

## **COURSE OF STUDY MATHEMATICS**

**Name of Course:** Fundamentals 2

**Length of Course:** 180 Days

**Course Number:** Math 301

**Type of Offering:** General

**Grade Level:** 10

**Credit Value:** 1 credit

**Prerequisite/s:** Fundamentals 1

**Minutes:** 7200

### **COURSE DESCRIPTION:**

Students who complete this course are well prepared for further work in math. They will have the skills needed to work a variety of problem types. They are flexible in writing equations and practiced in attending to details. They have successful experiences with problem solving through work ethic and skill.

### **TEXBOOK/S (if applicable)**

**Title:** Connecting Math Concepts Level F

**Publisher:** SRA/McGraw-Hill

**Copyright:** 2003

### **OTHER RESOURCES:** Calculator and Ruler

Protractor, Colored pencils, dice,

Scissors, string, paper clips, copies of graphs and figures

Computer Software Applications

Internet-Based Applications

7/28/14

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 1-10

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>MA.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems                      2.1.8.G Represent and use numbers in equivalent forms.</p> <p>M8.B.2.3 Use, describe and/or develop procedures to determine measures of perimeter, circumference, area, surface area, and/or volume</p> <p>2.3.8.D Estimate use and describe measures of distance, rate, perimeter, are, volume, weight, mass and angles</p>	<p>Mixed numbers                      Equivalent fractions                      Fraction Review                      Rewriting equations with an unknown</p> <p>Perimeter of polygons                      Area of rectangles</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 1-10

Grade Level: 10  
 Instructional Time: 720 minutes

<b>Anchor &amp; Academic Standard (Eligible Content)</b>	<b>Content</b>	<b>Teaching Method(s)</b>	<b>Materials &amp; Resources</b>	<b>Assessment</b>
MA.2 Understand the meaning of operations, use operations and understand how they relate to each other. MA.3 Compute accurately and fluently and make reasonable estimates. 2.2.8.B Add, subtract, multiply and divide different kinds and forms of rational numbers including integers, decimals, fractions, percents and proper and improper fractions	Finding missing factors Fraction Review Fraction operations Whole number operations- problem solving	-Co-teaching -Small group instruction -Direct Instruction -Guided Practice -Brainstorming -Practice and application	--Textbook- <u>Connecting Math Concepts</u> SRA, 2003 -Independent black line masters -Teacher Generated Materials -Mastery Tests -Calculator -Internet-Based Applications	-Homework -Book Tests -Test Remedies -Quizzes -Teacher Observations

7/28/14

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 11-20

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>MA.2 Understand the meaning of operations, use operations and understand how they relate to each other.</p> <p>MA.3 Compute accurately and fluently and make reasonable estimates.</p> <p>2.2.8.B Add, subtract, multiply and divide different kinds and forms of rational numbers including integers, decimals, fractions, percents and proper and improper fractions</p> <p>M8.B.2.3 Use, describe and/or develop procedures to determine measures of perimeter, circumference, area, surface area, and/or volume</p> <p>2.3.8.D Estimate use and describe measures of distance, rate, perimeter, are, volume, weight, mass and angles</p>	<p>Finding missing factors                      Fraction Review                      Fraction operations                      Whole number operations-                      problem solving</p> <p>Find the area of a triangle.</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 11-20

Grade Level: 10  
 Instructional Time: 720 minutes

<b>Anchor &amp; Academic Standard (Eligible Content)</b>	<b>Content</b>	<b>Teaching Method(s)</b>	<b>Materials &amp; Resources</b>	<b>Assessment</b>
M11.A.2.1 Apply ratio and/or proportion in problem-solving situations 2.31.8.D Apply ratio and proportion to mathematical problem situations	Refer to a word problem to write a ratio equation and solve Rewrite a fraction that refers to related units.	-Co-teaching -Small group instruction -Direct Instruction -Guided Practice -Brainstorming -Practice and application	--Textbook- <u>Connecting Math Concepts</u> SRA, 2003 -Independent black line masters -Teacher Generated Materials -Mastery Tests -Calculator -Internet-Based Applications	-Homework -Book Tests -Test Remedies -Quizzes -Teacher Observations

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TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 21-30

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>MA.2 Understand the meaning of operations, use operations and understand how they relate to each other.</p> <p>MA.3 Compute accurately and fluently and make reasonable estimates.</p> <p>2.2.8.B Add, subtract, multiply and divide different kinds and forms of rational numbers including integers, decimals, fractions, percents and proper and improper fractions</p> <p>MA.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems</p> <p>2.1.8.G Represent and use numbers in equivalent forms.</p>	<p>Work a multiplication problem that refers to a fraction or percent of a value.</p> <p>Work a long division problem that has a two-digit divisor and a two-digit quotient</p> <p>Work an inverse-operation problem, part of which refers to an operation without numbers.</p> <p>Write a mixed number and unit name for a description of related units.</p> <p>Work a mixed set of problems, some of which require a ratio table.</p> <p>Work a division problem in which both the dividend and divisor end in one or more zeros.</p> <p>Work a mixed set of inverse-operation problems.</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 21-30

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>M11.C.1.1 Identify and or use parts of circles and segments associated with circles.</p> <p>M11.A.2.1 Apply ratio and/or proportion in problem-solving situations</p> <p>2.1.8.D Apply ratio and proportion to mathematical problem situations</p>	<p>Work a mixed set of problems to find either the circumference or the diameter of circles.</p> <p>Determine whether a word problem can be solved by multiplication. Use shortcuts to work a mixed set of division problems.</p> <p>Construct an equation that shows related units based on a question.</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 31-40

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>MA.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems                      2.1.8.G Represent and use numbers in equivalent forms.</p> <p>M11.C.1.1 Identify and or use parts of circles and segments associated with circles.</p> <p>M8.B.2.3 Use, describe and/or develop procedures to determine measures of perimeter, circumference, area, surface area, and/or volume</p> <p>2.3.8.D Estimate use and describe measures of distance, rate, perimeter, are, volume, weight, mass and angles</p>	<p>Make a fraction number family for a statement that compares two values.</p> <p>Work a multiplication problem that tells about each like item and the number of items.</p> <p>Convert a fraction into the equivalent fraction that shows related units.</p> <p>Find the area and circumference of a circle.</p> <p>Find the area of a complex figure shown on the coordinate system.</p> <p>Work a mixed set of multi-step problems that refer to area, perimeter and tax.</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>



TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 41-50

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
2.9.11.I Model situations geometrically to formulate and solve problems.  2.9.11.G Solve problems using analytic geometry.	Given a set of common polygons, write the names.  Work a mixed set of items that refer to angles and polygons.	-Co-teaching -Small group instruction  -Direct Instruction  -Guided Practice  -Brainstorming  -Practice and application	--Textbook- <u>Connecting Math Concepts</u> SRA, 2003 -Independent black line masters -Teacher Generated Materials -Mastery Tests -Calculator -Internet-Based Applications	-Homework -Book Tests -Test Remedies -Quizzes -Teacher Observations

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TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 51-60

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>M8.B.2.3 Use, describe and/or develop procedures to determine measures of perimeter, circumference, area, surface area, and/or volume</p> <p>MA.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems</p> <p>2.1.8.G Represent and use numbers in equivalent forms.</p>	<p>Find the area of a figure with a whole.</p> <p>Find the area of a figure that has more than one whole.</p> <p>Work a multi-step problem that involves complex area.</p> <p>Work a problem that involves finding the reciprocal of a common percent value.</p> <p>Work a two step word problem that involves reciprocals.</p> <p>Work a word problem that involves multiplying a decimal by a fraction.</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
M11.C.1.1 Identify and or use parts of circles and segments associated with circles.	<p>Work a complex-area problem that involves parts of a circle.</p> <p>Work a mixed set of problems involving the area of a figure divided into equal parts.</p>	<ul style="list-style-type: none"> <li>-Co-teaching</li> <li>-Small group instruction</li> <li>-Direct Instruction</li> <li>-Guided Practice</li> <li>-Brainstorming</li> <li>-Practice and application</li> </ul>	<ul style="list-style-type: none"> <li>--Textbook- <u>Connecting Math Concepts</u> SRA, 2003</li> <li>-Independent black line masters</li> <li>-Teacher Generated Materials</li> <li>-Mastery Tests</li> <li>-Calculator</li> <li>-Internet-Based Applications</li> </ul>	<ul style="list-style-type: none"> <li>-Homework</li> <li>-Book Tests</li> <li>-Test Remedies</li> <li>-Quizzes</li> <li>-Teacher Observations</li> </ul>

TUNKHANNOCK AREA SCHOOL DISTRICT

Course: Fundamentals 2  
 Unit of Study: 61-70

Grade Level: 10  
 Instructional Time: 720 minutes

Anchor & Academic Standard (Eligible Content)	Content	Teaching Method(s)	Materials & Resources	Assessment
<p>MA.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems</p> <p>2.1.8.G Represent and use numbers in equivalent forms.</p>	<p>Add or subtract fractions with unlike denominators.</p> <p>Multiply a decimal value by 10, 100 or 1000.</p> <p>Work an addition or subtraction word problem that involves clock time.</p> <p>Convert times on a 24-hour clock to a.m. and p.m. times.</p> <p>Rewrite and work a problem with signed terms in a different order.</p> <p>Work paired addition and subtraction problems on a number line that has positive and negative values.</p> <p>Write an equation for an arrow on a signed number line.</p> <p>Absolute Value</p>	<p>-Co-teaching</p> <p>-Small group instruction</p> <p>-Direct Instruction</p> <p>-Guided Practice</p> <p>-Brainstorming</p> <p>-Practice and application</p>	<p>--Textbook-  <u>Connecting Math Concepts</u> SRA, 2003</p> <p>-Independent black line masters</p> <p>-Teacher Generated Materials</p> <p>-Mastery Tests</p> <p>-Calculator</p> <p>-Internet-Based Applications</p>	<p>-Homework</p> <p>-Book Tests</p> <p>-Test Remedies</p> <p>-Quizzes</p> <p>-Teacher Observations</p>