

Lake Washington School District  
Teaching and Learning Framework

# Sixth Grade

# Mathematics

Power Standards | August 2007

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## Number Sense

### Power Standards

1. Understand the relative values of integers and non-negative rational numbers by:

### Evidence of Learning

Identifying equivalence between non-negative integers (whole numbers), fractions, percents, and decimals.

Comparing different representations of non-negative rational numbers (fractions, percents and decimals) by implementing strategies (e.g., like denominators, changing to the same form) (1.1.2)

2. Understand the meaning of multiplication and division on non-negative rational numbers by:

Explaining the meaning of multiplying and dividing non-negative fractions and decimals using words or visual or physical models. (1.1.5)

Explaining why multiplication of fractions can be done by multiplying unlike denominators while addition of fractions requires finding common denominators. (1.1.5)

3. Understand and apply strategies and tools to complete tasks involving addition and subtraction on non-negative rational numbers by:

Applying strategies and tools, justifying strategies in problem-solving situations. (1.1.7)

## Measurement

### Power Standards

1. Understand the concepts of volume and extend the concept of area to surface area of rectangular prisms by:

### Evidence of Learning

Representing the volume for given rectangular prisms using pictures or models. (1.2.1)

Explaining and giving examples of how area and surface area are related. (1.2.1)

Describing and comparing the use of area and volume. (1.2.1)

2. Understand and apply systematic procedures to measure and compute volume and capacity for solid shapes by:

Using cubes and layers to develop formulas. (1.2.4)

## Geometric Sense

### Power Standards

1. Understand the characteristics of circles and rectangular prisms by:

### Evidence of Learning

Describing the relationship between the diameter and circumference and the radius and area of a circle. (1.3.1)

## Geometric Sense (continued)

Power Standards	Evidence of Learning
2. Apply understanding of angles and polygons by:	<p>Creating a three-dimensional shape given its net or draw the net of a three-dimensional shape. (1.3.2)</p> <p>Find the missing measure of an angle using the properties of parallel lines, perpendicular lines, vertical and corresponding angles. (1.3.2)</p> <p>Find the missing angle given all but one of the angles of a polygon. (1.3.2)</p>
3. Apply understanding of rotations (turns) to two-dimensional figures by:	<p>Applying rotations (turns) of <math>90^\circ</math> or <math>180^\circ</math> to a simple, two-dimensional figure. (1.3.4)</p> <p>Determining whether an object has been translated or slide rotated on a coordinate grid. (1.3.4)</p>

## Probability and Statistics

Power Standards	Evidence of Learning
1. Understand probability as a ratio between and including 0 and 1 by:	<p>Determining whether a real life event has zero probability, 50% probability or 100% probability. (1.4.1)</p> <p>Expressing probabilities as fractions or decimals between 0 and 1 and percents between 0 and 100. (1.4.1)</p>
2. Understand various ways to determine outcomes of events or situations by:	<p>Calculating probability for an event. (1.4.2)</p> <p>Gathering data from experiments.</p>
3. Analyze how data collection methods affect the data collected by:	<p>Evaluating how a question may affect the data or how data is collected. (1.4.3)</p>
4. Apply measures of central tendency to interpret a set of data by:	<p>Determining when and why it is appropriate to use mean, median, mode. (1.4.4)</p>
5. Understand how to organize, display, and interpret data from single line graphs by:	<p>Making inferences based on a set of data.</p> <p>Using data from a table, graph, or chart to support an interpretation. (1.4.5)</p>

## Algebraic Sense

Power Standards	Evidence of Learning
1. Apply rules for number patterns based on two arithmetic operations by:	<p>Creating, explaining, or extending number patterns involving two related sets of numbers and two operations (addition, subtraction, multiplication and division).</p> <p>Using rules for generating number patterns (e.g., Fibonacci sequence, bouncing ball) to model real-life situations. (1.5.1)</p>

## Algebraic Sense (continued)

### Power Standards

2. Apply understanding of equalities and inequalities to interpret and represent relationships between quantities by:

### Evidence of Learning

Expressing relationships between quantities (decimals, percents, fractions, and integers) using  $\neq$ ,  $\leq$ ,  $\geq$ . **(1.5.3)**

Representing and evaluating algebraic expressions and equations involving a single variable. **(1.5.5)**