

Curriculum Map

Elementary Mathematics

Grade Four

Saugus Public School

Baseline Exam/Placement Exam – must be given prior to Week 1*

Benchmark Exam 1 - Topics 1-8 must be given end of Week 15

Benchmark Exam 2 - Topics 1-12 must be given end of Week 22

Benchmark Exam 3 - Topics 1-20 must be given end of Week 36

***Week 1=First Full Week of School**

Week 1

Massachusetts Performance Standards

The students will:

- 4.N.1** Exhibit an understanding of the base ten number system by reading, modeling, writing, and interpreting whole numbers to at least 100,000; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers.
- 4.N.2** Represent, order, and compare large numbers (to at least 100,000) using various forms, including expanded notation, e.g., $853 = 8 \times 100 + 5 \times 10 + 3$.
- 4.N.6** Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to the hundredths.
- 4.N.16** Round whole numbers through 100,000 to the nearest 10, 100, 1000, 10,000, and 100,000.

Common Core Massachusetts Performance Standards

The students will:

- 4.NBT.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.*
- 4.NBT.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- 4.NBT.3** Use place value understanding to round multi-digit whole numbers to any place.

TOPIC ONE: Numeration

1. Place Value to Thousands (1-1)
2. Place Value to Millions (1-2)
3. Comparing and Ordering Whole Numbers (1-3)
4. Rounding Whole Numbers (1-4)

Objectives (Students will...)

1. **Represent** numbers with place value blocks and number lines.
2. **Write** numbers in standard, expanded, and word form.
3. **Represent** numbers in the millions using a place-value chart.
4. **Write** numbers in the expanded form, using periods to write numbers in word form.
5. **Apply** knowledge of place value to compare and order numbers.
6. **Show** how to use place value to round whole numbers.
7. **Use** place-value charts to read, write, and compare decimals in tenths and hundredths using money.
8. **Convert** a collection of coins and bills into a total amount and make change.
9. **Find** and **record** all possible outcomes for a situation systematically.

Essential Question

How can place value be used to write, compare, order, and round numbers?

Teacher Resources

enVisionMATH Scott Foresman-Addison Wesley ©2009

1. Teacher Edition, Student Edition, and Workbooks (Placement Test: Envelope Topic 1)
2. Classroom Manipulative Kit
3. Overhead Manipulative Kit
4. Math Diagnosis and Intervention System
5. Teaching Tool Masters (Basic Fact Sheet)

Media and Technology Resources

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1. Electronic Digital Teacher and Student Editions
2. On-Line Classroom Resources Access Pack
3. eTools Electronic Math Manipulative Kit
4. enVision ExamView Test Generator
5. Mindpoint Quiz Show
6. Turning Point Technologies

Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:
Completed By:
Comments:

Week 2

Massachusetts Performance Standards

The students will:

- 4.N.1** Exhibit an understanding of the base ten number system by reading, modeling, writing, and interpreting whole numbers to at least 100,000; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers.
- 4.N.2** Represent, order, and compare large numbers (to at least 100,000) using various forms, including expanded notation, e.g., $853 = 8 \times 100 + 5 \times 10 + 3$.
- 4.N.6** Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to the hundredths.
- 4.N.16** Round whole numbers through 100,000 to the nearest 10, 100, 1000, 10,000, and 100,000.

Common Core Massachusetts Performance Standards

The students will:

- 4.NBT.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.*
- 4.NBT.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- 4.NBT.3** Use place value understanding to round multi-digit whole numbers to any place.
- 4.NF.6** Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*

TOPIC ONE: Numeration

1. Using Money to Understand Decimals (1-5)
2. *Counting Money and Making Change (1-6)*
3. Make an Organized List (1-7)
4. Review Topic 1
5. Topic 1 Test

Objectives (Students will...)

1. **Represent** numbers with place value blocks and number lines.
2. **Write** numbers in standard, expanded, and word form.
3. **Represent** numbers in the millions using a place-value chart.
4. **Write** numbers in the expanded form, using periods to write numbers in word form.
5. **Apply** knowledge of place value to compare and order numbers.
6. **Show** how to use place value to round whole numbers.
7. **Use** place-value charts to read, write, and compare decimals in tenths and hundredths using money.
8. **Convert** a collection of coins and bills into a total amount and make change.
9. **Find and record all possible outcomes for a situation systematically.**

Essential Question

How can place value be used to write, compare, order, and round numbers?

Teacher Resources

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5. Teaching Tool Masters

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6. Turning Point Technologies

Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.
Class work: To be done on each topic/concept as needed for understanding.
Homework: To be given daily on each introduced topic as determined by the teacher.
Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.
Quiz: Formal assessments will be given as warranted by the curriculum.
Test: On the concepts involving **Numeration**

Lesson Completion Date:

Technology Used/ Date Used:
Completed By:
Comments:

Week 3

Massachusetts Performance Standards

The students will:

- 4.N.9 Select, use, and explain the commutative, associative, and identity properties of operations on whole numbers in problem situations, e.g., $37 \times 46 = 46 \times 37$, $(5 \times 7) \times 2 = 5 \times (7 \times 2)$.
- 4.N.10 Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.
- 4.N.12 Add and subtract (up to five-digit numbers) and multiply (up to three digits by two digits) accurately and efficiently.
- 4.N.14 Demonstrate in the classroom an understanding of and the ability to use the conventional algorithms for addition and subtraction (up to five-digit numbers), and multiplication (up to three digits by two digits).
- 4.P.1 Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000,
- 4.P.4 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- 4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.
- 4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- 4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.
- 4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.

TOPIC TWO: Adding and Subtracting Whole Numbers

1. Using Mental Math to Add and Subtract (2-1)
2. Estimating Sums and Differences of Whole Numbers (2-2)
3. *Missing or Extra Information* (2-3)
4. Adding Whole Numbers (2-4)
5. Subtracting Whole Numbers (2-5)
6. Subtracting Across Zeros (2-6)
7. *Draw a Picture and Write an Equation* (2-7)
8. Review Topic 2
9. Topic 2 Test

<p style="text-align: center;">Objectives (Students will...)</p> <ol style="list-style-type: none"> 1. Round whole numbers to estimate sums and differences. 2. Identify what information in a problem is not needed or not present. 3. Add numbers to hundred thousands with and without regrouping. 4. Subtract numbers to thousands with and without regrouping. 5. Subtract numbers with zeros to thousands. 6. Use a picture or diagram to translate an everyday situation into a number sentence or equation. 	<p style="text-align: center;">Essential Question</p> <p style="text-align: center;">What is the process of addition and subtraction of whole numbers?</p>
<p style="text-align: center;">Teacher Resources <i>enVisionMATH Scott Foresman-Addison Wesley ©2009</i></p> <ol style="list-style-type: none"> 6. Teacher Edition, Student Edition, and Workbooks 7. Classroom Manipulative Kit 8. Overhead Manipulative Kit 9. Math Diagnosis and Intervention System 10. Teaching Tool Masters 	<p style="text-align: center;">Media and Technology Resources <i>enVisionMATH Scott Foresman-Addison Wesley ©2009</i></p> <ol style="list-style-type: none"> 1. Electronic Digital Teacher and Student Editions 2. On-Line Classroom Resources Access Pack 3. eTools Electronic Math Manipulative Kit 4. enVision ExamView Test Generator 5. Mindpoint Quiz Show 11. Turning Point Technologies
<p style="text-align: center;">Evaluation/Activities</p> <p>Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.</p> <p>Class work: To be done on each topic/concept as needed for understanding.</p> <p>Homework: To be given daily on each introduced topic as determined by the teacher.</p> <p>Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.</p> <p>Quiz: Formal assessments will be given as warranted by the curriculum.</p> <p>Test: On the concepts involving Adding and Subtracting Whole Numbers.</p>	<p>Lesson Completion Date:</p> <p>Technology Used/ Date Used:</p> <p>Completed By:</p> <p>Comments:</p>

Massachusetts Performance Standards

The students will:

4.N.8 Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.

4.N.9 Select, use, and explain the commutative, associative, and identity properties of operations on whole numbers in problem situations, e.g., $37 \times 46 = 46 \times 37$, $(5 \times 7) \times 2 = 5 \times (7 \times 2)$.

4.N.11 Know multiplication facts through 12×12 and related division facts. Use these facts to solve related multiplication problems and compute related problems, e.g., 3×5 is related to 30×50 , 300×5 , and 30×500 .

4.N.14 Demonstrate in the classroom an understanding of and the ability to use the conventional algorithms for addition and subtraction (up to five-digit numbers), and multiplication (up to three digits by two digits).

4.P.1 Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000,

4.P.4 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (Footnote: See Glossary, Table 2.)

MA.4.NBT.5a Know multiplication facts and related division facts through 12×12 .

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

TOPIC THREE: Multiplication Meaning and Facts

1. Meaning of Multiplication (3-1)
2. Patterns for Facts (3-2)
3. Multiplication Properties (3-3)
4. 3 and 4 as Factors (3-4)
5. 6, 7, and 8 as Factors (3-5)
6. Factors 10, 11, 12 (3-6)
7. Draw a Picture and Write an Equation (3-7)
8. Review Topic 3
9. Topic 3 Test

<p style="text-align: center;">Objectives (Students will...)</p> <ol style="list-style-type: none"> 1. Recognize multiplication as repeated addition of equal groups used in arrays and comparisons. 2. Use patterns to find products with factors of 2, 5, and 9. 3. Use multiplication properties to simplify computations. 4. Use the Distributive Property to simplify multiplication problems by rewriting one of the factors as a sum of two numbers. 5. Use the Distributive Property and other regrouping properties to simplify multiplication involving 6s, 7s, 8s by rewriting one of the factors. 	<p style="text-align: center;">Essential Question</p> <p style="text-align: center;">How are arrays, patterns, and properties of multiplication understood?</p>
<p style="text-align: center;">Teacher Resources <i>enVisionMATH Scott Foresman-Addison Wesley ©2009</i></p> <ol style="list-style-type: none"> 1. Teacher Edition, Student Edition, and Workbooks 2. Classroom Manipulative Kit 3. Overhead Manipulative Kit 4. Math Diagnosis and Intervention System 5. Teaching Tool Masters 	<p style="text-align: center;">Media and Technology Resources <i>enVisionMATH Scott Foresman-Addison Wesley ©2009</i></p> <ol style="list-style-type: none"> 1. Electronic Digital Teacher and Student Editions 2. On-Line Classroom Resources Access Pack 3. eTools Electronic Math Manipulative Kit 4. enVision ExamView Test Generator 5. Mindpoint Quiz Show Turning Point Technologies
<p style="text-align: center;">Evaluation/Activities</p> <p>Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.</p> <p>Class work: To be done on each topic/concept as needed for understanding.</p> <p>Homework: To be given daily on each introduced topic as determined by the teacher.</p> <p>Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.</p> <p>Quiz: Formal assessments will be given as warranted by the curriculum.</p> <p>Test: On all concepts involving Multiplication Meaning and Facts.</p>	<p>Lesson Completion Date:</p> <p>Technology Used/ Date Used:</p> <p>Completed By:</p> <p>Comments:</p>

Week 7

Massachusetts Performance Standards

The students will:

- 4.N.8** Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.
- 4.N.11** Know multiplication facts through 12 x 12 and related division facts. Use these facts to solve related multiplication problems and compute related problems, e.g., 3 x 5 is related to 30 x 50, 300 x 5, and 30 x 500.
- 4.N.15** Demonstrate in the classroom an understanding of and the ability to use the conventional algorithm for division of up to a three-digit whole number with a single-digit divisor (with or without remainders).
- 4.P.4** Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- 4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- MA.4.NBT.5a Know multiplication facts and related division facts through 12 x 12.
- 4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

TOPIC FOUR: Division Meaning and Facts

- 1. Meanings of Division (4-1)
- 2. Relating Multiplication and Division (4-2)
- 3. Special Quotients (4-3)
- 4. Using Multiplication Facts to Find Division Facts (4-4)
- 5. Draw a Picture and Write an Equation (4-5)
- 6. Review Topic 4
- 7. Topic 4 Test

Objectives (Students will...)

- 1. **Use** and **draw** models to solve division problems.
- 2. **Use** arrays to write and complete multiplication and division fact families.
- 3. **Use** multiplication facts with 0 and 1 to learn about special division rules with 0 and 1.
- 4. **Identify** multiplication facts related to division facts in order to solve division problems.
- 5. **Draw** pictures and **write** related number sentences to solve problems.

Essential Question

Can you explain division?

Teacher Resources

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- 1. Teacher Edition, Student Edition, and Workbooks
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- 6. Turning Point Technologies

Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: On all concepts involving **Division Meaning and Facts**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 8

Massachusetts Performance Standards

The students will:

- 4.N.8** Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.
- 4.N.11** Know multiplication facts through 12 x 12 and related division facts. Use these facts to solve related multiplication problems and compute related problems, e.g., 3 x 5 is related to 30 x 50, 300 x 5, and 30 x 500.
- 4.N.17** Select and use a variety of strategies (e.g., front-end, rounding, and regrouping) to estimate quantities, measures, and the results of whole-number computations up to three-digit whole numbers and amounts of money to \$1000, and to judge the reasonableness of the answer.

Common Core Massachusetts Performance Standards

The students will:

- 4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- MA.4.NBT.5a** Know multiplication facts and related division facts through 12 x 12.
- 4.NBT.3** Use place value understanding to round multi-digit whole numbers to any place.
- 4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

TOPIC FIVE: Multiplying by 1 Digit Numbers

1. Multiplying by Multiples of 10 and 100 (5-1)
2. Using Mental Math to Multiply (5-2)
3. Using Rounding to Estimate (5-3)
4. Reasonableness to Solve Problems (5-4)
5. Using an Expanded Algorithm (5-5)

Objectives (Students will...)

1. Use basic multiplication facts and number patterns to multiply by multiples of 10 and 100.
2. Use compatible numbers and rounding to estimate solutions to multiplication problems.
3. Check for reasonableness by making sure their calculations answer the questions asked and by using estimation to make sure the calculation was performed correctly.
4. Record multiplication using an expanded algorithm.
5. Multiply 2 digits by 1 digit using paper and pencil methods.

Essential Question

What is the algorithm for multiplying 2 digits by 1 digit; and 3 digits by 1 digit?

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Evaluation/Activities

- Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.
- Class work:** To be done on each topic/concept as needed for understanding.
- Homework:** To be given daily on each introduced topic as determined by the teacher.
- Review:** All weekly concepts will be reviewed and connections to concepts should be made by the students.
- Quiz:** Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 9

Massachusetts Performance Standards

The students will:

- 4.N.8 Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.
- 4.P.4 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- 4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

TOPIC FIVE: Multiplying by 1 Digit Numbers

- 1. Multiplying 2 digits by 1 digit (5-6)
- 2. Multiplying 3 Digits by 1 Digit (5-7)
- 3. Draw a Picture and Write an Equation (5-8)
- 4. Review Topic 5
- 5. Topic 5 Test

Objectives (Students will...)

- 1. Use the standard algorithm to multiply 2 digits by 1 digit.
- 2. Use the standard algorithm to multiply 3 digits by 1 digit.
- 3. Solve problems using the problem solving strategy Draw a Picture and Write an Equation.

Essential Question

What is the algorithm for multiplying 2 digits by 1 digit; and 3 digits by 1 digit?

Teacher Resources

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Evaluation/Activities

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Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: On all concepts involving **Multiplying by 1 Digit Numbers**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 10

Massachusetts Performance Standards

The students will:

4.P.2 Use symbol and letter variables (e.g., Δ , x) to represent unknowns or quantities that vary in expressions and in equations or inequalities (mathematical sentences that use =, <, >).

4.P.3 Determine values of variables in simple equations, e.g., $4106 - \nabla = 37$, $5 = \mu + 3$, and $\square - \mu = 3$.

4.P.4 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

4.P.6 Determine how change in one variable relates to a change in a second variable, e.g., input-output tables.

Common Core Massachusetts Performance Standards

The students will:

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

TOPIC SIX: Patterns and Expressions

1. Variables and Expressions (6-1)
2. Addition and Subtraction Expressions (6-2)
3. Multiplication and Division Expressions (6-3)
4. Use objects and Reasoning to Solve Problems (6-4)
5. Review Topic 6
6. Topic 6 Test

Objectives (Students will...)

1. **Understand** how to work with variables in a table.
2. **Study** completed tables to determine a rule and write an expression.
3. **Solve** problems by using objects to show the action.

Essential Question

How are variables and expressions used to show the relationship between two quantities?

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Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: All concepts involving Patterns and Expressions

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 11 and 12

Massachusetts Performance Standards

The students will:

- 4.N.11 Know multiplication facts through 12 x 12 and related division facts. Use these facts to solve related multiplication problems and compute related problems, e.g., 3 x 5 is related to 30 x 50, 300 x 5, and 30 x 500.
- 4.N.14 Demonstrate in the classroom an understanding of and the ability to use the conventional algorithms for addition and subtraction (up to five-digit numbers), and multiplication (up to three digits by two digits).
- 4.N.17 Select and use a variety of strategies (e.g., front-end, rounding, and regrouping) to estimate quantities, measures, and the results of whole-number computations up to three-digit whole numbers and amounts of money to \$1000, and to judge the reasonableness of the answer.
- 4.P.4 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- MA.4.NBT.5a Know multiplication facts and related division facts through 12 x 12.
- 4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.
- 4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

TOPIC SEVEN: Multiplying by 2 Digit Numbers

1. Using Mental Math to Multiply 2 Digit Numbers (7-1)
2. Estimating Products (7-2)
3. Arrays and an Expanded Algorithm (7-3)
4. Multiplying 2 Digit Numbers by Multiples of 10 (7-4)
5. Multiplying 2 Digit by 2 Digit Numbers (7-5)
6. Special Cases (7-6)
7. Two Question Problems (7-7)
8. Review Topic 7
9. Topic 7 Test

Objectives (Students will...)

1. Use rounding and compatible numbers to estimate solutions to multiplication problems.
2. Use arrays and expanded algorithms to multiply two-digit numbers by two-digit numbers to find the product.
3. Use grids and patterns to multiply 2-digit numbers and multiples of 10.
4. Use partial products to multiply two-digit numbers by two-digit numbers and find the products.
5. Learn to multiply greater numbers.
6. Solve two-question problems.

Essential Question

What is the algorithm for multiplying 2 digit numbers?

Teacher Resources

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2. Classroom Manipulative Kit
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Evaluation/Activities

- Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.
- Class work:** To be done on each topic/concept as needed for understanding.
- Homework:** To be given daily on each introduced topic as determined by the teacher.
- Review:** All weekly concepts will be reviewed and connections to concepts should be made by the students.
- Quiz:** Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:
Comments:

Week 13

Massachusetts Performance Standards

The students will:

- 4.N.15** Demonstrate in the classroom an understanding of and the ability to use the conventional algorithm for division of up to a three-digit whole number with a single-digit divisor (with or without remainders).
- 4.N.17** Select and use a variety of strategies (e.g., front-end, rounding, and regrouping) to estimate quantities, measures, and the results of whole-number computations up to three-digit whole numbers and amounts of money to \$1000, and to judge the reasonableness of the answer.
- 4.P.1** Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000,
- 4.P.4** Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships

Common Core Massachusetts Performance Standards

The students will:

- 4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.
- 4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- 4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

TOPIC EIGHT: Divide by 1-Digit Divisors

1. Using Mental Math to Divide (8-1)
2. Estimating Quotients (8-2)
3. Dividing with Remainders (8-3)
4. Connecting Models and Symbols (8-4)
5. Dividing 2-Digit by 1-Digit Numbers (8-5)

Objectives (Students will...)

1. Use compatible numbers and rounding to estimate quotients.
2. **Divide** whole numbers by 1-digit divisors resulting in quotients with remainders.
3. Use place value to understand the algorithm of long division.
4. Use the algorithm to divide two-digit numbers by a one-digit number.

Essential Question

What is a process for dividing numbers by 1 digit divisors?

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Evaluation/Activities

- Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.
- Class work:** To be done on each topic/concept as needed for understanding.
- Homework:** To be given daily on each introduced topic as determined by the teacher.
- Review:** All weekly concepts will be reviewed and connections to concepts should be made by the students.
- Quiz:** Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 14, 15

Massachusetts Performance Standards

The students will:

- 4.N.7** Recognize classes (in particular, odds, evens; factors or multiples of a given number; and squares) to which a number may belong, and identify the numbers in those classes. Use these in the solution of problems.
- 4.N.13** Divide up to a three-digit whole number with a single-digit divisor (with or without remainders) accurately and efficiently. Interpret any remainders.
- 4.N.15** Demonstrate in the classroom an understanding of and the ability to use the conventional algorithm for division of up to a three-digit whole number with a single-digit divisor (with or without remainders).
- 4.P.4** Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- 4.OA.4** Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.
- 4.NBT.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.OA.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

TOPIC EIGHT: Dividing by 1-Digit Divisors

1. Dividing 3-Digit by 1-Digit Numbers (8-6)
2. Deciding Where to Start Dividing (8-7)
3. Factors (8-8)
4. Prime and Composite Numbers (8-9)
5. Multiple Step Problems (8-10)
6. Review Topic 8
7. Topic 8 Test
- 8. Benchmark Exam Topics 1-8**

Objectives (Students will...)

1. **Use** the standard algorithm to divide 3-digit numbers by 1-digit numbers.
2. **Use** the standard algorithm to divide 3-digit numbers by 1-digit numbers and properly decide where to begin dividing.
3. **Identify** the hidden question in a multistep problem. **Use** the answer to that hidden question to solve the original problem.

Essential Question

How can you divide numbers in the hundreds?

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Evaluation/Activities

- Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.
- Class work:** To be done on each topic/concept as needed for understanding.
- Homework:** To be given daily on each introduced topic as determined by the teacher.
- Review:** All weekly concepts will be reviewed and connections to concepts should be made by the students.
- Quiz:** Formal assessments will be given as warranted by the curriculum.
- Test:** On all concepts involving **Dividing by 1-digit Divisors** (except 8-8 and 8-9)

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 16

Massachusetts Performance Standards

The students will:

- 4.G.2** Describe, model, draw, compare, and classify two- and three-dimensional shapes, e.g., circles, polygons—especially triangles and quadrilaterals—cubes, spheres, and pyramids.
- 4.G.3** Recognize similar figures.
- 4.G.4** Identify angles as acute, right, or obtuse.
- 4.G.5** Describe and draw intersecting, parallel, and perpendicular lines.

Common Core Massachusetts Performance Standards

The students will:

- 4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
- 4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

TOPIC NINE : Lines, Angles, and Shapes

- 1. Points, Lines, and Planes (9-1)
- 2. Line Segments, Rays, and Angles (9-2)
- 3. Measuring Angles (9-3)
- 4. Polygons (9-4)
- 5. Triangles (9-5)

Objectives (Students will...)

- 1. **Identify** and **describe** points, lines, and planes.
- 2. **Learn** geometric terms to **describe** parts of lines and types of angles.
- 3. **Measure** and **Draw** angles.
- 4. **Identify** polygons.
- 5. **Identify** and **classify** triangles.

Essential Question

How can points, lines, line segments, and triangles be described, classified, and measured?

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.
Class work: To be done on each topic/concept as needed for understanding.
Homework: To be given daily on each introduced topic as determined by the teacher.
Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.
Quiz: Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 17

Massachusetts Performance Standards

The students will:

- 4.G.1** Compare and analyze attributes and other features (e.g., number of sides, faces, corners, right angles, diagonals, and symmetry) of two- and three-dimensional geometric shapes.
4.G.2 Describe, model, draw, compare, and classify two- and three-dimensional shapes, e.g., circles, polygons—especially triangles and quadrilaterals—cubes, spheres, and pyramids.

Common Core Massachusetts Performance Standards

The students will:

- 4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
 4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

TOPIC NINE: Lines, Angles, and Shapes

1. Quadrilaterals (9-6)
2. Make and Test Generalizations (9-7)
3. Review Topic 9
4. Topic 9 Test
5. MCAS Open Response Practice

Objectives (Students will...)

6. **Identify** quadrilaterals.
7. **Solve** problems by making and testing generalizations.

Essential Question

What is the process of identifying and classifying polygons?

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.
Class work: To be done on each topic/concept as needed for understanding.
Homework: To be given daily on each introduced topic as determined by the teacher.
Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.
Quiz: Formal assessments will be given as warranted by the curriculum.
Test: On all concepts involving **Lines, Angles, and Shapes**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 18

Massachusetts Performance Standards

The students will:

- 4.N.3** Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.
- 4.N.4** Select, use, and explain models to relate common fractions and mixed numbers ($1/2$, $1/3$, $1/4$, $1/5$, $1/6$, $1/8$, $1/10$, $1/12$, and $1\frac{1}{2}$), find equivalent fractions, mixed numbers, and decimals, and order fractions.
- 4.P.4** Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- 4.NF.1** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
- 4.NF.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
- 4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

TOPIC TEN: Understanding Fractions

1. Regions and Sets (10-1)
2. Fractions and Division (10-2)
3. Estimating Fractional Amounts (10-3)
4. Equivalent Fractions (10-4)
5. Fractions in Simplest Form (10-5)

Objectives (Students will...)

1. **Identify** and **draw** fractional parts of a region and a set.
2. **Divide** sets to find fractional parts.
3. **Describe** and **compare** fractional parts of whole objects and sets.
4. **Estimate** fractional parts of regions and sets, and for points on a number line.
5. **Use** models and objects to show equivalent fractions.

Essential Question

How do you represent, write, and compare fractions?

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 19

Massachusetts Performance Standards

The students will

- 4.N.3** Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.
- 4.N.4** Select, use, and explain models to relate common fractions and mixed numbers ($1/2$, $1/3$, $1/4$, $1/5$, $1/6$, $1/8$, $1/10$, $1/12$, and $1^{1/2}$), find equivalent fractions, mixed numbers, and decimals, and order fractions.
- 4.P.4** Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships, notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

- 4.NF.1** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
- 4.NF.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
- 4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

TOPIC TEN: Understanding Fractions

1. Improper Fraction and Mixed Numbers (10-6) (2 days if needed)
2. Comparing Fractions (10-7)
3. Ordering Fractions (10-8)
4. Problem Solving/Writing to Explain (10-9)
5. Review Topic 10
6. Topic 10 Test

Objectives (Students will...)

1. **Express** equivalent fractions in simplest form.
2. **Identify** and **write** mixed numbers as improper fractions and improper fractions as mixed numbers.
3. **Use** benchmark fractions to compare fractions with unlike denominators.

Essential Question

How do you represent, write, and compare fractions?

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 20

Massachusetts Performance Standards

The students will:

- 4.N.18** Use concrete objects and visual models to add and subtract common fractions.
- 4.N.3** Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.
- 4.N.4** Select, use, and explain models to relate common fractions and mixed numbers ($1/2$, $1/3$, $1/4$, $1/5$, $1/6$, $1/8$, $1/10$, $1/12$, and $1\frac{1}{2}$), find equivalent fractions, mixed numbers, and decimals, and order fractions.
- 4.N.5** Identify and generate equivalent forms of common decimals and fractions less than one whole (halves, quarters, fifths, and tenths).
- 4.N.6** Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to the hundredths

Common Core Massachusetts Performance Standards

The students will:

- 4.NF.3a** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- 4.NF.3d** Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
- 3.NF.1** Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
- 4.NF.1** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
- 4.NF.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
- 4.NF.5** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

TOPIC ELEVEN: Adding and Subtracting Fractions

1. Adding and Subtracting Fractions with Like Denominators (11-1)
2. Adding Fractions with Unlike Denominators (11-2)
3. Subtracting Fractions with Unlike Denominators (11-3)
4. Draw a Picture and Write an Equation to solve a problem (11-4)
5. Review Topic 11
6. Topic 11 Test

<p style="text-align: center;">Objectives (Students will...)</p> <ol style="list-style-type: none"> 1. Add and subtract fractions with like denominators using models and paper and pencil. 2. Add fractions with unlike denominators using models and paper and pencil. 3. Understand how to subtract fractions with unlike denominators. 4. Draw a picture and write an equation to solve a problem. 5. Use models and place-value charts to represent decimals to hundredths. 6. Read and write decimals in expanded, standard, and word form. 7. Use greater-than and less-than symbols to order decimal numbers. 	<p style="text-align: center;">Essential Question</p> <p style="text-align: center;">What is the process for adding and subtracting fractions? How do decimal place values relate to whole number place values?</p>
<p style="text-align: center;">Teacher Resources <i>enVisionMATH Scott Foresman-Addison Wesley ©2009</i></p> <ol style="list-style-type: none"> 1. Teacher Edition, Student Edition, and Workbooks 2. Classroom Manipulative Kit 3. Overhead Manipulative Kit 4. Math Diagnosis and Intervention System 5. Teaching Tool Masters 	<p style="text-align: center;">Media and Technology Resources <i>enVisionMATH Scott Foresman-Addison Wesley ©2009</i></p> <ol style="list-style-type: none"> 1. Electronic Digital Teacher and Student Editions 2. On-Line Classroom Resources Access Pack 3. eTools Electronic Math Manipulative Kit 4. enVision ExamView Test Generator 5. Mindpoint Quiz Show 6. Turning Point Technologies
<p>Evaluation/Activities</p> <p>Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.</p> <p>Class work: To be done on each topic/concept as needed for understanding.</p> <p>Homework: To be given daily on each introduced topic as determined by the teacher.</p> <p>Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.</p> <p>Quiz: Formal assessments will be given as warranted by the curriculum.</p> <p>Test: On concepts involving Adding and Subtracting Fractions.</p>	<p>Lesson Completion Date:</p> <p>Technology Used/ Date Used:</p> <p>Completed By:</p> <p>Comments:</p>

Week 21 and 22

Massachusetts Performance Standards

The students will:

- 4.N.3** Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.
- 4.N.4** Select, use, and explain models to relate common fractions and mixed numbers ($1/2$, $1/3$, $1/4$, $1/5$, $1/6$, $1/8$, $1/10$, $1/12$, and $1\frac{1}{2}$), find equivalent fractions, mixed numbers, and decimals, and order fractions.
- 4.N.5** Identify and generate equivalent forms of common decimals and fractions less than one whole (halves, quarters, fifths, and tenths).
- 4.N.6** Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to the hundredths

Common Core Massachusetts Performance Standards

The students will:

- 3.NF.1** Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
- 4.NF.1** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
- 4.NF.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
- 4.NF.5** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

TOPIC TWELVE: Understanding Decimals

- 1. Decimal Place Value (12-1)
- 1. Comparing and Ordering Decimals (12-2)
- 2. Fractions and Decimals (12-3)
- 3. Fractions and Decimals on the Number Line (12-4)
- 4. Mixed Numbers and Decimals on the Number Line (12-5)
- 5. Draw a Picture to Solve a Problem (12-6) and
- 6. Review Topic 12
- 7. Topic 12 Test
- 8. Benchmark Exam Topics 1-12**

Objectives (Students will...)

- 1. **Use** models and place-value charts to compare decimals to hundredths.
- 2. **Understand** how to write fractions as decimals and decimals as fraction.
- 3. **Learn** to locate and name fractions and decimals on the number line.
- 4. **Understand** how to graph decimals and mixed numbers on the number line.
- 5. **Solve** problems using the strategy Draw a Picture.

Essential Question

What is the relationship between fractions and decimals?

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: On all concepts involving **Operations with Decimals.**

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 23 and 24

Massachusetts Performance Standards

The students will:

- 4.N.6** Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to the hundredths.
- 4.N.10** Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.
- 5.N.12** Accurately and efficiently add and subtract whole numbers and positive decimals. Multiply and divide (using double-digit divisors) whole numbers. Multiply positive decimals with whole numbers.
- 6.N.13** Accurately and efficiently add, subtract, multiply, and divide (with double-digit divisors) whole numbers and positive decimals.

Common Core Massachusetts Performance Standards

The students will:

- 4.NF.6** Use decimal notation for fractions with denominators 10 or 100.
- 4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- 4.MD.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

TOPIC THIRTEEN: Operations with Decimals

- 1. Rounding Decimals (13-1)
- 2. Estimating Sums and Differences of Decimals (13-2)
- 3. Adding and Subtracting Decimals Using Grids (13-3)
- 4. Adding and Subtracting Decimals (13-4)
- 5. *Multiplying a Whole Number by a Decimal (13-5)*
- 6. *Dividing a Decimal by a Whole Number (13-6)*
- 7. Try, Check, and Revise to solve problems (13-7)
- 8. Review Topic 13
- 9. Topic 13Test

Objectives (Students will...)

- 1. **Round** two-place decimal numbers to one place or to the nearest whole number.
- 2. **Round** decimal numbers to estimate sums and differences.
- 3. **Add** and **Subtract** decimals in tenths and hundredths using models.
- 4. **Estimate** and **compute** the sum or difference of whole numbers and positive decimals to two places.
- 5. **Try, check,** and if needed, **revise** the solution, following the same method until the correct solution is determined via checking.

Essential Question

What is the process for adding and subtracting decimals in tenths and hundredths place?

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- 2. Classroom Manipulative Kit
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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: On all concepts involving **Understanding Decimals**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 25 and 26

Massachusetts Performance Standards

The students will:

4.M.1 Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.

4.M.4 Estimate and find area and perimeter of a rectangle, triangle, or irregular shape using diagrams, models, and grids or by measuring.

Common Core Massachusetts Performance Standards

The students will:

4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example: Know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36)*

4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor*

TOPIC FOURTEEN: Area and Perimeter

1. Understanding Area (14-1) and
2. Area of Squares, Rectangles (14-2)
3. Understanding Area of Irregular Shapes (14-3)
4. Area of Parallelograms (14-4)
5. Area of Triangles (14-5)
6. Perimeter (14-6)
7. Same Perimeter, Different Area (14-7)
8. Same Area, Different Perimeter (14-8)
9. Solve a Simpler Problem and Make a Table (14-9)
10. Review Topic 14
11. Topic 14 Test

Objectives (Students will...)

1. **Measure** the area of a figure by counting square units and using a formula.
2. **Find** the area of different shapes.
3. **Find** the perimeter of a polygon by adding the lengths of the sides or by using the formula.
4. **Compare** different rectangles to discover the changes in area and perimeter.
5. **Break** a problem into smaller pieces and **find** a pattern to fit.

Essential Question

What is the process for finding area and perimeter with and without the formulas?

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Evaluation/Activities**Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.**Class work:** To be done on each topic/concept as needed for understanding.**Homework:** To be given daily on each introduced topic as determined by the teacher.**Review:** All weekly concepts will be reviewed and connections to concepts should be made by the students.**Quiz:** Formal assessments will be given as warranted by the curriculum.**Test:** On all concepts involving **Area and Perimeter**.**Lesson Completion Date:****Technology Used/ Date Used:****Completed By:****Comments:**

Week 27

Massachusetts Performance Standards

The students will:

- 4.P.1** Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000,
- 4.G.1** Compare and analyze attributes and other features (e.g., number of sides, faces, corners, right angles, diagonals, and symmetry) of two- and three-dimensional geometric shapes.
- 4.G.2** Describe, model, draw, compare, and classify two- and three-dimensional shapes, e.g., circles, polygons—especially triangles and quadrilaterals—cubes, spheres, and pyramids. :
- 4.G.3** Recognize similar figures.
- 4.M.1** Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.

Common Core Massachusetts Performance Standards

The students will:

- 4.OA.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*
- 4.G.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
- 4.MD.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
- 4.MD.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

TOPIC FIFTEEN: Solids

- 1. Solids (15-1)
- 2. Views of Solids and Nets (15-2)
- 3. Views of Solids: Perspective (15-3)
- 4. Volume (15-4)
- 5. Problem Solving/Look for a Pattern (15-5)
- 6. Review Topic 15
- 7. Topic 15 Test

Objectives (Students will...)

- 1. **Describe** and **classify** solids.
- 2. **Use** a two-dimensional shape to represent a three-dimensional object.
- 3. **Interpret** views of solids as seen from different perspectives.
- 4. **Measure** the volume of a solid by counting cubic units or by using a formula.
- 5. **Recognize** patterns and be able to continue the patterns.

Essential Question

How can solid figures be described and classified?

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<p style="text-align: center;">Evaluation/Activities</p> <p>Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available. Class work: To be done on each topic/concept as needed for understanding. Homework: To be given daily on each introduced topic as determined by the teacher. Review: All weekly concepts will be reviewed and connections to concepts should be made by the students. Quiz: Formal assessments will be given as warranted by the curriculum. Test: On all concepts involving Solids.</p>	<p>Lesson Completion Date:</p> <p>Technology Used/ Date Used:</p> <p>Completed By:</p> <p>Comments:</p>

Week 28

Massachusetts Performance Standards

Students will:

- 4.M.1 Demonstrates an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.
- 4.M.2** Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.
- 4.M.3** Identify time to the minute on analog and digital clocks using a.m. and p.m. Compute elapsed time using a clock (e.g., hours and minutes since...) and using a calendar (e.g., days since...).
- 4.P.5** Solve problems involving proportional relationships, including unit pricing (e.g., four apples cost 80¢, so one apple costs 20¢) and map interpretation (e.g., one inch represents five miles, so two inches represent ten miles).

Common Core Massachusetts Performance Standards

The students will:

- 4.MD.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
- 4.MD.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
- 7.RP.2** Recognize and represent proportional relationships between quantities.

TOPIC SIXTEEN: Measurement, Time, and Temperature

- 1. Using Customary Units of Length (16-1) *
- 2. Using Customary Units of Capacity (16-2) *
- 3. Using Customary Units of Weight (16-3) *
- 4. Changing Customary Units (16-4)
- 5. Using Metric Units of Length (16-5) *

Objectives (Students will...)

- 1. **Estimate** and **measure** length.
- 2. **Estimate** fluently with customary units of capacity and weight.
- 3. **Compare** the relative sizes of capacity measurements.
- 4. **Convert** between customary units.
- 5. **Compare** several unit of time and **convert** from one unit to another.
- 6. **Find** the difference in time using elapsed time.

Essential Question

**How can the volume of solid figures be found?
How is the customary system of measurement used?**

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- 2. Classroom Manipulative Kit
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- 6. *Questions Correlation: Using Customary Units of Length (16-1) and Changing Customary Units (16-4: 4, 5, 16, 17, 19, 22, 24, 26, 28, 29, 35)
- 6. *Questions Correlation: Using Customary Units of Capacity (16-2) and Changing Customary Units (16-4: 2, 6, 7, 8, 12, 13, 14, 15, 20, 21, 23, 27, 28)
- 7. *Questions Correlation: Using Customary Units of Weight (16-3) and Changing Customary Units (16-4: 1, 3, 18, 25, 27, 31, 36, 37)
- 8. *Questions Correlation: Using Metric Units of Length (16-5) and Changing Metric Units (16-8: 2, 3, 4, 5, 8, 12, 15, 17, 18, 19, 21, 22, 25, 27, 28, 30, 31, 36)

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 29 and 30

Massachusetts Performance Standards

The students will:

- 4.M.1** Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.
- 4.M.5** Identify and use appropriate metric and English units and tools (e.g., ruler, angle ruler, graduated cylinder, thermometer) to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.

Common Core Massachusetts Performance Standards

The students will:

- 4.MD.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example: Know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36),*
- 4.MD.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
- 4.MD.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example: Know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36),*

TOPIC SIXTEEN: Measurement, Time, and Temperature

1. Using Metric Units of Capacity (16-6) *
2. Using Metric Units of Mass (16-7) *
3. Changing Metric Units (16-8)
4. Units of Time (16-9)
5. Elapsed Time (16-10)
6. Temperature (16-11)
7. Work Backwards to Solve a Problem (16-12)
8. Review Topic 16
9. Topic 16 Test

Objectives (Students will...)

1. **Estimate** and **measure** length.
2. **Estimate** fluently with metric units of capacity and weight.
3. **Convert** between metric units.
4. **Measure** temperature in Fahrenheit and Celsius.
5. **Solve** problems that require finding the original times, measurements, or quantities that lead to a result that is given.

Essential Question

How is the metric system of measurement used?

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6. *Questions Correlation:Using Metric Units of Capacity (16-6) and Changing Metric Units (16-8: 4, 13, 23, 24, 38)
7. *Questions Correlation:Using Metric Units of Mass (16-7) and Changing Metric Units (16-8: 1, 7, 14, 16, 20, 26, 29, 34)

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Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.

Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: On all concepts involving **Measurement, Time, and Temperature.**

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 31

Massachusetts Performance Standards

The students will:

- 4.G.6** Using ordered pairs of numbers and/or letters, graph, locate, identify points, and describe paths (first quadrant).
- 4.D.1** Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.
- 4.D.2** Match a representation of a data set such as lists, tables, or graphs (including circle graphs) with the actual set of data.
- 4.D.3** Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.

Common Core Massachusetts Performance Standards

The students will:

- 5.G.1** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 3.MD.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
- 4.MD.4** Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

TOPIC SEVENTEEN: Data and Graphs

1. Data from Surveys (17-1)
2. Interpreting Graphs (17-2)
3. Line Plots (17-3)
4. Ordered Pairs (17-4)
5. Line Graphs (17-5)
6. Mean (17-6)

Objectives (Students will...)

1. **Design** and **Use** a survey with a sample size that allows accurate predictions.
2. **Use** bar graphs to display data.
3. **Learn** and **understand** how to draw line plots, interpret points, and recognize outliers.
4. **Locate** points on a coordinate plane using ordered pairs.
5. **Use** line graphs to see changes in data over time.

Essential Question

How do you plot and read data on graphs?

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<p style="text-align: center;">Evaluation/Activities</p> <p>Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available. Class work: To be done on each topic/concept as needed for understanding. Homework: To be given daily on each introduced topic as determined by the teacher. Review: All weekly concepts will be reviewed and connections to concepts should be made by the students. Quiz: Formal assessments will be given as warranted by the curriculum.</p>	<p>Lesson Completion Date:</p> <p>Technology Used/ Date Used:</p> <p>Completed By:</p> <p>Comments:</p>

Week 32

Massachusetts Performance Standards

The students will:

- 4.D.1** Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.
- 4.D.2** Match a representation of a data set such as lists, tables, or graphs (including circle graphs) with the actual set of data.
- 4.D.3** Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.

Common Core Massachusetts Performance Standards

The students will:

- 3.MD.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
- 4.MD.4** Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

TOPIC SEVENTEEN: Data and Graphs

- 1. Median, Mode, and Range (17-7)
- 2. *Steam and Leaf Plot* (17-8)
- 3. Reading Circle Graphs (17-9)
- 4. Problem Solving/Make a graph (17-10)
- 5. Review Topic 17
- 6. Topic 17 Test

Objectives (Students will...)

- 1. **Calculate** the mean of a collection of values.
- 2. **Identify** the mode, median, and range for numerical data sets.
- 3. **Use** stem-and-leaf plots to **organize** data by place value.
- 4. **Use** circle graphs to **show** parts of a whole.
- 5. **Make** and **use** graphs to **display** data and solve problems.

Essential Question

How do you find mean, median, mode, and range of a given set of data?

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Evaluation/Activities

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Class work: To be done on each topic/concept as needed for understanding.
Homework: To be given daily on each introduced topic as determined by the teacher.
Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.
Quiz: Formal assessments will be given as warranted by the curriculum.
Test: On all concepts involving **Data and Graphs**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 33

Massachusetts Performance Standards

The students will:

4.P.2 Use symbol and letter variables (e.g., Δ , x) to represent unknowns or quantities that vary in expressions and in equations or inequalities (mathematical sentences that use =, <, >).

4.P.4 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.

Common Core Massachusetts Performance Standards

The students will:

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (*Footnote: See Glossary, Table 2.*)

4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.

TOPIC EIGHTEEN: Equations

1. Equal or Not Equal (18-1)
2. Solving Addition and Subtraction Equations (18-2)
3. Solving Multiplication and Division Equations (18-3)
4. Understanding Inequalities (18-4)
5. Problem Solving/Work Backwards (18-5)
6. Review Topic 18
7. Topic 18 Test

Objectives (Students will...)

1. **Learn** and **understand** the properties of equality.
2. **Use** all operations to **solve** equations.
3. **Solve** an inequality by finding all the values that make it true.
4. **Solve** problems that require finding the original times, measurements, or quantities that led to a given result.

Essential Question

How can you find and understand the solution to equations and inequalities?

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Evaluation/Activities

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Class work: To be done on each topic/concept as needed for understanding.

Homework: To be given daily on each introduced topic as determined by the teacher.

Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.

Quiz: Formal assessments will be given as warranted by the curriculum.

Test: On all concepts involving **Equations**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 34 and 35

Massachusetts Performance Standards

The students will:

- 4.G.7** Describe and apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent.
- 4.G.3** Recognize similar figures.
- 4.G.8** Identify and describe line symmetry in two-dimensional shapes.

Common Core Massachusetts Performance Standards

The students will:

- 8.G.2** Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
- 4.G.3** Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

TOPIC NINETEEN: Transformations, Congruence, and Symmetry

- 1. Translations (19-1)
- 2. Reflections (19-2)
- 3. Rotations (19-3)
- 4. Congruent Figures (19-4)
- 5. Line Symmetry (19-5)
- 6. Rotational Symmetry (19-6)
- 7. Problem Solving/Draw a Picture (19-7)
- 8. Review Topic 19
- 9. Topic 19 Test

Objectives (Students will...)

- 1. **Identify** translations, reflections, and rotations of plane figures.
- 2. **Use** transformations to see if two plane figures are congruent.
- 3. **Determine** if a plane figure has line symmetry and, if so, how many lines of symmetry it has.
- 4. **Identify** rotational symmetry and **determine** an angle measure to describe a rotation.
- 5. **Determine** when two shapes are similar and **use** pictures to visualize similarity.

Essential Question

**How can we prove congruence by translating, rotating, and reflecting plane figures?
How can you explain symmetry?**

Teacher Resources

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- 1. Teacher Edition, Student Edition, and Workbooks
- 2. Classroom Manipulative Kit
- 3. Overhead Manipulative Kit
- 4. Math Diagnosis and Intervention System
- 5. Teaching Tool Masters

Media and Technology Resources

enVisionMATH Scott Foresman-Addison Wesley ©2009

- 1. Electronic Digital Teacher and Student Editions
- 2. On-Line Classroom Resources Access Pack
- 3. eTools Electronic Math Manipulative Kit
- 4. enVision ExamView Test Generator
- 5. Mindpoint Quiz Show
- 6. Turning Point Technologies

Evaluation/Activities

Lecture/Demonstration: Each concept/topic will be introduced by the teacher using any resources that are available.
Class work: To be done on each topic/concept as needed for understanding.
Homework: To be given daily on each introduced topic as determined by the teacher.
Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.
Quiz: Formal assessments will be given as warranted by the curriculum.
Test: On all concepts involving **Transformations, Congruence, and Symmetry**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

Week 36

Massachusetts Performance Standards

The students will:

- 4.D.4** Represent the possible outcomes for a simple probability situation, e.g., the probability of drawing a red marble from a bag containing three red marbles and four green marbles.
- 4.D.5** List and count the number of possible combinations of objects from three sets, e.g., how many different outfits can one make from a set of three shirts, a set of two skirts, and a set of two hats?
- 4.D.3** Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.
- 4.D.6** Classify outcomes as certain, likely, unlikely, or impossible by designing and conducting experiments using concrete objects such as counters, number cubes, spinners, or coins.

Common Core Massachusetts Performance Standards

The students will:

- 7.SP.7** Investigate chance processes and develop, use, and evaluate probability models. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- 7.SP.5** Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- 4.MD.4** Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*
- 7.SP.5** Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

TOPIC TWENTY: Probability

- 1. Finding Combinations (20-1)
- 2. Outcomes and Tree Diagrams (20-2)
- 3. Writing Probability as a Fraction (20-3)
- 4. Use Reasoning to Solve Problems (20-4)
- 5. Review Topic 20
- 6. Topic 20 Test
- 7. Benchmark Exam Topics 1-20**

Objectives (Students will...)

- 1. Use objects and pictures to count combinations of data or objects in a problem.
- 2. **Represent** and **count** the number of outcomes with a tree diagram.

Essential Question

How do you use probability to predict outcomes?

Teacher Resources

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Review: All weekly concepts will be reviewed and connections to concepts should be made by the students.
Quiz: Formal assessments will be given as warranted by the curriculum.
Test: On all concepts involving **Probability**.

Lesson Completion Date:

Technology Used/ Date Used:

Completed By:

Comments:

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June 2011