

**Kindergarten 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

- “How Many” in Sets of Objects
- Number Words and Numerals to the Quantities they Represent
- Problems with Manipulatives
 - Two or More Sets

Skills: Be able to Do

- **Recognize** (“How Many”)
- **Connect** (Number Words and Numerals to the Quantities they Represent)
- **Compare** (Two or More Sets)
- **Solve** (Problems)

Topics or Contexts: See attached document listing specific Saxon lessons that relate to each of the above concepts. Refer to the Kindergarten math binder by lesson for additional activities and/or games.

**Kindergarten Math
West Aurora School District
State Goal 7 – Measurement**

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

Concepts: Need to Know About Measurement

- Objects with Measurable Attributes

Skills: Be able to Do

- **Compare** (Objects According to Measurable Attributes)
- **Order** (Objects According to Measurable Attributes)

**Kindergarten 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

- Set Attributes
 - Common
 - Uncommon
- Pattern Problems
 - Sequences of Sounds, Motions, Shapes
 - Simple Numeric Patterns

Skills: Be Able To Do

- **Describe** (Set Attributes, Patterns)
- **Recognize** (Patterns)
- **Extend** (Patterns)
- **Translate** (Patterns)

**Kindergarten 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

- Two- and Three-Dimensional Shapes

Skills: Be Able To Do

- **Identify** (Two- and Three-Dimensional Shapes)

1st 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

- Counting and Skip Counting
 - 2's (from Zero)
 - 5's (from Zero)
 - 10's (from Zero)
- Concept of Odd and Even
- Word Problems & Number Sentences
 - One –Step
- Number Sentences and Word Problems
 - Effects of Adding Whole Numbers
 - Effects of Subtracting Whole Numbers
 - Appropriate Mathematical Notation
 - Appropriate Vocabulary
- Whole Number Computations
 - Addition
 - Subtraction
 - Strategies

Skills: Be Able to Do

- Demonstrate Understanding (Counting, Skip Counting, Odd/Even, Appropriate Notation and Vocabulary)
- Demonstrate Using Manipulatives (Odd/Even)
- Solve (Using Concrete Materials for Addition & Subtraction)
- Construct (Number Sentences and Word Problems)
- Match (Number Sentences and Word Problems)
- Demonstrate (Number Sentences and Word Problems)
- Describe (Number Sentences and Word Problems)
- Develop (Whole Number Computations)
- Use (Whole Number Computations)

1st 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

- Chronological Events
 - Calendars
 - Timelines
 - Seasons
- Units of Money and their Value
- Like Sets of Coins

Skills: Be Able to Do

- Explore (Chronological Event)
- Describe (Chronological Event)
- Identify (Units of Money and their Value)
- Count (Like Sets of Coins)

1st 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

- Pattern Problems
 - Sequence of Sounds, Motions, Shapes
 - Simple Numeric Patterns
- Number Sentences
 - Missing Addend

Skills: Be Able to Do

- Recognize (Pattern Problems)
- Describe (Pattern Problems)
- Extend (Numeric Patterns)
- Translate (Pattern Problems)
- Solve (Number Sentences)

1st 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

- Objects with the Same Shape

Skills: Be Able to Do

- Identify (Objects with the Same Shape)

1st 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

- Simple Data Displays
 - Pictograph
 - Tallies
 - Tables
 - Bar Graphs

Skills: Be Able to Do

- Organize (Simple Data Displays)
- Describe (Simple Data Displays)
- Label (Simple Data Displays)

2nd 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

- Place Value
- Numeric Relationships
- Word Problems and Number Sentences
 - Two-Step
- Addition and Subtraction Basic Facts
- Unit Fractions

Skills: Be Able to Do

- Extend Understanding (Place Value)
- Use (Multiple Models for Place Value, Comparison Notation for Numeric Relationships, Manipulatives to Compare Unit Fractions)
- Describe (Numeric Relationships)
- Solve (Word Problems and Number Sentences, Unit Fractions)
- Demonstrate Fluency (Addition and Subtraction Basic Facts)
- Compare (Unit Fractions)

2nd Grade Math
West Aurora School District 129
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

- Objects
- Time – Analog Clock
- Unit Relationships
 - Time
 - Length
 - Money
- Sets of Unlike Coins
- Relationships
 - Elapsed Time
 - Standard Measurements
 - Length
 - Weight
 - Capacity
 - Amount of Money for Purchases

Skills: Be Able to Do

- Measure– Standard Units (Objects)
- Tell (Time)
- Describe (Unit Relationships)
- Count (Sets of Unlike Coins)
- Compare (Sets of Unlike Coins)
- Order (Sets of Unlike Coins)
- Estimate (Relationships)

2nd Grade Math
West Aurora School District 129
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

- Pattern Problems

Skills: Be Able to Do

- Solve (Pattern Problems)
- Justify (Solutions of Pattern Problems)

2nd Grade Math
West Aurora School District 129
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

- Geometric Concepts Involving Points, Lines, Planes, and Space
- Taking Apart & Putting Together 2-3 Dimensional Objects
- Direction and Distance in Space
- Translations, Reflections, and Rotations
- Shapes that have a Line of Symmetry
- Relationships Using Points, Lines, Planes, and Solids
- Congruent Objects
- Two and Three Dimensional Objects

Skills: Be Able to Do

- Demonstrate (Geometric Concepts Involving Points, Lines, Planes and Space)
- Apply (Geometric Concepts Involving Points, Lines, Planes and Space, Direction and Distance in Space)
- Investigate (Putting Together & Taking Apart 2-3 Dimensional Objects)
- Predict (Putting Together & Taking Apart 2-3 Dimensional Objects)
- Describe (Relationships Using Points, Lines, Planes, and Solids, Direction and Distance in Space)
- Interpret (Direction and Distance in Space)
- Perform (Translations, Reflections, and Rotations)
- Create (Shapes that have a Line of Symmetry)
- Complete (Shapes that have a Line of Symmetry)
- Identify (Congruent Objects, Relationships Using Points, Lines, Planes, and Solids,)
- Classify (Relationships Using Points, Lines, Planes, and Solids)
- Compare (Relationships Using Points, Lines, Planes, and Solids)
- Compare and Contrast (Two and Three Dimensional Objects Using Appropriate Vocabulary)

3rd 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

- Equivalent Representation of Whole Numbers
 - Through 100,000
- Place Value
 - Through 100,000
- Fraction Representation with a Pictorial Model
- Problems Involving Descriptions of Numbers
 - Characteristics
 - Odd/even
 - Factors, Multiples
 - Relationships
 - Greater than/Less than
- Problems & Number Sentences
 - Addition w/ Regrouping
 - Subtraction w/ Regrouping
- Multiplication
 - Basic Facts thru 10
 - Related Multiples of 10

Skills: Be Able to Do

- Read (Equivalent Representation of Whole Numbers)
- Write (Place Value)
- Recognize (Place Value and Fraction Represented w/ Pictorial Model)
- Model (Place Value and Multiplication)
- Solve (Problems Involving Descriptions of Numbers and Number sentences)
- Apply (Basic Facts and Related Multiples)

3rd Grade Math
West Aurora School District 129
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

- Appropriate Units and Tools
 - Time
 - To Nearest Minute
 - Length
 - To Nearest Inch or Centimeter
 - Temperature
 - To Nearest Degree
- Length, Perimeter, Area, and Weight/Mass (Correct Unit)
- Unit Conversions (in Same System)
 - Time
 - Length

Skills: Be Able to Do

- Select (Appropriate Units and Tools)
- Use (Appropriate Units and Tools)
- Measure (Appropriate Units and Tools)
- Compare (Length, Perimeter, Area, and Weight/Mass)
- Estimate (Length, Perimeter, Area, and Weight/Mass)
- Solve (Unit Conversions)

3rd Grade Math
West Aurora School District 129
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

- Word Problems Involving Unknown Quantities

Skills: Be Able to Do

- Solve (Word Problems Involving Unknown Quantities)

Topics or Contexts: See attached document listing specific Saxon lessons that relate to each of the above concepts. Refer to the 3rd grade math binder by lesson for additional activities and/or games.

3rd 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

- Three-Dimensional Shapes
 - Figures
 - Cubes
 - Spheres
 - Cones
 - Cylinders
 - Prism
 - Pyramids
 - Characteristics
 - Faces
 - Edges
 - Vertices

Skills: Be Able to Do

- Identify (Three-Dimensional Shapes)
- Describe (Three-Dimensional Shapes)

3rd 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
 - Pictograph
 - Bar
 - Venn Diagram
 - Tally Chart
 - Table
- Chances of a Outcome
 - Presented Visually
- Response Format
 - 3 out of 4

Skills: Be Able to Do

- Read (Pictograph, Bar, Venn Diagram, Tally Chart, and Table)
- Interpret (Pictograph, Bar, Venn Diagram, Tally Chart, and Table)
- Describe (Chances of an Outcome)
- Use (Response Format)

4th 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

- Equivalent Fractions
- Decimals
- Problems
 - Descriptions of Numbers
 - Characteristics
 - Relationships
 - Odd/Even
 - Factors/Multiples
 - Greater than/Less than
- Number Sentences
- Multiplication/Division
 - Basic Facts
 - Multiples of Ten
- Whole Numbers
 - Given Situations
 - Reasonableness

Skills: Be Able To Do

- **Read** (Equivalent Fractions)
- **Write** (Equivalent Fractions)
- **Recognize** (Equivalent Fractions)
- **Model** (Equivalent Fractions and Multiplication/Division)
- **Divide** Regions (Equivalent Fractions)
- **Order** (Decimals)
- **Compare** (Decimals)
- **Solve** (Problems, Descriptions of Numbers, Addition, Subtraction, and Multiplication through 3-Digit by 1-Digit)
- **Apply** (Multiplication/Division)
- **Estimate** (Whole Numbers)

4th 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

- Unit Conversions (in Same System)
 - Time
 - Length
 - Weight/Mass

Skills: Be Able To Do

- **Solve** (Unit Conversions)

**4th 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

- Word Problems Involving Unknown Quantities

Skills: Be Able To Do

- **Solve** (Word Problems Involving Unknown Quantities)

**4th 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

- Three-Dimensional Shapes
 - Figures
 - Cubes
 - Spheres
 - Cones
 - Cylinders
 - Characteristics
 - Faces
 - Edges
 - Vertices
- Distance on a Number Line
 - Whole Numbers

Skills: Be Able To Do

- **Identify** (Three-Dimensional Shapes)
- **Describe** (Characteristics)
- **Determine** (Distance on a Number Line Between Two Points)

**4th 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
 - Pictograph
 - Bar Graph
 - Tally Chart
 - Table
- Events (Probability)
 - Certain
 - Most Likely
 - Equally Likely
 - Least Likely
 - Possible
 - Impossible
- Chances of an Outcome (Presented Visually)
- Response Format (3 out of 4, $\frac{3}{4}$)

Skills: Be Able To Do

- **Create** (Graphs)
- **Classify** (Events)
- **Describe** (Chances of an Outcome)
- **Use** (Response Format)

5th 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

- Fractions
 - Like Denominators
 - Unlike Denominators
- Problems Involving Descriptions of Numbers
 - Characteristics
 - Relationships
 - Odd/Even
 - Factors/Multiples
 - Squares
 - Greater than/Less than
- Problems and Number Sentences
 - Decimals through Hundredths
 - Addition/Subtraction
- Problems involving Properties of Whole Numbers
 - Commutative
 - Distributive
 - Identity
- Whole Numbers, Fractions & Decimals
 - Given Situation
 - Reasonableness
- Ratios
 - Notation
 - Equivalent

Skills: Be Able to Do

- **Order** (Fractions)
- **Compare** (Fractions)
- **Solve** (Problems Involving Descriptions of Numbers, Problems and Number Sentences, and Problems Involving Properties of Whole Numbers)
- **Estimate** (Whole Numbers, Fractions & Decimals)
- **Identify** (Ratios)
- **Express** (Ratios)

5th 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

- Appropriate Units and Tools
- Geometric Properties
- Length, Mass/Weight, Capacity and Angles

Skills: Be able to Do

- **Select** (Appropriate Units and Tools)
- **Use** (Appropriate Units and Tools)
- **Measure** (Length, Mass/Weight, Capacity and Angles)

Topics or Contexts: See attached document listing specific Saxon lessons that relate to each of the above concepts. Refer to the 5th grade math binder by lesson for additional activities or games.

5th 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

- Change in One Quantity Results in Change in Another Quantity
- Word Problems Involving Unknown Quantities

Skills: Be able to Do

- **Demonstrate** (Input/Output Tables)
- **Solve** (Word Problems Involving Unknown Quantities)

5th 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

- Two-Dimensional Shapes
 - Figures
 - Triangles
 - Quadrilaterals
 - Pentagons
 - Hexagons
 - Octagons
 - Characteristics
 - Number of Sides
 - Length of Sides
 - Number of Vertices
 - Interior Angle - Right, Acute, Obtuse
- Three-Dimensional Shapes
 - Figures
 - Cubes
 - Spheres
 - Cones
 - Cylinders
 - Prisms
 - Pyramids
 - Characteristics
 - Faces
 - Edges
 - Vertices

Skills: Be able to Do

- **Classify** (Two-Dimensional Shapes)
- **Describe** (Characteristics of Two and Three-Dimensional Shapes)
- **Sketch** (Two-Dimensional Shapes)
- **Identify** (Three-Dimensional Shapes)

5th 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

- Mean, Median, Mode, Range
 - Data Set
 - Graph
- Fundamental Counting Principle
 - Combinations

Skills: Be able to Do

- **Determine** (Mean, Median, Mode, and Range)
- **Apply** (Fundamental Counting Principle)