

Math Continuum

Preconventional <i>Ages 3-5</i>	Emergent <i>Ages 4-6</i>	Developing <i>Ages 5-7</i>	Beginning <i>Ages 6-8</i>	Expanding <i>Ages 7-9</i>
<p>Number Sense ~ Recognizes some numerals to ten ~ Explores writing numerals</p> <p>Algebra ~ Explores patterns in familiar surroundings ~ Begins to replicate patterns with objects</p> <p>Geometry ~ Recognizes simple shapes ~ Begins to draw simple shapes</p> <p>Measurement ~ Explores using non-standard units to measure</p> <p>Data Analysis ~ Collects and counts objects</p>	<p>Number Sense ~ Explores one to one correspondence ~ Recognizes numerals to ten and is able to write them with guidance ~ Uses words to describe quantity and their relationships ~ Explores mathematical symbols and their meanings ~ Understands some parts to the whole</p> <p>Algebra ~ Can create a repeating pattern with manipulatives ~ Explores the creation of sets using objects</p> <p>Geometry ~ Identifies basic shapes ~ Sorts objects by a single attribute ~ Beginning to describe relative locations of objects</p> <p>Measurement ~ Explores using non-standard units to measure length, width and height ~ Uses words to describe speed, temperature and size ~ Can recognize some coins ~ Begins to understand the concept of time relative to own activities</p> <p>Data Analysis and Probability ~ Predicts, collects and counts objects and begins to explore ways to record that information ~ Sorts information and is able to graph it with guidance</p>	<p>Number Sense ~ Demonstrates one-to-one correspondence ~ Recognizes and writes numerals 1-10 ~ Counts to 29 by 1's ~ Counts backwards from 10 ~ Understands basic meanings of addition and subtraction ~ Knows number combinations on a concrete level</p> <p>Algebra ~ Identifies and extends patterns ~ Skip counts by 5's and 10's to 100</p> <p>Geometry ~ Knows and reproduces basic shapes ~ Identifies and builds symmetry</p> <p>Measurement ~ Understands procedures to measure length and weight with non-standard units ~ Tells hour on an analog clock ~ Uses monthly calendar as a tool ~ Knows the value of a penny, nickel, and dime; recognizes quarter</p> <p>Data Analysis and Probability ~ Sorts an classifies according to specific attributes ~ Performs simple data collection ~ Interprets and creates basic graphs</p>	<p>Number and Operations ~ Recognizes and writes numbers 1-100 ~ Delves into fractions ~ Cements addition and subtraction fact families to 12 ~ Understands the effects of adding and subtracting whole numbers ~ Develops and uses strategies for whole number computations with a focus on addition and subtraction ~ Skip counts by 2's, 5's and 10's ~ Compares and orders one to two digit numbers</p> <p>Algebra ~ Uses concrete, pictorial and verbal representation to develop an understanding of invented and conventional symbolic notations ~ Analyzes how both repeating and growing patterns are generated ~ Sorts and classifies manipulatives</p> <p>Geometry ~ Describes attributes and parts of two and three-dimensional shapes ~ Recognizes and creates shapes that have symmetry ~ Investigates money</p> <p>Measurement ~ Records date using calendars and graphs ~ Strengthens the skills of measurement including weight, distance and time ~ Selects appropriate unit and tool for the attribute being measured</p> <p>Data Analysis and Probability ~ Represents data using concrete objects and information</p> <p>Problem Solving ~ Recognizes a variety of problem solving strategies and learns when to apply them ~ Investigates mental arithmetic and logical thinking</p>	<p>Number and Operations ~ Knows addition and subtraction facts through 20 ~ Understands adding and subtraction of two and three digit numbers with regrouping ~ Understands concept of multiplication including facts through five time five ~ Has beginning fraction skills</p> <p>Algebra ~ Can successfully model situations that involve addition and subtraction of whole numbers using objects, pictures and symbols ~ Can observe and replicate patterns ~ Can create and interpret graphs</p> <p>Geometry ~ Able to recognize geometric shapes and structures in the environment ~ Understands symmetry ~ Investigates and predicts the results of putting together and taking apart of two and three dimensional shapes</p>
Bridging <i>Ages 8-10</i>	Fluent <i>Ages 9-11</i>	Proficient <i>Ages 11-13</i>	Independent	
<p>Numbers and Operations ~ Knows place value to ten thousands ~ Developing understanding to decimal place value to hundredths ~ Developing understanding of math facts through easy multiplication and division ~ Knows addition and subtraction with regrouping using four-digit numbers ~ Developing ability to identify fractional parts, equivalents and solve number stories</p> <p>Algebra ~ Developing the ability to find patterns on number grids and solve "What's My Rule?" tables and Frames and Arrows charts</p> <p>Geometry ~ Can identify symmetry, right angles, 2-D and 3-D shapes ~ Beginning to identify, draw and label segments, lines and rays ~ Beginning to identify parallel and intersecting lines ~ Beginning to draw angles</p> <p>Measurement ~ Can tell time to the nearest minute ~ Knows how to measure to the nearest ¼ inch and whole centimeter ~ Beginning to find area and perimeter volume</p> <p>Data Analysis and Probability ~ Beginning to find the mean and median of a set ~ Developing ability to predict outcomes and discuss probability ~ Able to collect and organize data</p> <p>Problem Solving ~ Developing ability to learn and practice specific problem solving strategies</p>	<p>Numbers and Operations ~ Understands place value of whole numbers to billions and decimals to thousandths ~ Able to add, subtract, multiply and divide whole numbers ~ Able to add and subtract decimal numbers ~ Identifies the relationship between decimal, fraction and percentage</p> <p>Algebra ~ Recognizes and predicts patterns ~ Solves simple equations with unknowns</p> <p>Geometry ~ Identifies polygons and circles ~ Identifies simple 3-D shapes ~ Uses coordinates ~ Identifies parallel and perpendicular lines ~ Recognizes acute, obtuse and right angles ~ Measures angles to the nearest degree with a protractor ~ Constructs circles and some polygons using a compass</p> <p>Measurement ~ Calculates area, perimeter and volume of simple shapes ~ Measures (using correct units) money, length, area, volume, weight and temperature (metric and standard)</p> <p>Data Analysis and Probability ~ Creates and understands graphs, tables and charts ~ Recognizes probabilities and predicts outlines ~ Identifies and calculates averages ~ Identifies minimum, maximum and range</p> <p>Problem Solving ~ Organizes and manipulates relevant data ~ Chooses appropriate strategies to solve problems</p>	<p>Numbers and Operations ~ Understands place value ~ Demonstrates an understanding of multiplying and dividing fractions, decimals, percents and landmark statistics ~ Able to add, subtract, multiply and divide fractions and decimals ~ Able to multiply and divide large numbers</p> <p>Algebra ~ Can search to function rules</p> <p>Geometry ~ Identifies properties of 2-D and 3-D figures, polygons and angles ~ Understands perpendicular lines and congruencies ~ Creates examples of tessellations ~ Recognizes geometric shapes</p> <p>Measurement ~ Understands basic units of length, weight, volume and temperature ~ Estimates and makes precise measurements in standard and metric units using protractors and rulers</p> <p>Data Analysis and Probability ~ Predicts outcome ~ Understands the concept of probability ~ Collects and organizes data ~ Learns how to interpret statistics from graphs, charts and tables</p> <p>Problem Solving ~ Solves word problems using a variety of operations ~ Applies specific problem solving strategies</p>	<p>Number and Operations ~ Explains numbers by comparing and sequencing whole numbers, fractions, percents, exponents and negative numbers (real numbers) ~ Performs operations on real numbers</p> <p>Algebra ~ Finds and is able to write functional rules for linear and simple exponential relationships and patterns</p> <p>Geometry ~ Is able to understand and identify properties and relationships of plane geometry ~ Locates and graphs ordered pairs of positive and negative numbers on the x-y axis</p> <p>Measurement ~ Compares different measurable attributes of polygons and 3-D shapes (height, length, weight, capacity, area, volume and perimeter)</p> <p>Data Analysis and Probability ~ Questions different interpretations of the same data ~ Is able to consider the problem, collect and record data, describe and interpret data and develop hypotheses based on the data</p> <p>Problem Solving ~ Applies associative and commutative laws to problem solve and check work</p>	