

Verona Public School District Curriculum Overview

2nd Grade Math



Supervisor:
Glen Stevenson

Curriculum Developed:
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Verona Public Schools
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Verona Public Schools Mission Statement:

The mission of the Verona Public Schools, the center of an engaged and supportive community, is to empower students to achieve their potential as active learners and productive citizens through rigorous curricula and meaningful, enriching experiences.

Course Description:

2nd Grade Math focuses on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

Prerequisite(s):

1st Grade Math

Standard 8: Technology Standards

8.1: Educational Technology: <i>All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.</i>	8.2: Technology Education, Engineering, Design, and Computational Thinking - Programming: <i>All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</i>
X A. Technology Operations and Concepts B. Creativity and Innovation X C. Communication and Collaboration D. Digital Citizenship E. Research and Information Fluency X F. Critical thinking, problem solving, and decision making	A. The Nature of Technology: Creativity and Innovation B. Technology and Society C. Design D. Abilities for a Technological World E. Computational Thinking: Programming

SEL Competencies and Career Ready Practices

Social and Emotional Learning Core Competencies: <i>These competencies are identified as five interrelated sets of cognitive, affective, and behavioral capabilities</i>	Career Ready Practices: <i>These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness.</i>
Self-awareness: The ability to accurately recognize one's emotions and thoughts and their influence on behavior. This includes accurately assessing one's strengths and limitations and possessing a well-grounded sense of confidence and optimism.	X CRP2. Apply appropriate academic and technical skills. CRP9. Model integrity, ethical leadership, and effective management. CRP10. Plan education and career paths aligned to personal goals.
Self-management: The ability to regulate one's emotions, thoughts, and behaviors effectively in different situations. This includes managing stress, controlling impulses, motivating oneself, and setting and working toward achieving personal and academic goals.	CRP3. Attend to personal health and financial well-being. CRP6. Demonstrate creativity and innovation. X CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.
Social awareness: The ability to take the perspective of and empathize with others from diverse backgrounds and cultures, to understand social and ethical norms for behavior, and to recognize family, school, and community resources and supports.	X CRP1. Act as a responsible and contributing citizen and employee. CRP9. Model integrity, ethical leadership, and effective management.
Relationship skills: The ability to establish and maintain healthy and rewarding relationships with diverse individuals and groups. This includes communicating clearly, listening actively, cooperating, resisting inappropriate social pressure, negotiating conflict constructively, and seeking and offering help when needed.	X CRP4. Communicate clearly and effectively and with reason. CRP9. Model integrity, ethical leadership, and effective management. CRP12. Work productively in teams while using cultural global competence.
Responsible decision making: The ability to make constructive and respectful choices about personal behavior and social interactions based on consideration of ethical standards, safety concerns, social norms, the realistic evaluation of consequences of various actions, and the well-being of self and others.	CRP5. Consider the environmental, social, and economic impact of decisions. CRP7. Employ valid and reliable research strategies. X CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP9. Model integrity, ethical leadership, and effective management.

Standard 9: 21st Century Life and Careers

9.1: Personal Financial Literacy: <i>This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.</i>	9.2: Career Awareness, Exploration & Preparation: <i>This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.</i>	9.3: Career and Technical Education: <i>This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.</i>
A. Income and Careers B. Money Management C. Credit and Debt Management D. Planning, Saving, and Investing X E. Becoming a Critical Consumer F. Civic Financial Responsibility G. Insuring and Protecting	X A. Career Awareness (K-4) B. Career Exploration (5-8) C. Career Preparation (9-12)	A. Agriculture, Food & Natural Res. B. Architecture & Construction C. Arts, A/V Technology & Comm. D. Business Management & Admin. E. Education & Training F. Finance G. Government & Public Admin. H. Health Science I. Hospital & Tourism J. Human Services K. Information Technology L. Law, Public, Safety, Corrections & Security M. Manufacturing N. Marketing X O. Science, Technology, Engineering & Math P. Transportation, Distribution & Log.

Course Materials

Core Instructional Materials: <i>These are the board adopted and approved materials to support the curriculum, instruction, and assessment of this course.</i>	Differentiated Resources: <i>These are teacher and department found materials, and also approved support materials that facilitate differentiation of curriculum, instruction, and assessment of this course.</i>
<ul style="list-style-type: none"> Pearson EnVision 2nd Grade 2012 Edition 	<ul style="list-style-type: none"> Eureka Math http://greatminds.net/maps/math/module-pdfs-v3 Building Conceptual Understanding and Fluency Through Games Grade 2 http://www.kannapolis.k12.nc.us/UserFiles/Servers/Server_1025364/File/Math/2014-2015/2nd%20Grade/2nd%20Grade%20Games%20DPI.pdf Common Core State Standards http://www.corestandards.org/Math/Content/2/introduction/ Howard County MD Grade 2 Mathematics https://hcpss.instructure.com/courses/106 Khan Academy Early Math https://www.khanacademy.org/math/early-math Extension Activities for Gifted Math Learners http://ncaigirp.ncdpi.wikispaces.net/Mathematics+K-2

Curriculum Scope & Sequence

Subject/Grade Level: MATHEMATICS/GRADE 2

Unit	Duration	Common Core Standards/ Unit Goals	Transfer Goal(s)	Enduring Understandings	Essential Questions
Addition Strategies	10 Days	<p>Standards: 2.OA.1 2.OA.2 2.NBT.5 2.NBT.9</p> <p>enVisionMath Units: 2-1 Adding 0, 1, 2 2-2 Doubles 2-3 Near Doubles 2-4 Adding in any Order 2-5 Adding Three Numbers 2-6 Making 10 to Add 9 2-7 Making 10 to Add 8 2-8 Problem Solving: Draw a Picture and Write a Number Sentence</p>	Students will be able to independently use their learning to choose an appropriate addition strategy to quickly and accurately recall basic addition facts in everyday life.	1.) Strategies can be applied to solve addition problems.	1.) What strategy to do you use when you add? Why?
Subtraction Strategies	8 Days	<p>Standards: 2.OA.1 2.OA.2 2.NBT.5 2.NBT.9</p> <p>enVisionMath Units: 3-1 Subtracting 0, 1, 2 3-2 Thinking Addition to Subtract Doubles 3-3 Thinking Addition to 10 to Subtract 3-4 Thinking Addition to 18 to Subtract 3-5 Finding the Missing Part 3-6 Problem Solving: Two-Question Problems</p>	Students will be able to independently use their learning to choose an appropriate subtraction strategy to quickly and accurately recall basic subtraction facts in everyday life.	1.) Strategies can be applied to solve subtraction problems.	1.) What strategy do you use? Why?
Understanding Addition and Subtraction	8 Days	<p>Standards: 2.OA.1 2.NBT.5</p> <p>enVisionMath Units: 1-1 Writing Addition Number Sentences 1-2 Stories About Joining 1-3 Writing Subtraction Number Sentences 1-4 Stories About Separating 1-5 Stories About Comparing 1-6 Connecting Addition and Subtraction 1-7 Problem Solving: Use Objects</p>	Students will be able to independently use their learning to determine when and how to use addition and subtraction so that they are able to solve word problems in everyday life.	1.) Addition should be used in problems about joining and subtraction should be used in problems about separating and comparing. 2.) Addition and subtraction are related.	1.) How do you know when to use addition and subtraction given a word problem? 2.) How can we write related addition and subtraction facts?
Working with Equal Groups	5 Days	<p>Standards: 2.OA.1 2.OA.4</p> <p>enVisionMath Units: 4-1 Repeated Addition 4-2 Building Arrays 4-3 Practicing Repeated Addition 4-4 Problem Solving: Draw a Picture and Write a Number Sentence</p>	Students will be able to use their learning to solve real world problems applying the technique of arrays when appropriate.	1.) Repeated addition involves joining equal groups.	1.) How can repeated addition help you to find the total number of objects?
Place Value: Numbers to 100	9 Days	<p>Standards: 2.NBT.1 2.NBT.1.a 2.NBT.2 2.NBT.3 2.NBT.4 2.NBT.5 2.NBT.6 2.NBT.9 2.OA.1</p>	Students will be able to independently use their learning to understand how a number's location in a two digit number determines its value.	1.) The placement of any number written in standard form has a meaning. 2.) Numbers can be compared using greater than, less than, and equal to.	1.) How do you know the value of a number? 2.) How can you find the number that is one before or one after another number, or the number between two other numbers?

		<p>2.OA.3</p> <p>enVisionMath Units: 5-1 Models for Tens and Ones Numbers 5-3 Using Symbols to Compare Numbers 5-4 Counting to 100 5-5 10 More or 10 Less 5-6 Even and Odd Numbers 5-7 Problem Solving: Use Data from a Chart</p>			
Mental Addition	7 Days	<p>Standards: 2.NBT.2 2.NBT.5 2.NBT.8 2.NBT.9 2.OA.1</p> <p>enVisionMath Units: 6-1 Adding Tens 6-2 Adding Ones 6-3 Adding Tens and Ones 6-4 Adding on a Hundred Chart 6-5 Adding Multiples of 10 6-6 Problem Solving: Look for a Pattern</p>	Students will be able to use their learning of mental math to find sums of two-digit numbers and create and continue patterns.	1.) Many problems can be solved by doing math mentally versus on paper?	1.) How can we solve an addition problem without writing it down?
Mental Subtraction	6 Days	<p>Standards: 2.NBT.5 2.NBT.7 2.NBT.8 2.NBT.9 2.OA.1</p> <p>enVisionMath Units: 7-1 Subtracting Tens 7-2 Finding Parts of 100 7-3 Subtracting on a Hundred Chart 7-4 Subtracting Multiples of 10 7-5 Problem Solving: Missing or Extra Information</p>	Students will be able to use their learning of mental math to find differences of two-digit numbers and create and continue patterns.	1.) Many problems can be solved by doing math mentally versus on paper?	1.) How can we solve an addition problem without writing it down?
Adding Two-Digit Numbers	10 Days	<p>Standards: 2.OA.1 2.MD.6 2.NBT.5 2.NBT.6 2.NBT.9</p> <p>enVisionMath Units: 8-1 Regrouping 10 Ones for 1 Ten 8-2 Models to Add Two- and One-Digit Numbers 8-3 Adding Two- and One-Digit Numbers 8-4 Models to Add Two-Digit Numbers 8-5 Adding Two-Digit Numbers 8-6 Adding on a Number Line 8-7 Adding More Than Two Numbers 8-8 Ways to Add 8-7 Problem Solving: Draw a Picture and Write a Number Sentence</p>	Students will be able to independently use their learning to use both mental math and paper and pencil tasks to add two-digit numbers and regroup numbers into proper place value when needed.	1.) Adding tens is like adding ones. 2.) At times regrouping is necessary. 3.) Some problems can be solved by identifying elements that repeat. 4.) Information in a problem can be showed using a diagram.	1.) How is adding tens like adding ones? 2.) When do you need to regroup? 3.) Why is it easier to draw a picture when answering a word problem? 4.) How can finding a pattern help you solve a problem?
Subtracting Two-Digit Numbers	10 Days	<p>Standards: 2.NBT.5 2.NBT.6 2.NBT.9 2.MD.6 2.OA.1</p> <p>enVisionMath Units: 9-1 Regrouping 1 Ten for 10 Ones</p>	Students will be able to independently use their learning to use both mental math and paper and pencil tasks to subtract two-digit numbers and regroup into proper place value when needed.	1.) Subtracting tens is like subtracting ones. 2.) Addition can be used to check subtraction. 3.) Some word problems have missing data and some have extra information.	1.) How is subtracting tens like subtracting ones? 2.) How can you use addition to check your subtraction? 3.) How can you determine whether there is extra information in a word problem? Or missing information? 4.) Why is it easier to draw a picture when answering a two-step word problem?

		<p>9-2 Models to Subtract Two-and One-Digit Numbers</p> <p>9-3 Subtracting Two- and One-Digit Numbers</p> <p>9-4 Models to Subtract Two-Digit Numbers</p> <p>9-5 Subtracting Two-Digit Numbers</p> <p>9-6 Subtracting on a Number Line</p> <p>9-7 Using Addition to Check Subtraction</p> <p>9-8 Ways to Subtract</p> <p>9-7 Problem Solving: Two-Question Problems</p>		<p>4.) Information in a problem can be showed using a diagram.</p>	
Place Value to 1,000	11 Days	<p>Standards:</p> <p>2.NBT.1</p> <p>2.NBT.1.a</p> <p>2.NBT.1.b</p> <p>2.NBT.2</p> <p>2.NBT.3</p> <p>2.NBT.4</p> <p>2.NBT.8</p> <p>enVisionMath Units:</p> <p>10-1 Building to 1,000</p> <p>10-2 Counting Hundreds, Tens, and Ones</p> <p>10-3 Reading and Writing Numbers to 1,000</p> <p>10-4 Changing Numbers by Hundreds and Tens</p> <p>10-5 Patterns with Numbers On Hundreds Chart</p> <p>10-6 Skip Counting by 5, 10, 100, to 1,000</p> <p>10-7 Comparing Numbers</p> <p>10-8 Ordering Numbers</p> <p>10-9 Problem Solving: Look For a Pattern</p>	<p>Students will be able to independently use their learning to understand how the location in a three-digit number determines its value.</p>	<p>1.) Our number system is based on groups of ten.</p>	<p>1.) How does understanding place value help you compare three digit numbers?</p>
Three-Digit Addition and Subtraction	11 Days	<p>Standards:</p> <p>2.NBT.7</p> <p>2.NBT.8</p> <p>2.NBT.9</p> <p>enVisionMath Units:</p> <p>11-1 Exploring Adding Three Digit Numbers</p> <p>11-2 Mental Math</p> <p>11-3 Models for Adding with Three-Digit Numbers</p> <p>11-4 Adding Three-Digit Numbers</p> <p>11-5 Exploring Subtracting Three Digit Numbers</p> <p>11-6 Mental Math: Ways to Find Missing Parts</p> <p>11-7 Models for Subtracting with Three-Digit Numbers</p> <p>11-8 Subtracting Three Digit Numbers</p> <p>11-9 Problem Solving: Use Logical Reasoning</p>	<p>Students will be able to independently use their learning to use both mental math and paper and pencil tasks to add and subtract three-digit numbers</p>	<p>1.) There is more than one way to estimate a sum/difference.</p> <p>2.) There is more than one way to do a mental calculation.</p> <p>3.) Solving three-digit add/subtraction problems can be broken down using place value starting with the ones, tens, then hundreds.</p> <p>4.) Some problems can be solved by making, reading and analyzing a graph.</p>	<p>1.) How can you estimate sums/differences of three-digit numbers?</p> <p>2.) How can you use mental math to add multiples of 100?</p> <p>3.) How can you count on or count back to find a missing part?</p> <p>4.) How can you use data from a table to create a bar graph?</p>
Geometry	12 Days	<p>Standards:</p> <p>2.G.1</p> <p>2.G.2</p> <p>2.G.3</p> <p>enVisionMath Units:</p> <p>12-1 Flat Surfaces, Vertices, and Edges</p> <p>12-2 Relating Plane Shapes to Solid Figures</p> <p>12-3 Polygons and Angles</p> <p>12-4 Making New Shapes</p> <p>12-5 Cutting Shapes Apart</p> <p>12-6 Dividing Rectangles into Equal Squares</p> <p>12-7 Whole and Equal Parts</p> <p>12-8 Problem Solving: Use Reasoning</p>	<p>Students will be able to independently use their learning to recognize that shapes and various properties of shapes will help them to recognize mathematics in the real world.</p>	<p>1.) Two and three dimensional objects can be described, classified and analyzed by their attributes.</p> <p>2.) Objects in space can be transformed in an infinite number of ways, and those transformations can be described and analyzed mathematically.</p>	<p>1.) How are attributes used to describe and classify three dimensional figures?</p> <p>2.) How can translations, reflections and rotations be used to change an object's orientation in space?</p>

Counting Money	6 Days	Standards: 2.MD.8 enVisionMath Units: 13-1 Coins 13-2 Counting Collections of Coins 13-3 Ways to Show the Same Amount 13-4 One Dollar 13-5 Problem Solving: Make an Organized List	Students will be able to independently use their learning to recognize and use standard American currency.	1.) Specific coins each have a unique value. 2.) Money amounts can usually be counted in different ways.	1.) How can the value of a coin be determined? 2.) What is the best way to count money?
Money	5 Days	Standards: 2.MD.8 2.NBT.5 2.NBT.9 enVisionMath Units: 14-1 Adding Money 14-2 Subtracting Money 14-3 Estimating Sums and Differences 14-4 Problem Solving: Try, Check, Revise	Students will be able to independently use their learning of addition and subtraction as well as money to solve real world finance problems.	1.) Different combinations of coins can make the same amounts.	1.) Is there more than one way to make the same amount of money?
Measuring Length	13 Days	Standards: 2.MD.1 2.MD.2 2.MD.3 2.MD.4 2.MD.5 enVisionMath Units: 15-1 Exploring Length 15-2 Inches 15-3 Centimeters 15-4 Inches, Feet, and Yards 15-5 Centimeters and Meters 15-6 Measuring Lengths 15-7 Adding and Subtracting in Measurement 15-8 Comparing Lengths 15-9 Problem Solving:Use Objects	Students will be able to independently use their learning to understand that objects are measurable and can be quantified using different units of measure.	1.) Attributes are measurable. 2.) The length of objects is measurable in different units. 3.) Measurements need the same unit of measure in order to be compared.	1.) How can you tell which attributes of an object can be measured? 2.) Which classroom objects can be used to approximate standard units of inches, feet, yards, centimeters and meters? 3.) How can you compare measurements?
Time, Graphs and Data	10 Days	Standards: 2.MD.7 2.MD.9 2.MD.10 enVisionMath Units: 16-1 Telling Time to Five Minutes 16-2 Telling Time Before and After the Hour 16-3 Organizing Data 16-4 Graphing Lengths 16-5 Pictographs 16-6 Problem Solving:Use a Graph	Students will be able to independently use their learning to understand that some questions can be answered by collecting and analyzing data.	1.) Time can be given in more than one way. 2.) Data can be organized in different ways. 3.) Each type of graph is most appropriate for certain types of data.	1.) Which clock do you prefer to tell time on, analog or digital? 2.) What are some ways data can be organized? 3.) How can you decide what type of graph to use once you have collected data?