

6th Grade Math  
West Aurora School District  
State Goal 6 – Number Sense

**STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.**

**Concepts: Need to Know About Number Sense**

- Multiple Representations
  - Fractions
  - Decimals
  - Percents Less than 100%
  - Mixed Numbers
    - Halves
    - Quarters
    - Fifths
    - Tenths
- Number Lines
  - Fractions
  - Decimals
  - Mixed Numbers
    - Halves
    - Quarters
    - Fifths
    - Tenths
- Problems Involving Descriptions of Numbers
  - Characteristics
    - Odd/Even
    - Factors/Multiples
    - Squares
    - Primes
  - Relationships
    - Greater than/Less than
- Problems and Number Sentences
  - Decimals
    - Addition
    - Subtraction
    - Multiplication
- Whole Numbers, Fractions, & Decimals
  - Given Situations
  - Accuracy of Results
- Problems Involving Proportions Relationships
  - Unit Pricing

**Skills:**      **Be Able To Do**

- **Recognize** (Multiple Representations)
- **Translate** (Multiple Representations)
- **Apply** (Multiple Representations)
- **Identify** (On a Number Line)
- **Locate** (On a Number Line)
- **Solve** (Problems Involving Descriptions of Numbers, Number Sentences, and Problems Involving Proportional Relationships)
- **Estimate** (Whole Numbers, Fractions, and Decimals)
- **Analyze** (Whole Numbers, Fractions, and Decimals)

**Topics or Contexts:** Be sure to review whole number problems and number sentences as well as decimal ones.

Estimating includes rounding.

### **Big Ideas**

1. Decimals, fractions, and percents are like three Latin languages; they all translate.
2. Numbers have many names/labels and relationships.

### **Essential Questions**

1. When/how do I translate between decimals, fractions, and percents?
2. How are various numbers labeled and related to other numbers?

6<sup>th</sup> Grade Math  
West Aurora School District  
State Goal 7 – Measurement

**STATE GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.**

**Concepts: Need to Know About Measurement**

- Perimeter and Area Problems
  - Triangle
  - Parallelogram
  - Irregular Shapes
- Unit Conversions (In Same System; Include Compound Units)
  - Time
  - Length
  - Weight/Mass

**Skills: Be Able To Do**

- **Solve** (Unit Conversions Including Compound Units, Perimeter and Area Problems)
- **Use** (Diagrams, Models, Grids, and Formulas for Perimeter and Area Problems)
- **Measure** (Perimeter and Area Problems)
- **Sketch** (Perimeter and Area Problems)

**Topics or Contexts:** Compound units are for example 5 ft 4 in.

### **Big Ideas**

1. All shapes are qualified by perimeter, area, and shape.
2. In real-life, it is important to identify types of appropriate measurements and systems to use.

### **Essential Questions**

1. How do I differentiate/analyze shapes using perimeter, area, and shape?
2. What is the appropriate type and system to use in a given situation?

6<sup>th</sup> Grade Math  
West Aurora School District  
State Goal 8 – Algebra

**STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.**

**Concepts: Need to Know About Algebra**

- Sequence
  - Missing Term
  - Rules that Generate the Terms of a Given Sequence
- Word Problems Involving Unknown Quantities

**Skills: Be Able To Do**

- **Determine** (Sequence)
- **Extend** (Sequence)
- **Construct** (Sequence)
- **Identify** (Sequence)
- **Solve** (Word Problems Involving Unknown Quantities)

**Topics or Contexts:** Make sure students can write an expression or sentence using variables.

Also students need to be able to evaluate algebraic expressions.

### **Big Ideas**

1. In real-life, algebra solves problems involving unknown quantities.

### **Essential Questions**

1. How do I solve real life-problems with unknown quantities using algebra?

6<sup>th</sup> Grade Math  
West Aurora School District  
State Goal 9 – Geometry

**STATE GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.**

**Concepts: Need to Know About Geometry**

- Similar Figures
  - Relationships Between Corresponding Parts

**Skills: Be Able To Do**

- **Determine** (Similar Figures)
- **Identify** (Similar Figures)

**Topics or Contexts:** Review characteristics of two and three dimensional shapes.

**Big Ideas**

1. Geometrical figures and relationships correlate with every object in every-day life.

**Essential Questions**

1. How can I describe, measure, and quantify objects in every-day life using geometry?

6<sup>th</sup> Grade Math  
West Aurora School District  
State Goal 10 – Data Analysis, Statistics, and Probability

**STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.**

**Concepts: Need to Know About Data Analysis, Statistics, and Probability**

- Graphs from a Given Set of Data (Common Referents)
  - Bar
  - Chart/Table
  - Line Graph
  - Circle Graph
- Probability (Simple Event)
  - Fraction
  - Decimal
  - Percent

**Skills: Be able to Do**

- **Create** (Graphs from a Given Set of Data)
- **Solve** (Probability)
- **Represent** (Probability as Fraction, Decimal, and Percent)

**Topics or Contexts:** Review reading, interpreting, and making predictions from data represented in a graph.

### **Big Ideas**

1. In real-life, there are various ways to display and understand data.
2. The probability of the favorable outcome of a real-life event can be represented by fractions, decimals, or percents.

### **Essential Questions**

1. How can I display and read/understand data from various types of graphs?
2. How can I represent the probability of a real-life event using fractions, decimals, or percents?