

## Basic ELL Math (9610)

**Description** The basic math course is the first in a series of three ELL math courses that move students from basic arithmetic into algebra, geometry, measurement and probability and statistics. The basic math course is an entry-level math course for ELL students who have a very limited math background. The course begins with basic operations of whole numbers. Students progress throughout the year working on fractions, decimals, percents, and integers, as well as measurement. Basic ideas in Algebra, Geometry, and Probability and Statistics are introduced. Also, skill development in problem solving is presented. Key vocabulary terms in math are stressed in all of the ELL math courses.

**Credits** 1

**Prerequisites** None.

**Textbooks/Resources** Selection process in progress. Final materials selected in Spring 2005 per AASD curriculum cycle.

**Required Assessments** Standards based assessments to be developed 04-05 school year.

**Board Approved** May 2004

**Revised**

### AASD Mathematics Goals for K-12 Students

- *Become mathematical problem solvers.*
- *Learn to reason mathematically.*
- *Learn to communicate mathematically.*
- *Make mathematical connections.*
- *Become proficient in basic computational skills.*
- *Learn to use technology appropriately.*

## AASD Mathematics Standards for Grades 9-12 Students

<u>Content Strand</u>	<u>Content Standard</u>
I. Mathematical Processes	<ul style="list-style-type: none"> <li>A. Use of mathematical knowledge, skills and strategies to solve mathematical, real-world and non-routine problems: reasoning</li> <li>B. Use of mathematical knowledge, skills and strategies to solve mathematical, real-world and non-routine problems: oral and written communication</li> <li>C. Use of mathematical knowledge, skills and strategies to solve mathematical, real-world and non-routine problems: use of appropriate technology</li> </ul>
II. Number Operations & Relationships	<ul style="list-style-type: none"> <li>A. Use numbers effectively for counting</li> <li>B. Use numbers effectively for measuring</li> <li>C. Use numbers effectively for estimating</li> <li>D. Use numbers effectively for problem solving</li> </ul>
III. Geometry	<ul style="list-style-type: none"> <li>A. Use geometric concepts to interpret, represent and solve problems</li> <li>B. Use geometric relationships to interpret, represent and solve problems</li> <li>C. Use geometric procedures to interpret, represent and solve problems</li> </ul>
IV. Measurement	<ul style="list-style-type: none"> <li>A. Select and use appropriate tools and techniques to measure to a specified degree of accuracy</li> <li>B. Use measurements in problem-solving situations</li> </ul>
V. Statistics & Probability	<ul style="list-style-type: none"> <li>A. Use data collection and analysis</li> <li>B. Use statistics in problem-solving situations</li> <li>C. Use probability in problem-solving situations</li> </ul>
VI Algebraic Relationships	<ul style="list-style-type: none"> <li>A. Discover, describe and generalize simple and complex patterns and relationships</li> <li>B. Use algebraic techniques to define and describe real-world problems to determine and justify appropriate solutions</li> </ul>

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p>1. <b>Use properties and relations with expressions involving whole numbers including mean, median, and mode.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Performs arithmetic operations on whole numbers.</li> <li>b. Recognize and writes English vocabulary of whole numbers and their place values.</li> <li>c. Applies rules of exponents on whole numbers.</li> <li>d. Performs appropriate order of operations on whole numbers.</li> <li>e. Uses <math>&lt;</math>, <math>&gt;</math>, <math>=</math> to compare whole numbers.</li> <li>f. Uses rounding to estimate at different place values.</li> <li>g. Assesses mean, median, and mode of a list of whole numbers.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Number Operations and Relationships, Statistics and Probability</p>		
<p>2. <b>Use properties and relations with expressions involving fractions and mixed numbers.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Performs arithmetic operations on fractions and mixed numbers.</li> <li>b. Understands the concept of fractions including numerator and denominator.</li> <li>c. Uses <math>&lt;</math>, <math>&gt;</math>, <math>=</math> to compare fractions and mixed numbers.</li> <li>d. Recognizes and exchanges mixed numbers and improper fractions.</li> <li>e. Expresses fractions in lowest terms.</li> <li>f. Identifies factors of whole numbers.</li> <li>g. Finds the LCM to write equivalent fractions.</li> <li>h. Writes ratios and rates by using equivalent fractions.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Number Operations and Relationships</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p>3. <b>Use properties and relations with expressions involving decimals.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Performs arithmetic operations on decimals.</li> <li>b. Recognize and writes English vocabulary of decimals and their place values.</li> <li>c. Uses <math>&lt;</math>, <math>&gt;</math>, <math>=</math> to compare decimals.</li> <li>d. Uses rounding to estimate at different place values.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Number Operations and Relationships</p>		
<p>4. <b>Calculate and solve problems involving percents.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Understands the concept of percent.</li> <li>b. Recognizes and compares percents as fractions and decimals.</li> <li>c. Uses appropriate methods to solve problems involving percents.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Number Operations and Relationships</p>		
<p>5. <b>Use properties and relations with expressions involving integers.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Performs arithmetical operations on integers.</li> <li>b. Uses <math>&lt;</math>, <math>&gt;</math>, <math>=</math>, and a number line to compare integers.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Number Operations and Relationships</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p>6. <b>Determine measurements directly with precision and make comparisons within the metric and U.S. Customary systems.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Finds lengths to the nearest mm or 16<sup>th</sup> of an inch.</li> <li>b. Finds angles to the nearest degree.</li> <li>c. Weighs mass to the nearest 0.1 g or ounce.</li> <li>d. Finds liquid capacity to the nearest ml.</li> <li>e. Converts units of measure within a system.</li> <li>f. Compares approximate measures of length, weight, liquid capacity, and temperature between metric and U.S. Customary.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Measurement</p>		
<p>7. <b>Solves linear equations in one variable.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Solves equations involving addition or subtraction.</li> <li>b. Solves equations involving multiplication or division.</li> <li>c. Solves equations that require two-steps using addition, subtraction, multiplication, or division.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Algebraic Relations</p>		
<p>8. <b>Identify and describe attributes of two-dimensional shapes and figures and find their measures.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Identifies and classifies two-dimensional shapes by their attributes including sides, angles, vertices, and congruent parts.</li> <li>b. Understand the attributes of similar and congruent figures.</li> <li>c. Find the area and perimeter of simple two-dimensional shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Measurement, Geometry</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p><b>9. Displays data different ways to show relationships of samples in one and two variables.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Organizes data using frequency distributions.</li> <li>b. Creates line and bar graphs from data.</li> <li>c. Plots ordered pairs of data appropriately on a coordinate plane.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Statistics and Probability</p>		
<p><b>10. Use multiple problem solving techniques to solve problems in context.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. Uses “critical” reading techniques to find important information in a problem.</li> <li>b. Develops strategies to determine what a problem is asking.</li> <li>c. Develops techniques to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit assessment</li> </ul>
<p><b>Above Objective aligned with AASD Mathematics standards:</b> Number Operations and Relationships, Measurement</p>		

**Resources and learning activities that address course objectives:**