges do not share the same color	demonstration of coloring sheet, class participation, discussion	demonstration, class discussion, examples	markers, coloring sheet,
Identify patterns and apply pattern recognition to reason mathematically.	Patterns	What is the repeating unit in this pattern? How does finding the pattern help?	Strand 3 Concept 1 PO1 communicate patterns orally, PO2 extend repetitive patterns, PO3 create patterns	demonstration of pattern and create pattern, class discussion	class discussion, demonstration, group activities, examples	math manipulatives, pattern sheets, writing utensils, paper
Represent and analyze mathematical situations and structures using algebraic representations.	Algebraic Representations	What rule is this? What plus/minus? equals the sum?	Strand 3 Concept 3 PO1 use variables, PO2 find missing sum or difference	math games (math war), class participation, math quiz	group activities, examples, mini lesson	writing utensils, paper, math manipulatives
Analyze change in a variable over time and in various contexts.	Analysis of Change		Strand 3 Concept 4 PO1 change over time, PO2 make predictions based on variable		group activities, examples, mini lesson	clock, thermometer, chart/paper, writing utensils, math manipulatives

Analyze the attributes and properties of 2 and 3 dimensional shapes and develop mathematical arguments about their relationships.	Geometric Properties	What shape is this? How could we describe this shape? Can you draw it?	Strand 4 Concept 1 PO1 describe 2D shapes, PO2 identify 2D shapes, PO3 terms of position & size, PO4 name shapes, PO5 draw shapes, PO6 line of symmetry	performance assessments, oral response, class participation	demonstration, class discussion, performance expectations	math manipulatives of various shapes, paper, writing utensils
Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.	Transformation of Shapes	How are plane shapes different from solid shapes? What makes a shape symmetrical?	Strand 4 Concept 2 PO1 slides	performance assessments, oral response, class participation	group activities, examples, mini lesson	tanagrams, writing utensils, paper, tanagram patterns
Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.	Measurement	What unit and tools measure the different attributes? Why are standards of measurement used?	Strand 4 Concept 4 PO1 compare objects by measurable attributes, PO2 select appropriate measure, PO3 tell time, PO4 yesterday, today, tomorrow, PO5 months of the year, PO6 days of the weeks, PO7 measure objects	performance assessments, oral response, class participation	demonstration, class discussion, hands-on practice measuring a variety of objects	measuring tools, objects to measure
Use reasoning to solve mathematical problems in contextual situations.	Algorithms & Algorithmic Thinking	How many apples does Johnny have after he gave Sally 2?	Strand 5 Concept 1 PO1 create problems to solve	class participation and discussion, creating word problem and solve.	class discussion, demonstration, group activities, examples	paper, writing utensils, math manipulatives

Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships.	Logic	Why did you group it that way? How did grouping the objects this way help to solve the problem?	Strand 5 Concept 2 PO1 quantitative components in word problems, PO2 provide rationale for classification	performance with creating word problems and solving, discussion about problem	demonstration, class discussion, group activities	paper, writing utensils, math manipulatives
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Visions Unlimited Academy
Curriculum Map
Math Grade Two

Visions Unlimited Academy
Curriculum Map
Math Grade Three

Visions Unlimited Academy
Math Curriculum Map
Grade Four

Grade Four						
Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources

<p>Understand and apply numbers, ways of representing numbers, the relationships among numbers, and different number systems.</p>	<p>Number Sense</p>	<p>How would you compare two unit fractions? Mixed numbers? How would you order the following fractions ____? Use an article, find examples of decimals and explain their use. Order the following decimals _____. Change decimals into fractions, then percents. What are the multiples of ____? Show the factor pairs of _____.</p>	<p>Strand 1 Concept 1 PO1 read whole numbers, PO2 identify whole numbers, PO3 write whole numbers, PO4 state place values, PO5 model place value, PO6 expanded notation, PO7 compare whole numbers, PO8 order three or more numbers, PO9 model mixed numbers, PO10 identify mixed numbers, PO11 use mixed numbers in context, PO12 compare fractions & mixed numbers w/ like denominators, PO13 order three or more fractions w/ like denominators, PO14 use decimals in context, PO15 compare decimals, PO16 order decimals, PO17 equivalency among fractions, decimals & percents, PO18 factors & factor pairs through 144, PO19 multiples through 144</p>	<p>Unit Tests, fact tests</p>	<p>Fact triangles, Mountain Math, Everyday Math journals, math games</p>	<p>Mountain Math grade 4, <i>Everyday Math</i>, <i>Teaching Elementary Math</i></p>
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<p>Understand and apply numerical operations and their relationships to one another.</p>	<p>Numerical Operation</p>	<p>Demonstrate steps in addition, subtraction, multiplication, & division. What does the $\frac{_}{_}$ symbol mean? What is the associative property & how do you use it? What signal words tell you to add, subtract, multiply, or divide? What are the rules when adding or subtracting fractions?</p>	<p>Strand 1 Concept 2 PO1 add whole numbers, PO2 subtract, PO3 select correct operation to solve, PO4 solve word problems, PO5 multiply multi-digit by two digit numbers, PO6 divide by one digit divisor, PO7 basic facts through 12s, PO8 associative property of multiplication, PO9 apply properties in computation, PO10 apply math symbols, PO11 math terminology, PO12 add or subtract fraction w/ like denominators, PO13 order of operations</p>	<p>Unit Tests, fact tests</p>	<p>Fact triangles, Mountain Math, Everyday Math journals, math games</p>	<p>Mountain Math grade 4, <i>Everyday Math</i>, <i>Teaching Elementary Math</i></p>
<p>Use estimation strategies reasonably and fluently.</p>	<p>Estimation</p>	<p>How do you estimate length, weight, calculations, distance, or mass?</p>	<p>Strand 1 Concept 3 PO1 use estimation to solve problems, PO2 use estimation for reasonableness of answers, PO3 estimate length & weight, PO4 estimate & measure distance</p>	<p>Unit Tests</p>	<p>Mountain Math, estimation jars, tubs, etc., math games, Everyday Math journals</p>	<p>Mountain Math grade 4, <i>Everyday Math</i>, <i>Teaching Elementary Math</i></p>

<p>Understand and apply data collection, organization, and representation to analyze and sort data.</p>	<p>Data Analysis</p>	<p>Interview classmates to collect data. Display the data using bar graphs, line graphs, or Venn diagram. What does the data tell us? What will happen next? Look at a graphic representation from a magazine or newspaper, what conclusions can you make?</p>	<p>Strand 2 Concept 1 PO1 formulate questions for data collection, PO2 construct data displays w/ titles & labels, PO3 interpret data displays, PO4 answer questions based on data displays, PO5 mode, PO6 formulate predictions, PO7 solve problems using data displays</p>	<p>Unit Tests</p>	<p>Connect with science experiments, math games</p>	<p><i>How to Use Graphs, Everyday Math</i></p>
<p>Understand and apply the basic concepts of probability.</p>	<p>Probability</p>	<p>Roll one die, what are the chances that an even number will be rolled? Toss a coin, what is the chance it will be heads? Use a spinner, what is the chance it will land on ____? What is your prediction for the outcome?</p>	<p>Strand 2 Concept 2 PO1 name possible outcomes, PO2 describe events using probability vocabulary, PO3 predict outcomes, PO4 record data from an experiment, PO5 compare predictions with outcomes, PO6 make further predictions based on results, PO7 compare results of two runs of same experiment</p>	<p>Unit Tests</p>	<p>math games</p>	<p><i>How to Use Graphs, Everyday Math</i></p>

Understand and demonstrate the systematic listing and counting of possible outcomes.	Discrete Math	Find all the possible combinations when one item is selected from each of two sets containing up to three objects. How many outfits can be made with three pants and two shirts?	Strand 2 Concept 3 PO1 determine all possible outcomes involving a combination of two sets of three items	Unit Tests	math games	<i>How to Use Graphs, Everyday Math</i>
Understand and apply vertex-edge graphs.	Vertex-edge Graphs	Color the following map with the least number of colors so that no common edges share the same color.	Strand 2 Concept 4 PO1 color objects so common edges do not share the same color	Unit Tests	math games	<i>How to Use Graphs, Everyday Math</i>
Identify patterns and apply pattern recognition to reason mathematically.	Patterns	Look at the following numbers/symbols, what comes next?	Strand 3 Concept 1 PO1 iterative patterns, PO2 extend iterative patterns, PO3 create iterative patterns	Unit Tests	pattern activities	<i>Everyday Math, Mathematics Unlimited</i>
Describe and model functions and their relationships.	Functions and Relation-ships	Describe the rule used in the problem.	Strand 3 Concept 2 PO1 describe rule in a simple function	Unit Tests	pattern activities	<i>Everyday Math, Mathematics Unlimited</i>
Represent and analyze mathematical situations and structures using algebraic representations.	Algebraic Representations	Which operation would you use to solve for X?	Strand 3 Concept 3 PO1 evaluate expressions by substituting, PO2 use variables, PO3 solve one step equations	Unit Tests	problem solving activities	<i>Everyday Math, Mathematics Unlimited</i>

Analyze change in a variable over time and in various contexts.	Analysis of Change	What is the variable? The control? Was there any change in the variable?	Strand 3 Concept 4 PO1 change in variables over time, PO2 make predictions based on variable	Unit Tests	problem solving activities	<i>Everyday Math, Mathematics Unlimited</i>
Analyze the attributes and properties of 2 and 3 dimensional shapes and develop mathematical arguments about their relationships.	Geometric Properties	What are the geometric properties of (shape)? How can we classify angles? What do these terms mean? What does congruent mean? Draw 2D shapes with lines of symmetry. Define line segment, ray, line, and angle.	Strand 4 Concept 1 PO1 properties of 2D shapes, PO2 identify 3D solids, PO3 points, lines, line segments, rays, & angles, PO4 classify angles, PO5 classify triangles, PO6 congruent shapes, PO7 similar shapes, PO8 line of symmetry	rubrics or checklists for projects, unit tests	drawing activities, building activities	<i>Everyday Math, Internet</i>
Apply spatial reasoning to create transformations and use symmetry to analyze situations.	Transformation of Shapes	What is a translation? Demonstrate a translation. Look at this picture, is it a tessellation? How do you know?	Strand 4 Concept 2 PO1 translations, PO2 identify a tessellation	rubrics or checklists for projects, unit tests, tessellations	drawing activities, building activities, tessellations	<i>Everyday Math, Internet</i>
Specify and describe spatial relationships using coordinate geometry and other representational systems.	Coordinate Geometry	What is a coordinate? Name the coordinates of point X on the first quadrant.	Strand 4 Concept 3 PO1 points in quadrant 1	rubrics or checklists for projects, unit tests		<i>Everyday Math, Internet</i>

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.	Measurement	How do you determine the perimeter or area of a rectangle? How many days, weeks, and hours, minutes did it take? How many yards are in ___ feet? (use other measures also) What is the difference between area & perimeter?	Strand 4 Concept 4 PO1 measure accurately, PO2 elapsed time, PO3 appropriate measurement tools, PO4 approximate measures, PO5 compare units of measure, PO6 equivalent measures, PO7 compare weights, PO8 perimeter, PO9 area, PO10 differentiate between perimeter and area	rubrics or checklists for projects, unit tests	model of their room,	<i>Everyday Math</i> , Internet
Use reasoning to solve mathematical problems in contextual situations.	Algorithms and algorithmic thinking	What steps would you use to solve this problem? What formula would you use to calculate area of a triangle?	Strand 5 Concept 1 PO1 discriminate necessary & unnecessary info in a word problem, PO2 algorithms for perimeter	Unit Tests	problem solving activities	graphic organizers
Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships.	Logic	Looking at the Venn, what conclusions can you draw?	Strand 5 Concept 2 PO1 draw conclusions from Venns, PO2 use if...then statements	Unit Tests	use Venn diagrams to solve problems	graphic organizers

Sixth Grade

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Understand and apply numbers, ways of representing numbers, the relationships among numbers, and different number systems.	Number Sense	Can the student: write fractions as ratios, compare and order fractions, improper fractions, and mixed numbers; state equivalency between and among fractions, decimals, and percents; identify GCF and LCM; state prime factorization using exponents?	Strand 1 Concept 1 PO1 fractions as ratios; PO2 compare fractions; PO3 order fractions; PO4 equivalent fractions; decimals, percents, PO5 GCF, PO6 LCM, PO7 prime factorization	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice, Mountain Math	Mountain Math Pre-algebra, Everyday Math grade 6
Understand and apply numerical operations and their relationships to one another.	Numerical Operation	Can the student: solve grade level appropriate problems, apply symbols for repeating decimals and ratios, simplify fractions; add, subtract, multiply, and divide fractions and mixed numbers; use order of operations to solve number sets?	Strand 1 Concept 2 PO1 select correct operation to solve problems, PO2 solve word problems, PO3 apply properties in computation, PO4 use symbols in decimals, ratios, exponents, PO5 use math vocabulary, PO6 simplify to lowest terms, PO7 add / subtract fractions w/ unlike denominators & regrouping, PO8 multiply fractions w/ models, PO9 multiply fractions, PO10 multiply mixed numbers, PO11	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice, Mountain Math	Mountain Math Pre-algebra, Everyday Math grade 6

			division is inverse, PO12 divide fractions, PO13 divide mixed numbers, PO14 solve problems with fractions and decimals, PO15 order of operations			
Use estimation strategies reasonably and fluently.	Estimation	Can the student: use estimation to solve problems, verify the reasonableness of a solution, and use a grid to estimate area and perimeter?	Strand 1 Concept 3 PO1 use estimation to solve problems, PO2 use estimation for reasonableness of answers, PO3 rounding, PO4 use a grid to estimate area and perimeter, PO5 verify estimates w/ calculator	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice, Mountain Math	Mountain Math Pre-algebra, Everyday Math grade 6
Understand and apply data collection, organization, and representation to analyze and sort data.	Data Analysis	Can the student: collect data; construct, interpret, and answer questions based on a variety of graphic representations; find mean, median, mode, range, and extreme values of a data set; identify and compare trends in data?	Strand 2 Concept 1 PO1 formulate questions for data collection, PO2 construct data displays w/ titles & labels, PO3 interpret data displays, PO4 answer questions based on data displays, PO5 mean, median, mode, range, extreme values, PO6 identify trends, PO7 compare trends, PO8 solve problems using data displays	Teacher Observation, quizzes, independent practice, graph projects, math journal	guided math groups, direct teaching, independent practice, Mountain Math, group graph projects	Mountain Math Pre-algebra, Everyday Math grade 6, histograms, Line plots, scatter plots, stem-and-leaf plots, tally charts, bar graphs, circle graphs

Understand and apply the basic concepts of probability.	Probability	Can the student: name possible outcomes for an event; state probabilities as decimals; predict outcomes, record data, and compare data to predictions and other experiments?	Strand 2 Concept 2 PO1 name possible outcomes, PO2 probabilities as decimals, PO3 predict outcomes, PO4 record data from an experiment, PO5 compare predictions with outcomes, PO6 make further predictions based on results, PO7 compare results of two runs of same experiment	Teacher Observation, quizzes, independent practice, math journal	direct teaching, independent practice, mountain math, probability experiments	Mountain Math Pre-algebra, Everyday Math grade 6
Understand and demonstrate the systematic listing and counting of possible outcomes.	Discrete Math	Can the student determine outcomes and arrangements using a systematic list, table, or tree diagram?	Strand 2 Concept 3 PO1 determine all possible outcomes involving a combination of three sets of three items, PO2 determine all possible arrangements given a set with four or fewer objects using a systematic list, table or tree diagram	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6
Understand and apply vertex-edge graphs.	Vertex-edge Graphs	Can the student find the shortest route on a map?	Strand 2 Concept 4 PO1 find the shortest route on a map from one site to another	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6
Identify patterns and apply pattern recognition to reason mathematically.	Patterns	Can the student: use symbols or numbers in a recursive pattern, extend and solve iterative patterns?	Strand 3 Concept 1 PO1 recursive patterns, PO2 extend an iterative patterns, PO3 solve iterative pattern problems	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6

Describe and model functions and their relationships.	Functions and Relationships	Can the student state the rule in T-charts and input/output models?	Strand 3 Concept 2 PO1 describe rule in a simple function	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6
Represent and analyze mathematical situations and structures using algebraic representations.	Algebraic Representations	Can the student: solve problems using variables, translate statements into algebraic expressions?	Strand 3 Concept 3 PO1 evaluate expressions substituting fractions, PO2 use variables, PO3 translate a phrase into an expression, PO4 translate a contextual phrase into an expression, PO5 solve one step equations	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6
Analyze change in a variable over time and in various contexts.	Analysis of Change	Can the student identify values on a given line graph or scatter plot?	Strand 3 Concept 4 PO1 identify values on a given line graph or scatter plot	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6
Analyze the attributes and properties of 2 and 3 dimensional shapes and develop mathematical arguments about their relationships.	Geometric Properties	Can the student classify 2 and 3 dimensional shapes by attributes, draw triangles, identify complementary and supplementary angles, identify diameter, radius and circumference; draw lines of symmetry?	Strand 4 Concept 1 PO1 classify polygons, PO2 draw geometric shapes w/ properties, PO3 classify 3D figures by shape, PO4 classify 3D figures by attributes, PO5 compare attributes of 2D & 3D figures, PO6 triangles, PO7 supplementary or complementary angles, PO8 circles, PO9 line of symmetry	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6, rulers, protractors, geoboards

Apply spatial reasoning to create transformations and use symmetry to analyze situations.	Transformation of Shapes	Can the student identify reflections and translations and create tessellations?	Strand 4 Concept 2 PO1 reflections & translations, PO2 create a tessellation	Teacher Observation, quizzes, independent practice, math journal, tessellation	guided math groups, direct teaching, independent practice	Everyday Math grade 6, copies of tessellations (MC Escher)
Specify and describe spatial relationships using coordinate geometry and other representational systems.	Coordinate Geometry	Can the student graph a polygon using ordered pairs and state missing coordinates?	Strand 4 Concept 3 PO1 graph a polygon using ordered pairs, PO2 state missing coordinate of a polygon	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6, coordinate graph stamp
Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.	Measurement	Can the student: use a protractor, convert measurements, find area and perimeter, and use a scale on a map?	Strand 4 Concept 4 PO1 use appropriate unit of measure in situations, PO2 use correct measurement tool, PO3 linear measurements, PO4 angles using protractor, PO5 convert units, PO6 perimeter, PO7 area, PO8 distinguish between area & perimeter, PO9 solve problems for area, PO10 identify shapes having same perimeter or area, PO11 scale drawings	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, Mountain Math	Mountain Math Pre-algebra, Everyday Math grade 6, maps, protractors, rulers
Use reasoning to solve mathematical problems in contextual situations.	Algorithms and algorithmic thinking	Can the student: determine necessary from unnecessary information in a problem, compute with decimals?	Strand 5 Concept 1 PO1 discriminate necessary & unnecessary info in a word problem, PO2 compute with decimals	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice, Mountain Math	Mountain Math Pre-algebra, Everyday Math grade 6

Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships.	Logic	Can the student solve logic problems?	Strand 5 Concept 2 PO1 solve simple logic problems	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Everyday Math grade 6
Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements	Measurement	Can the student: use a protractor, convert measurements; find area, perimeter, circumference, and volume; use a scale on a map?	Strand 4 Concept 4 PO1-8	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Use reasoning to solve mathematical problems in contextual situations	Algorithms and algorithmic thinking	Can the student: determine necessary from unnecessary information in a problem, compute with fractions?	Strand 5 Concept 1 PO1-2	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships	Logic	Can the student solve logic problems using multiple variables?	Strand 5 Concept 2 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra

Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships	Logic	Can the student: solve logic problems; use if...then statements; use a flow chart; verify the Pythagorean Theorem using area dissection?	Strand 5 Concept 2 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Algebra, AGS Publishing; Mountain Math Algebra
Seventh Grade						
Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	resources
Understand and apply numbers, ways of representing numbers, the relationships among numbers, and different number systems	Number Sense	Can the student: state fractions as repeating or terminating decimals; find GCF and LCM; locate and order integers; classify numbers?	Strand 1 Concept 1 PO1-8	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Understand and apply numerical operations and their relationships to one another	Numerical Operations	Can the student: solve grade level appropriate problems; add, subtract, multiply, and divide integers; calculate percent of a number; use order of operations to solve number sets?	Strand 1 Concept 2 PO1-12	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra

Use estimation strategies reasonably and fluently	Estimation	Can the student: use estimation to solve problems, verify the reasonableness of a solution, estimate area, angle measures, and circumference?	Strand 1 Concept 3 PO1-6	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Understand and apply data collection, organization, and representation to analyze and sort data	Data Analysis	Can the student: collect data; construct, interpret, and answer questions based on a variety of graphic representations; find mean, median, mode, range, and extreme values of a data set; identify and compare trends in data?	Strand 2 Concept 1 PO1-9	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra histograms. Line plots, scatter plots, stem-and-leaf plots, tally charts, bar graphs, circle graphs
Understand and apply the basic concepts of probability	Probability	Can the student: name possible outcomes for an event; determine fairness; predict outcomes, record data, and compare data to predictions and other experiments?	Strand 2 Concept 2 PO1-7	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice, probability experiments	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra

Understand and demonstrate the systematic listing and counting of possible outcomes	Discrete Mathematics	Can the student determine outcomes and arrangements using a systematic list, table, or tree diagram?	Strand 2 Concept 3 PO1-2	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Understand and apply vertex-edge graphs	Vertex-Edge Graphs	Can the student find the shortest route on a map?	Strand 2 Concept 4 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Identify patterns and apply pattern recognition to reason mathematically	Patterns	Can the student: use symbols or numbers to extend and solve recursive patterns?	Strand 3 Concept 1 PO1-3	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Describe and model functions and their relationships	Functions and Relationships	Can the student state the rule in T-charts and input / output models?	Strand 3 Concept 2 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Represent and analyze mathematical situations and structures using algebraic representations	Algebraic Representations	Can the student: solve problems using variables, translate statements into algebraic expressions?	Strand 3 Concept 3 PO1-5	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra

Analyze change in a variable over time and in various contexts	Analysis of change	Can the student see change in linear situations?	Strand 3 Concept 4 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Analyze the attributes and properties of 2 and 3 dimensional shapes and develop mathematical arguments about their relationships	Geometric Properties	Can the student: classify 3 dimensional shapes by attributes; draw polygons, identify angles created by a transversal, identify arcs and chords; identify triangle inequality theorem; see congruency?	Strand 4 Concept 1 PO1-10	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Apply spatial reasoning to create transformations and use symmetry to analyze situations	Transformation of shapes	Can the student identify simple rotations, translations, and reflections?	Strand 4 Concept 2 PO1-2	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Specify and describe spatial relationships using coordinate geometry and other representational systems	Coordinate Geometry	Can the student use ordered pairs to graph points in any quadrant?	Strand 4 Concept 3 PO1-2	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements	Measurement	Can the student: use a protractor, convert measurements; find area, perimeter, circumference, and volume; use a scale on a map?	Strand 4 Concept 4 PO1-8	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Use reasoning to solve mathematical problems in contextual situations	Algorithms and algorithmic thinking	Can the student: determine necessary from unnecessary information in a problem, compute with fractions?	Strand 5 Concept 1 PO1-2	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships	Logic	Can the student solve logic problems using multiple variables?	Strand 5 Concept 2 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Mountain Math Pre-algebra
Use reasoning to solve mathematical problems in contextual situations	Algorithms and algorithmic thinking	Can the student: use a proportion to solve problems?	Strand 5 Concept 1 PO1-2	Teacher Observation, quizzes, independent practice, math journal, mountain math	guided math groups, direct teaching, independent practice, mountain math	Basic Math Skills, AGS Publishing; Algebra, AGS Publishing; Mountain Math Algebra

Evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions and recognize their relationships	Logic	Can the student: solve logic problems; use if...then statements; use a flow chart; verify the Pythagorean Theorem using area dissection?	Strand 5 Concept 2 PO1	Teacher Observation, quizzes, independent practice, math journal	guided math groups, direct teaching, independent practice	Basic Math Skills, AGS Publishing; Algebra, AGS Publishing; Mountain Math Algebra
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