

Teaching Unit: 1: Naming and Constructing Geometric Figures

Essential Understandings

1. An awareness of the world around us is improved through the study of two-dimensional geometry.

Sub Topic:

Knowledge and Skills

- Students will:
- use geometry tools
 - classify quadrangles
 - explore and identify polygons
 - review and practice addition and subtraction facts

Teaching Unit: 2: Using Numbers and Organizing Data

Essential Understandings

- Numbers and data are used to quantify or describe phenomena in everyday life.

Sub Topic:

Knowledge and Skills

- Students will:
- examine different uses and equivalent names of numbers and review the base-ten place value system
 - review procedures for addition and subtraction of multi-digit whole numbers
 - extend ideas about data collection, organization, display, and analysis

Teaching Unit: 3: Multiplication & Division Facts/Algebra

Essential Understandings

1. Developing automaticity with multiplication fact recall will facilitate more complicated computation.
2. Interpreting data can help us solve number stories related to the world around us.

Sub Topic:

Knowledge and Skills

- Students will:
- work toward instant recall of multiplication facts
 - interpret data
 - measure length
 - solve number stories
 - solve open sentences

Teaching Unit: 4: Decimals and Their Uses

Essential Understandings

1. The base-ten place-value system and computation algorithms can be extended to decimals.
2. The metric system of measurement is based on the base-ten number system.

Sub Topic:

Knowledge and Skills

- Students will:
- extend the base-ten place-value system to decimals
 - extend whole-number methods of addition and subtraction to decimals
 - understand the relationships among metric units of length

Teaching Unit: **5: Big Numbers, Estimation, and Computation (multi-digit multiplication)**

Sub Topic:

Essential Understandings

1. Basic multiplication facts, number patterns, and estimation can be useful when multiplying multi-digit numbers.
2. Multi-digit multiplication can be computed in a variety of ways.

Knowledge and Skills

Students will:

- extend basic multiplication facts to the principles of multiplication of multi-digit numbers
 - use estimation when appropriate
 - explore a variety of computation methods of multi-digit numbers, becoming secure with at least one method
 - use the patterns of the base-ten place-value system to read, write, and compare large numbers
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Teaching Unit: **6: Division; Map Reference Frames; Measures of Angles**

Sub Topic:

Essential Understandings

1. Basic multiplication facts, number patterns, and estimation can be useful when dividing multi-digit numbers.
2. Understanding of a division number story problem must occur in order to interpret the remainder.
3. The measurement of a full circle can be divided into 360 degrees which are then used to measure angles.
4. Coordinate planes have many practical uses.

Knowledge and Skills

Students will:

- solve multiplication and division number stories
 - explore and expand their understanding of multi-digit division by using the partial-quotients algorithm
 - practice drawing, measuring, and naming angles using half-circle and full-circle protractors
 - expand knowledge of ordered pairs on a grid system including the real life application of latitude and longitude
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Teaching Unit: **7: Fractions & Their Uses; Chance & Probability**

Sub Topic:

Essential Understandings

A fraction is a number representing a part of a whole.
The probability of an event can be determined mathematically.

Knowledge and Skills

Students will:

- review fractions as parts of a whole
 - compare fractions
 - find fractional parts of sets of objects
 - identify equal fractions
 - review basic ideas of probability
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Teaching Unit: **8: Perimeter & Area**

Essential Understandings

Perimeter and area of rectangles, parallelograms, and triangles can be determined mathematically.

Scale drawings can be used to represent full-size models.

Sub Topic:

Knowledge and Skills

Students will:

- determine the perimeter of a polygon
- determine the area of a polygon by counting unit squares
- determine the area of rectangles, parallelograms, and triangles using formulas

Teaching Unit: **9: Fractions, Decimals, and Percents**

Essential Understandings

1. The same number can be represented in many forms, such as fractions, decimals, and percents.

Sub Topic:

Knowledge and Skills

Students will:

- recognize equal fractions, decimals, and percents
- understand data represented as percents displayed in graphic form
- begin to work with multiplication and division of decimals by whole numbers

Teaching Unit: **10: Reflections & Symmetry**

Essential Understandings

The aesthetics of geometry include flips, slides, and turns which people use in design.

Addition can be applied to negative numbers.

Sub Topic:

Knowledge and Skills

Students will:

- explore and understand the geometry of flips, slides, and turns.
- add negative numbers.

Teaching Unit: **11: 3-D Shapes, Weight, Volume, & Capacity**

Essential Understandings

Three-dimensional solids may be classified by their properties.

Capacity, volume, and weight are measurements used when exploring three-dimensional shapes.

Subtraction can be applied to negative numbers.

Sub Topic:

Knowledge and Skills

Students will:

- understand how units of weight, capacity, and volume are measured and used.
- identify geometric solids by using their properties.
- subtract negative numbers.

Teaching Unit: **12: Rates**

Essential Understandings

The use of rates is prevalent in the everyday world.

Sub Topic:

Knowledge and Skills

Students will:

- solve rate problems in everyday applications such as unit pricing.
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