Mathematics (3)

Mathematics

Grade(s) 3rd, Duration 1 Year
Required Course

Course Overview

Third grade students will develop understanding of multiplication and division and strategies for both within 100; they will develop an understanding of fractions especially unit fractions; they will develop understanding of structure of rectangular arrays and of area; they will describe and analyze two-dimensional shapes.

Mathematics (grade 3) courses typically emphasize number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; and measurement. These courses often require students to improve their numerical fluency, adding multiplication and division to addition and subtraction operations, using whole numbers and parts (quarters, thirds, halves), and estimation.

Scope And Sequence

Timeframe	Unit	Instructional Topics
45 Day(s)	Number and Operations in Base Ten	1. (1) Numeration 2. (2) Number sense: addition and subtraction 3. (3) Using place value to add and subtract
50 Day(s)	Operations and Algebraic Thinking	1. (4) Meanings of multiplication 2. (5) Multiplication facts: use patterns 3. (6) Multiplication facts: use known facts 4. (7) Meanings of Division 5. (8) Division Facts
22 Day(s)	Number and Operations: Fractions	1. (9) Understanding Fractions 2. (10) Fractions Comparison and Equivalence
15 Day(s)	Geometry	1. (11) 2-dimensional shapes and their attributes
36 Day(s)	Measurement and Data	1. (12) Time 2. (13) Perimeter 3. (14) Area 4. (15) Liquid Volume and Mass 5. (16) Data

Materials and Resources

EnVision math resources, manipulative kits, and teacher-created materials as needed. Classroom sets are located in the classroom. Teachers use a variety of technological resources including web sites, IPads, Successmaker, Promethean Planet lessons, Rocket Math, mini-whiteboards.

Prerequisites

Students should have successfully completed Second grade Math curriculum.

Course Details

Unit: Number and Operations in Base Ten

Duration: 45 Day(s)

Unit Overview

Students will use place value understanding and properties of operations to perform multi-digit arithmetic. (Topics 1, 2, 3)

Materials and Resources

EnVision math resources, number lines, hundreds charts, touchpoint math (as needed), Rocket Math for math fact practice, a variety of technology as indicated in the course overview, flash cards, manipulatives.

Academic Vocabulary

Topic 1: Place value, standard form, expanded form, digit, word form, period, compare, order;

Topic 2: addend, sum, difference, commutative property of addition, associative property of addition, zero property for addition, fact family, equation, round, estimate, compatible numbers;

Topic 3: Vocabulary review from Topics 1 & 2.

Summative Assessment

End of Topic assessments (book or online copy); math fact quizzes;

Topic: (1) Numeration

Duration: 10 Day(s)

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Topic Overview

Use place value understanding to round whole numbers to the nearest 10 or 100.

Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

- representing numbers
- ways to name numbers
- greater numbers
- understanding number lines
- counting on the number line
- comparing numbers
- ordering numbers
- problem solving: make an organized list

Learning Targets

Representing numbers
  Students will read and write 3 digit and 4 digit numbers.

Ways to name numbers
  Students will name numbers in different ways.

Greater numbers
  Students will read and write numbers in the 10,000 and 100,000.

Understanding number lines
  Students locate and compare whole numbers on a number line.

Counting on the number line
  Students identify the pattern on a number line or graph scale, and calculate missing labels.

Comparing numbers
  Students will compare 3 and 4 digit whole numbers.

Ordering numbers
  Students will order 3 and 4 digit numbers.

Make an organized list
  Students will make an organized list to represent information given in a problem.

Topic: (2) Number sense: addition and subtraction   **Duration:** 15 Day(s)

Topic Overview

Use place value understanding to round whole numbers to the nearest 10 or 100.

Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

- addition meaning and properties
- subtraction meanings
- using mental math to add
- using mental math to subtract
- rounding
- estimating sums
- estimating differences
- making sense of addition and subtraction equations
- problem solving reasonableness

Learning Targets

Addition meaning and properties
  Students use concrete materials and concepts of addition to model the commutative, associative and identity properties of addition.

Subtraction meanings
  Students recognize situations when subtraction is used to solve a problem and write number sentences.

Using mental math to add
  Students solve problems by addition with mental math

Using mental math to subtract
  Students will solve problems by subtracting with mental math.

Rounding
Students round two digit and three digit whole numbers to the nearest ten or hundred, by comparing to the number halfway between or by using place value.

Estimating sums
Students will solve problems by estimating sums.

Estimating differences
Students will solve problems by estimating differences.

Making sense of addition and subtraction equations
Students will decide whether both sides of an equation are equal and they will determine the value of an unknown number in an equation.

Problem-solving: reasonableness
Students will solve word problems and check their answers for reasonableness.

Topic: (3) Using place value to add and subtract   **Duration:** 20 Day(s)

Topic Overview
Fluently add and subtract within 1000 using strategies and algorithms based on place value properties of operations and/or the relationship between addition and subtraction.

Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

- Adding with an expanded algorithm
- Models for adding three-digit numbers
- Adding three-digit numbers
- Adding three or more numbers
- Problem solving: draw a picture
- Subtracting with an expanded algorithm
- Models for subtracting three-digit numbers
- Subtracting three digit numbers
- Subtracting across zero
- Problem solving: draw a picture and write a number sentence

Learning Targets

Adding with an expanded algorithm
Students solve 3-digit addition problems using an expanded algorithm.

Models for adding 3-digit numbers
Students add 3-digit numbers using place-value blocks or pictures and record the results using the standard addition algorithm.

Adding 3-digit numbers
Students add 3-digit numbers using paper-and-pencil methods and use addition to solve problems.

Adding 3 or more numbers
Students add 3 or more 2- and 3-digit numbers using paper-and-pencil methods and use addition to solve problems.

Problem Solving: Draw a Picture
Students draw a picture to solve a problem.

Subtracting with an expanded algorithm
Students solve 3-digit subtraction problems by breaking them into smaller, easier subtraction problems.

Models for subtracting 3-digit numbers
Students subtract 3-digit numbers using place value blocks or pictures and record the results using the standard subtraction algorithm.

Subtracting 3-digit numbers
Students subtract 3-digit numbers using paper-and-pencil methods and use subtraction to solve problems.

Subtracting across zero
Students subtract 3-digit numbers using paper-and-pencil methods and use subtraction to solve problems.

Problem solving: Draw a picture and write a number sentence.
Students solve problems by writing a number sentence based on a picture they have drawn describing the problem.

Unit: Operations and Algebraic Thinking   **Duration:** 50 Day(s)

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Grade(s) 3rd, Duration 1 Year
Required Course

Unit Overview

Develop an understanding of multiplication and division and strategies for both within 100 (Topics 4,5,6,7,8)

Materials and Resources

EnVision math resources, number lines, hundreds charts, touchpoint math (as needed), Rocket Math for math fact practice, a variety of technology as indicated in the course overview, flash cards, manipulatives.

Academic Vocabulary

Topic 4: multiplication, factors, product, array, commutative (order) property of multiplication,

Topic 5: multiples, Identity (One) Property of Multiplication; Zero Property of Multiplication;

Topic 6: Distributive Property of Multiplication; Associative (Grouping) Property of Multiplication;

Topic 7: division

Topic 8: dividend, divisor, quotient

Summative Assessment

End of Topic assessments (book or online copy); math fact quizzes;

Topic: (4) Meanings of multiplication

Duration: 10 Day(s)

Topic Overview

Interpret products of whole numbers.

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

Apply properties of operations as strategies to multiply and divide.

- Multiplication as repeated addition
- Arrays and multiplication
- The Commutative Property
- Writing multiplication stories
- Problem solving, writing to explain

Learning Targets

Multiplication as repeated addition
    Students will write multiplication number sentences for given equal group situations, using the X symbol.

Arrays and multiplication
    Students will write multiplication sentences for arrays and use arrays to find products.

The commutative property
    Students will write multiplication sentences for arrays, use arrays to find products, and use the Commutative Property of multiplication.

Writing multiplication stories
    Students will write math stories for given multiplication facts.

Problem solving: Writing to explain
    Students will use objects, words, pictures, numbers, and technology to provide a written explanation reflecting their understanding.

Topic: (5) Multiplication facts: use patterns

Duration: 10 Day(s)

Topic Overview

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays and measurement quantities.

Identify arithmetic patterns and explain them using properties of operations.

Multiply one digit whole numbers by multiples of 10 in the range 10 to 90 using strategies based on place value and properties of operations.

- Two and five as factors
- Nine as a factor
- Multiplying with zero and one
- Patterns for facts
- Ten as a factor
- Multiplying by multiples of ten
- Problem solving two-question problems

Learning Targets

2 and 5 as factors

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Students will use patterns to multiply with 2 and 5 as factors.

9 as a factor
Students will use patterns to multiply with 9 as a factor.

Multiplying with 0 and 1
Students will use patterns and properties to multiply with 0 and 1 as factors.

Patterns for facts
Students will use patterns to find products with factors of 2, 5, and 9.

10 as a factor
Students will use patterns to multiply with 10 as a factor.

Multiplying by multiples of 10
Students will use basic multiplication facts and number patterns to multiply by multiples of 10.

Problem solving: two-question problems
Students will solve for one problem and use the solution to complete a second problem.

Topic: (6) Multiplication facts: use known facts   **Duration:** 10 Day(s)

Topic Overview

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

Apply properties of operations as strategies to multiply and divide.

- The Distributive Property
- Three as a factor
- Four as a factor
- Six and seven as factors
- Eight as a factor
- Multiplying with three factors
- Multiplication facts
- Multiplying to find combinations
- Problem solving: multiple step problems

Learning Targets

The distributive property
Students will use the distributive property to simplify multiplication problems by breaking apart large arrays that represent multiplication facts into smaller arrays that represent other multiplication facts.

3 as a factor
Students will use known facts to find products with 3 as a factor.

4 as a factor
Students will use known facts and doubles to find products with 4 as a factor.

6 and 7 as factors
Students will use known facts to find products with 6 and 7 as factors.

8 as a factor
Students will use known facts and doubles to find products with 8 as a factor.

Multiplying with 3 factors
Students will multiply three numbers and use the associative property of multiplication.

Multiplication facts
Students will use known facts and patterns to find products.

Multiplying to find combinations
Students will use objects, pictures, and multiplication to find the number of possible combinations of data or objects in a problem.

Problem solving: multiple-step problems
Students will solve multiple-step problems.

Topic: (7) Meanings of Division   **Duration:** 10 Day(s)

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Grade(s) 3rd, Duration 1 Year
Required Course

Topic Overview

Interpret whole-number quotients of whole numbers.

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

Understand division as an unknown factor problem.

- Division as sharing
- Division as repeated subtraction
- Finding missing numbers in a multiplication table
- Problem solving-Choose an appropriate equation
- Writing division stories
- Problem solving-Use objects and draw a picture

Learning Targets

Division as sharing
   Students will use models to solve division problems involving sharing and record solutions using division number sentences.

Division as repeated subtraction
   Students will use models to solve division problems involving repeated subtraction and record solutions using division number sentences.

Finding missing numbers in a multiplication table
   Students will use multiplication tables to find answers to division problems.

Problem solving: Choose an appropriate equation
   Students will solve word problems by writing equations that represent the problem situations.

Writing division stories
   Students will write and solve number stories involving division.

Problem solving: use objects and draw a picture
   Students will solve problems by using objects and drawing a picture.

Topic: (8) Division Facts   **Duration:** 10 Day(s)

Topic Overview

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations.

- Relating multiplication and division
- Fact families with 2, 3, 4, and 5
- Fact families with 6 and 7
- Fact families with 8 and 9
- Problem solving-Multiple step problems
- Making sense of multiplication and division equations
- Dividing with a 0 and 1
- Multiplication and division facts
- Problem solving-Draw a picture and write a number sentence

Learning Targets

Relating Multiplication and Division
   Students will give a multiplication fact, state a related division fact and vice versa.

Fact Families with 2, 3, 4, and 5
   Students will give quotients for division facts with divisors of 2, 3, 4, and 5.

Fact Families with 6 and 7
   Students will give quotients for division facts with divisors of 6 and 7.

Fact Families with 8 and 9
   Students will give quotients for division facts with divisors of 8 and 9.

Problem solving: Multiple-Step Problems
   Students will use previously learned skills to solve multiple-step problems.

Making sense of multiplication and division equations

Students will learn how to use multiplication and division facts to decide whether both sides of an equation are equal. They will also learn to determine the value of an unknown number in an equation.

Dividing with 0 and 1
Students will use patterns and fact families to find answers to division facts with 0 and 1.

Multiplication and Division Facts
Students will use multiplication and division facts to solve problems.

Problem Solving: Draw a Picture and Write a Number Sense
Students will solve division problems involving sharing and repeated-subtraction by drawing a picture and writing a number sentence.

Unit: Number and Operations: Fractions   **Duration:** 22 Day(s)

Unit Overview
Students will develop understanding of fractions, especially unit fractions. (Topics 9 and 10)

Materials and Resources
EnVision math resources, number lines, a variety of technology as indicated in the course overview, flash cards, fraction manipulatives,

Academic Vocabulary
Topic 9: halves, thirds, fourths, fifths, sixths, eighths, tenths, twelfths, fraction, unit fraction, numerator, denominator, mixed numbers, benchmark fractions

Topic 10: equivalent fractions, simplest form

Summative Assessment
End of Topic assessments (book or online copy);

Topic: (9) Understanding Fractions   **Duration:** 10 Day(s)

Topic Overview
Understand a fraction $1/b$ as the quantity formed by one part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size.

Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the end point of the part based at 0 locates the number $1/b$ on the number line.

Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

- Dividing regions into equal parts
- Fractions and regions
- Fractions and sets
- Fractional parts of a set
- Locating fractions on a number line
- Benchmark fractions
- Fractions and length
- Problem solving-Make a table and look for a pattern

Learning Targets

Dividing Regions into Equal Parts
Students will identify regions that have been divided into equal-sized parts and divide regions into equal-sized parts.

Fractions and Regions
Students will associate the model, symbol, and words used to describe a fractional part of a whole region.

Fractions and Sets
Students will associate the model, symbol, and words used to describe a fractional part of a set.

Fractional Parts of a Set
Students will find a fractional part of a set.

Locating Fractions on the Number line
Students will identify fractional parts and mixed numbers on a number line.

Benchmark Fractions
Students use benchmark fractions to estimate fractional parts.

Fractions and Length
Associate the model, symbol, and words use to describe a fractional part of the length of an object.

Problem Solving: Make a Table and Look for a Pattern
Students will make a table and look for a pattern to solve a problem.

Topic: (10) Fractions Comparison and Equivalence   **Duration:**   12 Day(s)

Topic Overview

Understand a fraction as a number on a number line; represent fractions on a number line diagram.

Explain equivalence in special cases, and compare fractions by reasoning about their size.

Understand 2 fractions as equivalent (equal) if they are the same size, or the same point on a number line.

Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.

Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.

- Using models to compare fractions; same denominator
- Using models to compare fractions; same numerator
- Comparing fractions using benchmarks
- Comparing fractions on the number line
- Finding equivalent fractions
- Equivalent fractions and the number line
- Whole numbers and fractions
- Using fractions
- Problem Solving-Draw a picture

Learning Targets

Using Models to Compare Fractions: Same Denominator
Students will use models and quantitative reason to compare fractions with the same denominator.

Using Models to Compare Fractions: Same Numerator
Students will use models and reasoning to compare fractions with the same numerator.

Comparing Fractions Using Benchmarks
Students will use benchmark numbers to compare fractions with the same numerator or the same denominator.

Comparing Fractions on the Number Line
Students will use number lines to compare fractions with like denominators or like numerators.

Finding Equivalent Fractions
Students will use models to find equivalent fractions.

Equivalent Fractions and the Number Line
Students will use number lines to identify equivalent fractions.

Whole Numbers and Fractions
Students will use fraction strips and number lines to find fraction names for whole numbers.

Using Fractions
Students will compare and order fractions to solve problems.

Problem Solving: Draw a Picture
Students will draw a picture to solve problems.

Unit: Geometry   **Duration:** 15 Day(s)

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Required Course

Unit Overview
Students will describe and analyze two-dimensional shapes. (Topic 11)

Materials and Resources
EnVision math resources, a variety of technology as indicated in the course overview, flash cards, manipulatives, real world examples, cameras

Academic Vocabulary
Topic 11: point, line, line segment, intersecting lines, parallel lines, ray, angle, vertex (of an angle), right angle, perpendicular, acute angle, obtuse angle, polygon, side, vertex (of a polygon), diagonal, triangle, quadrilateral, pentagon, hexagon, octagon, decagon, equilateral triangle, isosceles triangle, scalene triangle, right triangle, acute triangle, obtuse triangle, trapezoid, parallelogram, rectangle, rhombus, square

Summative Assessment
End of Topic assessments (book or online copy);

Topic: (11) 2-dimensional shapes and their attributes	**Duration:** 15 Day(s)

Topic Overview
Understand that shapes in different categories may share attributes, and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of the subcategories.

Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

- Lines and line segments
- Angles
- Polygons
- Triangles
- Quadrilaterals
- Combining and separating shapes
- Making new shapes
- Problem solving-Solve a simpler problem
- Make and test generalizations

Learning Targets

Lines and Line Segments
Students will identify lines and line segments and explore their different relationships.

Angles
Students will identify and classify angles in relation to right angles.

Polygons
Students will identify and classify polygons.

Triangles
Students will identify and classify triangles.

Quadrilaterals
Students will identify and classify quadrilaterals.

Combining and Separating Shapes
Students will create new shapes by combining shapes or by separating shapes.

Making New Shapes
Students will make a new shape by cutting apart a shape and rearranging the pieces.

Problems Solving: Solve a Simpler Problem
Students will solve a problem by first solving a simpler problem.

Problem Solving: Make and Test Generalizations
Students will identify commonalities among objects or situations to make and test generalizations.

Unit: Measurement and Data

Duration: 36 Day(s)

Mathematics (3)

Mathematics

Unit Overview
Students will develop an understanding of the structure of rectangular arrays and of area, time, perimeter, liquid volume & mass measurement, and data. (Topics 12, 13, 14, 15, 16)

Materials and Resources
EnVision math resources, number lines, a variety of technology as indicated in the course overview, flash cards, manipulatives such as clocks, measuring tools, charts/posters;

Academic Vocabulary
Topic 12: hour, half-hour, quarter-hour, minute, seconds, A.M., P.M., elapsed time,

Topic 13: perimeter, mile

Topic 14: area, square unit

Topic 15: capacity, cup (c), pint (pt.), quart (qt.), gallon (gal.), milliliter (mL), liter (L), mass, gram (g), kilogram (kg), weight, ounce (oz.), pound (lb), ton

Topic 16: line plot, pictograph, key, bar graph, scale

Summative Assessment
End of Topic assessments (book or online copy);

Topic: (12) Time	**Duration:** 7 Day(s)

Topic Overview
Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.

- Time to the half hour and quarter hour
- Time to the minute
- Units of time
- Elapsed time
- Problem solving-Work backwards

Learning Targets
Time to the Half Hour and Quarter Hour
Students will tell time to the nearest half hour and quarter hour using analog and digital clocks, and identify times as A.M. or P.M.

Time to the Minute
Students will tell time to the nearest minute using analog and digital clocks.

Units of Time
Students will perform simple conversions for units of time.

Elapsed Time
Students will find elapsed time in intervals of minutes.

Problem Solving: Work Backward
Students will use the strategy of work backward to solve problems.

Topic: (13) Perimeter	**Duration:** 7 Day(s)

Topic Overview
Solve real world and math problems involving perimeters of polygons, including finding perimeter given the side lengths, finding an unknown side length.

- Understanding perimeter
- Tools and units for perimeter
- Perimeter of common shapes
- Different shapes with the same perimeter
- Problem solving-Try, check, and revise

Learning Targets
Understanding Perimeter
Students will use standard units to find the perimeter of a shape.

Tools and Units for Perimeter
Students will select appropriate tools and units to find perimeter.

Perimeter of Common Shapes
Students will use standard units to find the perimeter of a common shape.

Different shapes with the Same Perimeter
Students will match shapes to a given perimeter and learn that different shapes can have the same perimeter.

Problem Solving: Try, Check, and Revise
Students will solve a problem through the process of try, check, and revise.

Topic: (14) Area

Duration: 12 Day(s)

Topic Overview
Understand and use concepts of area

- Covering regions
- Area and units
- Standard units
- Area of squares and rectangles
- Area and the distributive property
- Problem solving-Solve a simpler problem
- Area of irregular shapes
- Same area, different perimeter
- Equal area and fractions
- Problem solving-Selecting appropriate measurement units and tools

Learning Targets
Covering Regions
Students will measure the area of a shape by counting the number of square units that cover a region.

Area and Units
Students use square units to make figures with given areas.

Standard Units
Students will use standard units of area and counting to measure the area of a shape.

Areas and Squares and Rectangles
Students will find the area of recrtangles by counting square units or by using a formula.

Area and the Distributive Property
Students will use the areas of rectangles to model the Distributive Property.

Problem Solving: Solve a Simpler Problem
Students will solve complex problems asking for the area of irregular shapes.

Area of Irregular Shapes
Students will find the area of irregular shapes.

Same Area, Different Perimeter
Students will compare different rectangles with the same area to discover the change in perimeter.

Equal Areas and Fractions
Students will use equal areas of parts of figures to model unit fractions.

Problem Solving: Selecting Appropriate Measurement Units and Tools
Students will select appropriate units and tools for measuring the area of given items.

Topic: (15) Liquid Volume and Mass

Duration: 5 Day(s)

Topic Overview
Understand and use customary and metric units for volume and weight.

- Customary units of capacity
- Metric units of capacity
- Units of mass
- Units of weight
- Problem solving-draw a picture

Learning Targets
Customary Units of Capacity
Students will choose an appropriate unit and tool, estimate, and measure in cups, pints, quarts, and gallons.

Students will identify objects which hold about a cup, a pint, a quart, or a gallon.

Metric Units of Capacity
   Students will choose an appropriate unit and tool, estimate, and measure in milliliters and liters.

   Students identify objects that hold about a liter or a milliliter.

Units of Mass
   Students choose an appropriate unit and tool, estimage, and measure in grams and kilograms.

   Students identify objects with a mass ob about one gram or one kilogram.

Units of Weight
   Students will choose an appropriate unit and tool, estimage, and measure in ounces, pounds, and tons.

   Students identify objects that weigh about an ounce, a pound, or a ton.

Problem Solving: Draw a Picture
   Students draw a picture to solve a problem involving units of capacity and mass.

Topic: (16) Data

Duration: 5 Day(s)

Topic Overview
   Use graphs to represent a data set.

   Generate measurement data by measuring lengths using rulers to nearest 1/4 of an inch.

   • Line plots
   • Length and line plots
   • Reading pictographs and bar graphs
   • Making pictographs
   • Making bar graphs
   • Problem solving - use tables and graphs to draw conclusions

Learning Targets
Line Plots
   Students will use a line plot to organize the results of an experiment.

Length and Line Plots
   Students will generate data by measuring lengths to the nearest fourth of an inch make line plots to organize their data and draw conclusions.

Reading Pictographs and Bar Graphs
   Students will read and interpret data from a pictograph and a bar graph.

Making Pictographs
   Students will make a pictograph from a table or tally chart.

Making Bar Graphs
   Students wil lmake a bar graph to represent the data in a table or tally chart.

Problem Solving: Use Tables and Graphs to Draw Conclusions
   Students will solve problems by using tables and graphs to draw conclusions.