



Grade 2

Math Curriculum

Oradell Public School District
Oradell, NJ

2023

The Grade 2 Math Curriculum was developed by the Oradell Math Curriculum Team and aligned with the New Jersey Student Learning Standards (NJSLS).

Born on: July 2017

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Board Policy

This revision is aligned with the New Jersey Student Learning Standards for Mathematics, the New Jersey Student Learning Standards for Computer Science and Design Thinking, the New Jersey Student Learning Standards for Career Readiness, Life Literacies, and Key Skills, and the inclusion of connections to Social-Emotional Learning Competencies.

Affirmative Action

During the development of this course of study, particular attention was paid to the elimination or exclusion of any materials which might discriminate on the basis of race, color, national origin, ancestry, age, sex, affectional or sexual orientation, gender identity or expression, marital status, familial status, genetic information, mental or physical disabilities, or in educational opportunities. Every effort has been made to uphold both the letter and spirit of Affirmative Action mandates as applied to the content, the texts and the instruction inherent in this course.

Introduction to Teaching Mathematics

For more than a decade, research studies of mathematics education in high-performing countries have concluded that mathematics education in the United States must become substantially more focused and coherent in order to improve mathematics achievement in this country. To deliver on this promise, the New Jersey Student Learning Standards (NJSLS) in Mathematics were designed to address the problem of a curriculum that is “a mile wide and an inch deep (Common Core State Standards Initiative, 2019).”

The new standards build on the best of high-quality math standards from states across the country. They also draw on the most important international models for mathematical practice, as well as research and input from numerous sources, including state departments of education, scholars, assessment developers, professional organizations, educators, parents and students, and members of the public.

The math standards provide clarity and specificity rather than broad general statements. They follow a design that not only stresses conceptual understanding of key ideas but also the organizing principles such as place value and the laws of arithmetic to structure those ideas.

In addition, the sequence of topics and performances outlined in the body of math standards respects what is known about how students learn, namely, that developing sequenced obstacles and challenges for students, absent from the insights about meaning that derive from careful study, is unwise. Therefore, the development of the standards began with research-based learning progressions detailing what is known today about how students’ mathematical knowledge, skill, and understanding develop over time. The knowledge and skills students need to be prepared for mathematics in college, career, and life are woven throughout the mathematics standards.

These standards define what students should understand and be able to do in their study of mathematics. Additionally, this curriculum is written around the Standards for Mathematical Practice. These standards describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem-solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

Teachers are required to assess understanding by asking the student to justify, in a way that is appropriate to the student’s mathematical maturity, why a particular mathematical statement is true or where a mathematical rule comes from. Mathematical understanding and procedural skill are equally important, and both are assessed by using mathematical tasks of sufficient richness. The assessments contained in this curriculum document reflect the level of rigor represented in the state-level assessments and the NJ state Model Curriculum for Math. They serve as guideposts for teachers in determining the level of preparedness

students need to reach. This curriculum document will continue to evolve as teachers plan their lessons and gather more resources to teach the units.

All About the Mathematics Curriculum

How was the curriculum developed?

The Oradell Public School District's curriculum consists of units that have been inspired by the New Jersey Student Learning Standards — Mathematics. The main professional resource teachers use is *Go Math! by Houghton Mifflin Harcourt Publishing Company*. Teachers are encouraged to collaborate to create additional lessons and formative assessments for the whole group, small-group, and individual conferences.

Each unit contains enduring understandings and essential questions with corresponding teaching points. Enduring understandings are statements summarizing important ideas and core processes that are central to math and have lasting value beyond the classroom. They synthesize what students should understand—not just know or do—as a result of studying a particular unit. Moreover, they articulate what students should “revisit” over the course of their lifetimes in relationship to the content area. Essential questions are broad questions with many answers. They encourage transfer beyond the specific skill or topic students are studying and should recur over many years to promote curriculum coherence and real-world connections. In math, a teaching point addresses both the skill and strategy that will be practiced in a given math class. The teaching points in the math curriculum are meant to build student skills over the unit and are chosen based on the assessment of combined skills.

Modifications

The modifications section at the end of each bend is meant to help guide the differentiation of the units for students with IEPs, English Language Learners, Tier 2 At-Risk students (students in Basic Skills) and Gifted and Talented students. Carol Ann Tomlinson defines differentiation as tailoring instruction to meet individual needs. Whether teachers differentiate content, process, products, or the learning environment, the use of ongoing assessment and flexible grouping makes this a successful approach to instruction. At its most basic level, differentiation consists of the efforts of teachers to respond to variance among learners in the classroom. Whenever a teacher reaches out to an individual or small group to vary his or her teaching in order to create the best learning experience possible, that teacher is differentiating instruction (Tomlinson, 2000).

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile:

1. Content: what the student needs to learn or how the student will get access to the information
2. Process: activities in which the student engages in order to make sense of, or master the content
3. Products: culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit
4. Learning environment: the way the classroom works and feels

Our Math Philosophy

We believe in a Guided Math approach to the teaching of math. We develop mathematicians to become thinkers and to develop strategies to become global citizens. We believe that students need access to real-world problems and experiences. We believe that students need time, choice, and feedback to be

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successful. Partnered with explicit instruction in mathematics content, a strategy-based curriculum promotes math behaviors and skills that contribute to strategic thinking, accurate problem solving and extending mathematical learning to new situations.

What is the Guided Math Framework?

To help teachers build capacity by expanding their repertoire of instructional strategies, many educational leaders may consider the implementation of Guided Math (Sammons, 2010 and 2013).

This framework offers a wide selection of instructional strategies from which teachers can choose - all of which engage students in challenging mathematical instruction. The flexibility of the framework permits teachers to adapt it to align with their own teaching styles and to meet the needs of their students. When implemented, Guided Math instruction may vary from week to week and from classroom to classroom (Sammons, 2013).

The components of a Guided Math approach are as follows:

- Math Warm-Ups
- Whole-Class Instruction
- Small-Group Instruction
- Math Workshop
- Math Conferences
- Assessment

Components Guided Math Workshop

Math Warm-Ups

While setting a mathematical tone for the day, Math Warm-Ups at the beginning of a day or a class period also provide valuable ongoing mathematical practice for students. Calendar board activities and Math Stretches may serve as brief Warm-Ups for students. Warm-Ups also provide opportunities for students to learn about current event connections to mathematics and to assume classroom responsibilities that reinforce mathematical skills.

Whole-Class Instruction

This more traditional instructional mode is an option for teachers to deliver mini lessons, conduct math-related read-alouds, and model mathematical thinking. Whole-Class Instruction is also valuable for Math Huddle discussions as follow-ups to Math Stretch tasks. Additionally, this format can be used for review, class mathematical games, and activating strategies. Working together in these ways is important in establishing a sense of mathematical community.

Small-Group Instruction

At the heart of the framework is Small-Group Instruction with groups in which the composition is fluid and based upon previously identified, specific instructional needs. These Small-Group lessons allow teachers to more easily differentiate instruction and to help students develop proficiency in the mathematical practices as described by the New Jersey State Learning Standards for Mathematics.

In addition, the intimate nature of Small-Group lessons enables teachers to maximize student engagement (both hands-on and minds-on), to conduct ongoing informal formative assessment, and to closely monitor understanding while students are working. Because teachers are able to respond immediately when misconceptions are observed or move forward with greater challenges when understanding is evident, instruction is more efficient than traditional whole-class lessons. In spite of the fact that these lessons are usually much shorter in duration, greater student understanding of concepts and skills is achieved.

Math Workshop

During Math Workshop, students work independently on math workstation tasks that provide practice of previously mastered concepts and skills, promote computational fluency, or challenge students to engage in mathematical investigations. Playing math games is a common component of Math Workshop, but not the only option. Paper and pencil tasks may be included, as well as tasks that require documenting mathematical thinking in math journals. Students learn to assume responsibility for working independently during Math Workshop. This allows teachers to teach small-group lessons and conduct conferences with individual students.

Math Conferences

These one-on-one conversations between a teacher and a student are important assessment and teaching tools. Students explain their mathematical thinking related to the work at hand while teachers ask clarifying questions, assess student understanding, and determine the students' next steps in learning. Specific, targeted, and brief teaching points are delivered during these conversations. Students practice mathematical communication skills as they are encouraged to self-assess their progress toward their own mathematical learning goals.

Assessment

Essential to the Guided Math framework is balanced and timely assessment, especially formative assessment. Knowing students' learning needs allows teachers to plan lessons so that students receive "just right" instruction. That may require instruction that fills gaps in knowledge and skills for some students or provides additional challenges for others. Only by knowing specific needs when learning is occurring can teachers maximize their effectiveness.

Suggested Pacing Guide for Math Grade 2

Unit	Approximate Months	Unit	Skills
1	2 months Sept-Oct	Number Sense and Place Value	Number Concepts Numbers to 1,000
2	4 months Nov-Feb	Addition and Subtraction	Basic Facts and Relationships 2-Digit Addition 2-Digit Subtraction 3-Digit Addition/Subtraction
3	2 months Mar-Apr	Measurement and Data	Money and Time Length in Customary Units Length in Metric Units Data
4	2 months May-June	Geometry and Fractions	Three-Dimensional Shapes Two-Dimensional Shapes Equal Parts of a Whole

2nd Grade Math Curriculum

Unit 1: Number Sense and Place Value

Refer to Go Math! Chapters 1-2

Unit Overview

In this unit, students will extend understanding of base-ten notation by using place value to find the values of numbers and describe numbers in different ways. Teachers will begin modeling a 2-digit number with base-ten blocks to build understanding that a 2-digit number can be named in its expanded form as the sum of its tens and ones.

Enduring Understandings

- Our number system is based on groups of ten. Whenever we get 10 in one place, we move the next greater place value.
- Place value can be used to compare and order numbers.

Essential Questions

- What number patterns are helpful in naming, reading and writing numbers to 1,000?
- What strategies can be used to compare numbers? (up to 1,000)

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferencing• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores
Benchmark Assessments
<ul style="list-style-type: none">• LinkIt! Form A
Alternative Assessments
<ul style="list-style-type: none">• Modified Unit Assessment

Standards (NJSL) Addressed in this Unit

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Operations and Algebraic Thinking 2.OA

C. Work with equal groups of objects to gain foundations for multiplication.

3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

Number and Operations in Base Ten 2.NBT

A. Understand place value.

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

a. 100 can be thought of as a bundle of ten tens — called a “hundred.”

b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

2. Count within 1000; skip-count by 5s, 10s, and 100s.

3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

B. Use place value understanding and properties of operations to add and subtract.

8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

Computer Science and Design Thinking

8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

- Solve mathematical situations together

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).

9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)

9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

PRACTICES

- CLKSP1 Act as a responsible and contributing community member and employee.
- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RI.2.4** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.

Speaking and Listening

- **SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

Language

- **L.2.3** Use knowledge of language and its conventions when writing, speaking, reading or listening

Standards for Mathematical Practice

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.3 Construct viable arguments & critique the reasoning of others.

MP.4 Model with mathematics.

MP.5 Use appropriate tools strategically

MP.6 Attend to precision.

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning.

Unit 1: Number Sense and Place Value

Number Concepts

Students will...

- Classify numbers up to 20 as even or odd.
- Write equations with equal addends to represent even numbers.
- Use place value to describe the values of digits in 2-digit numbers.
- Write 2-digit numbers in expanded form.
- Write 2-digit numbers in word form, expanded form, and standard form.
- Apply place value concepts to find equivalent representations of numbers.
- Solve problems by finding different combinations of tens and ones to represent 2-digit numbers using the strategy *find a pattern*.
- Extend counting sequences within 100, counting by 1s, 5s, and 10s.
- Extend counting sequences within 1,000, counting by 1s, 5s, 10s, and 100s.

Numbers to 1,000

Students will...

- Understand that each group of 10 tens is equivalent to 1 hundred.
- Write 3-digit numbers that are represented by groups of tens.
- Use concrete and pictorial models to represent 3-digit numbers.
- Apply place value concepts to write 3-digit numbers that are represented by pictorial models.
- Use place value to describe the values of digits in numbers to 1,000.
- Read and write 3-digit numbers in word form.
- Write 3-digit numbers in expanded form and in standard form.

- Apply place value concepts to find equivalent representations of numbers.
- Identify 10 more, 10 less, 100 more, or 100 less than a given number.
- Extend number patterns by counting on by tens or hundreds.
- Solve problems involving number comparisons by using the strategy *make a model*.
- Compare 3-digit numbers using the $>$, $=$, and $<$ symbols.
- Learn how to log into Dreambox and navigate between the different games and lessons.

Unit Specific Vocabulary

even	hundreds
odd	tens
addition sentence	ones
digits	thousand
digit	less than
pattern	more than
more	compare
fewer	= is equal to
hundred	$>$ is greater than
thousand	$<$ is less than

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

- *Go Math 2* © 2015 - Houghton Mifflin Harcourt
 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity Cards, Blackline Masters

Supplemental Materials:

- Bridges in Mathematics for intervention
- Digital Resources:
 - *Think Central*® Digital (<https://www-k6.thinkcentral.com>)
 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources
 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade 2 - eGlossary](#)
 - DreamBox
 - Bridges in Mathematics (<https://bridges.mathlearningcenter.org/>) for intervention

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.

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- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Provide frequent breaks.
- Use a problem [solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
- [Even and Odd- BrainPopJr.](#)
- [Place Value - BrainPopJr.](#)
- [Expanded Form- Khan Academy](#)
- [Identify Value of a Digit - Khan Academy](#)
- [Counting Patterns with 1,000 - Khan Academy](#)
- [Intro to Place Value - Khan Academy](#)

English Language Learners

- [Grade 2 - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Have children use a number grid to find the differences between pairs of 3-digit numbers. Then have children record their work.
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans

- Reteach activities
- Preferential Seating
- Monitor On-Task Performance
- Establish and maintain eye contact when giving oral directions
- Directions repeated and/or clarified
- Provide copy of class notes
- Homework does not impact grade in class
- Reduce homework amount
- Modify assessments
- Use of manipulatives, counters, number grid, and vocabulary picture cards

Social-Emotional Learning Competencies

- **Self-Awareness**: ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management**: ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness**: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others
 - Connections:
 - Students collaborate and help each other during math centers
- **Relationship Skills**: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions

- Incentives for individual students and small groups
- **Responsible Decision-Making:** refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

2nd Grade Math Curriculum

Unit 2: Addition and Subtraction

Refer to Go Math! Chapters 3-6

Unit Overview

In this unit, students will focus on the relationship between addition and subtraction and the importance of place value when adding and subtracting. Subtraction, like addition, is effectively addressed through modeling. Students will model with mathematics, with tools such as base-ten blocks or write equations to represent a problem situation involving subtraction. As students deepen their understanding of subtraction, they will learn multiple ways to regroup numbers prior to learning the standard algorithm. Students will also work with addition and subtraction problems in real-world contexts to help solve them. The real-world contexts help children make sense of the operations.

Enduring Understandings

- There are a variety of ways to add or subtract multi-digit numbers.
- For a given set of numbers, there are relationships that are always true called properties. Properties are the rules that govern arithmetic. (i.e. Numbers can be added in any order, numbers must be subtracted in a specified order.)
- The inverse relationship between addition and subtraction can be used to solve problems and check answers.

Essential Questions

- What are different strategies for adding and subtracting multi-digit numbers?
- How can place value be helpful in adding and/or subtracting multi-digit numbers?

Assessments

Possible Formative Assessments

- Teacher Observation
- Student Participation
- One-to-One Conferring
- Small Strategy Groups
- LinkIt! Progress Reports
- DreamBox Progress Reports

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Summative Assessments

- Chapter Quizzes & Tests
- Student Self-Reflection by Chapter
- Chapter Performance Tasks (as appropriate)
- Online Math Activity Scores

Benchmark Assessments

- LinkIt! Math Form B

Alternative Assessments

- Modified Unit Assessment
- Modified Chapter Assessment

Standards (NJSLs) Addressed in this Unit

Operations and Algebraic Thinking 2.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

B. Add and subtract within 20.

2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

C. Work with equal groups of objects to gain foundations for multiplication.

4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Number and Operations in Base Ten 2.NBT

B. Use place value understanding and properties of operations to add and subtract.

5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
6. Add up to four two-digit numbers using strategies based on place value and properties of operations.
7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
9. Explain why addition and subtraction strategies work, using place value and the properties of Operations.

Computer Science and Design Thinking

8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

- Solve mathematical situations together.

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).

9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)

9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

PRACTICES

- CLKSP1 Act as a responsible and contributing community member and employee.
- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RI.2.4** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.

Speaking and Listening

- **SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

Language

- **L.2.3** Use knowledge of language and its conventions when writing, speaking, reading or listening

Standards for Mathematical Practice

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.3 Construct viable arguments & critique the reasoning of others.

MP.4 Model with mathematics.

MP.5 Use appropriate tools strategically

MP.6 Attend to precision.

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning.

Unit 2: Addition and Subtraction

Suggested Teaching Points

Basic Facts and Relationships

Students will...

- Use doubles facts as a strategy for finding sums for near doubles facts.
- Recall sums for basic facts using properties and strategies.
- Recall sums for addition facts using the make a ten strategy.
- Find sums of three addends by applying the Commutative and Associative Properties of Addition.
- Use the inverse relationship of addition and subtraction to recall basic facts.
- Recall differences for basic facts using mental strategies.
- Find differences on a number line to develop the mental strategy of decomposing to simplify facts.
- Use bar models to represent a variety of addition and subtraction situations.
- Write equations to represent and solve a variety of addition and subtraction situations.
- Solve problems involving equal groups by using the strategy act it out.
- Write equations using repeated addition to find the total number of objects in arrays.

2-Digit Addition

Students will...

- Find a sum by breaking apart a 1-digit addend to make a 2-digit addend a multiple of 10.
- Use compensation to develop flexible thinking for 2-digit addition.
- Apply place-value concepts when using a break-apart strategy for 2-digit addition.
- Model 2-digit addition with regrouping.
- Draw quick pictures and record 2-digit addition using the standard algorithm.
- Record 2-digit addition using the standard algorithm.
- Practice 2-digit addition with and without regrouping.
- Rewrite horizontal addition problems vertically in the standard algorithm format.
- Solve problems involving 2-digit addition using the strategy *draw a diagram*.
- Represent addition situations with number sentences using a symbol for the unknown number.
- Find sums of three 2-digit numbers.
- Find sums of four 2-digit numbers.

2-Digit Subtraction

Students will...

- Break apart a 1-digit subtrahend to subtract it from a 2-digit number.
- Break apart a 2-digit subtrahend to subtract it from a 2-digit number.
- Model 2-digit subtraction with regrouping.
- Draw quick pictures and record 2-digit subtraction using the standard algorithm.
- Record 2-digit subtraction using the standard algorithm.
- Practice 2-digit subtraction with and without regrouping.
- Rewrite horizontal subtraction problems vertically in the standard algorithm format.
- Use addition to find differences.

- Solve problems involving 2-digit subtraction by using the strategy *draw a diagram*.
- Represent subtraction situations with number sentences using a symbol for the unknown number.
- Analyze word problems to determine what operations to use to solve multistep problems.

3-Digit Addition and Subtraction

Students will...

- Draw quick pictures to represent 3-digit addition.
- Apply place value concepts when using a break apart strategy for 3-digit addition.
- Record 3-digit addition using the standard algorithm with possible regrouping of ones.
- Record 3-digit addition using the standard algorithm with possible regrouping of tens.
- Record 3-digit addition using the standard algorithm with possible regrouping of both ones and tens.
- Solve problems involving 3-digit subtraction by using the strategy *make a model*.
- Record 3-digit subtraction using the standard algorithm with possible regrouping of tens.
- Record 3-digit subtraction using the standard algorithm with possible regrouping of hundreds.
- Record 3-digit subtraction using the standard algorithm with possible regrouping of both hundreds and tens.
- Record subtraction using the standard algorithm when there are zeros in the minuend.

Unit Specific Vocabulary

sum	row
sums	digit
doubles	sum
addends	addend
count on	hundred
count back	hundreds
difference	ten
differences	tens
related facts	one
bar model	ones
addition sentence	regroup
number sentence	Column
	subtract

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

- *Go Math 2* © 2015 - Houghton Mifflin Harcourt
 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity

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Annual Revision: OPS BOE Approval September 2023

Oradell Public School District GR 2 Math Curriculum

Cards, Blackline Masters

Supplemental Materials:

- Bridges in Mathematics for intervention
- Digital Resources:
 - *Think Central*® Digital (<https://www-k6.thinkcentral.com>)
 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources
 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade 2 - eGlossary](#)
 - DreamBox
 - Bridges in Mathematics (<https://bridges.mathlearningcenter.org/>) for intervention

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Provide frequent breaks.
- [Use a problem solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.

- [Doubles Facts- BrainPopJr.](#)
- [Adding with Regrouping - BrainPopJr.](#)
- [Counting On - BrainPopJr.](#)
- [Basic Addition - BrainPopJr.](#)
- [Basic Subtraction - BrainPopJr.](#)
- [Subtraction with Regrouping - BrainPopJr.](#)

English Language Learners

- [Grade 2 - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Set a writing goal for an assignment and then focus only on that goal.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Have children use a number grid to find the differences between pairs of 3-digit numbers. Then have children record their work.
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans

- Reteach activities
- Preferential Seating
- Monitor On-Task Performance
- Establish and maintain eye contact when giving oral directions
- Directions repeated and/or clarified
- Provide copy of class notes
- Homework does not impact grade in class
- Reduce homework amount
- Modify assessments
- Use of manipulatives, counters, number grid, and vocabulary picture cards

Social-Emotional Learning Competencies

- **Self-Awareness:** ability to recognize one's emotions and know one's strengths and

limitations

- Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management**: ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness**: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others
 - Connections:
 - Students collaborate and help each other during math centers
- **Relationship Skills**: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups
- **Responsible Decision-Making**: refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

2nd Grade Math Curriculum

Unit 3: Measurement and Data

Refer to Go Math! Chapters 7-10

Unit Overview

In this unit, students will work with the concepts of money and time which offer demanding problems for children to explore and solve. When they discuss situations, they will consider how hours and minutes are related, or how the values of coins are related. They will also work with the standard and Metric systems of measurement. They will choose an appropriate measuring tool that will make the measure meaningful, practice measuring by looking for the mark that represents the zero, and align the left edge of the object with the zero mark on the ruler.

Enduring Understandings

- What is the process for measuring length?
- What tools are most appropriate when measuring the length of an object?
- What are the relationships of time?
- How can money be used in word problems?
- How can picture graphs and bar graphs be used to represent data sets and solve simple addition and subtraction problems?
- Some questions can be answered by collecting and analyzing data.
- The type of data determines the best type of visual representation.

Essential Questions

- Some attributes of objects are measurable and can be quantified using unit amounts.
- The length of any object can be used as a measurement unit for length (i.e. paperclip), but a standardized unit such as an inch or centimeter is always the same length.

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferring• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores
Alternative Assessments
<ul style="list-style-type: none">• Modified Unit Assessment

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Standards (NJSLs) Addressed in this Unit

Measurement and Data 2.MD

A. Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

B. Relate addition and subtraction to length.

5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

C. Work with time and money.

7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?

D. Represent and interpret data.

9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems⁴ using information presented in a bar graph.

Computer Science and Design Thinking

8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

- Solve mathematical situations together.

8.1.2.DA.4: Make predictions based on data using charts or graphs.

- Make predictions of trends based on patterns in charts

8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.

- Create and view data charts regarding climate change

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

- 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
- 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)
- 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

PRACTICES

- CLKSP1 Act as a responsible and contributing community member and employee.
- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RI.2.4** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.

Speaking and Listening

- **SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

Language

- **L.2.3** Use knowledge of language and its conventions when writing, speaking, reading or listening

Standards for Mathematical Practice

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason abstractly and quantitatively.
- MP.3 Construct viable arguments & critique the reasoning of others.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.

Unit 3: Measurement and Data

Suggested Teaching Points

Money and Time

Students will...

- Find the total values of collections of dimes, nickels, and pennies.
- Find the total values of collections of quarters, dimes, nickels, and pennies.
- Order coins in a collection by value and then find the total value.
- Represent money amounts less than a dollar using two different combinations of coins.
- Show one dollar in a variety of ways.
- Find and record the total value for money amounts greater than \$1.
- Solve word problems involving money by using the strategy *act it out*.
- Tell and write time to the hour and half hour.
- Tell and write time to the nearest five minutes.
- Practice telling time to the nearest five minutes.
- Tell and write time using A.M. and P.M.

Length in Customary Units

Students will...

- Use concrete models to measure the lengths of objects in inches.
- Make an inch ruler and use it to measure the lengths of objects.
- Estimate the lengths of objects by mentally partitioning the lengths into inches.
- Measure the lengths of objects to the nearest inch using an inch ruler.
- Solve addition and subtraction problems involving the lengths of objects by using the strategy *draw a diagram*.
- Measure the lengths of objects in both inches and feet to explore the inverse relationship between size and number of units.
- Estimate the lengths of objects in feet.
- Select appropriate tools for measuring different lengths.
- Measure the lengths of objects and use a line plot to display the measurement data.

Length in Metric Units

Students will...

- Use a concrete model to measure the lengths of objects in centimeters.
- Estimate lengths of objects in centimeters by comparing them to known lengths.
- Estimate lengths of objects in centimeters by comparing them to known lengths.
- Solve problems involving adding and subtracting lengths by using the strategy *draw a diagram*.
- Measure the lengths of objects in both centimeters and meters to explore the inverse relationship between size and number of units.
- Estimate the lengths of objects in meters.
- Measure and then find the difference in the lengths of two objects.

Data

Students will...

- Collect data in a survey and record that data in a tally chart.
- Interpret data in picture graphs and use that information to solve problems.
- Make picture graphs to represent data.
- Interpret data in bar graphs and use that information to solve problems.
- Make bar graphs to represent data.
- Solve problems involving data by using the strategy make a graph.
- Collect and review data charts regarding climate change.
- Make predictions of trends based on patterns in charts.

Unit Specific Vocabulary

dime
nickel
penny
quarter
cent sign ¢
dollar
dollar sign
decimal point
minutes
half past
hour hand
minute hand
quarter past
noon
midnight
A.M. & P.M.
inch
length

foot
inches
feet
measuring tape
yardstick
inch ruler
line plot
lengths
centimeter(s)
Meter
survey
tally chart
tally marks
key
picture
data
bar graph

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

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 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity Cards, Blackline Masters
- *Supplemental Materials:* Bridges in Mathematics for intervention
- STEAM Integration: [UNIT 4](#) - Build Our Community - Water Resources
- Digital Resources:
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 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources

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Oradell Public School District GR 2 Math Curriculum

- Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
- [Grade 2 - eGlossary](#)
- DreamBox
- Bridges in Mathematics (<https://bridges.mathlearningcenter.org/>) for intervention

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
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- Model productive and engaging partner talk.
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- Allow student to orally construct their response.
- Provide frequent breaks.
- [Counting Coins- BrainPopJr.](#)
- [Dollars and Cents - BrainPopJr.](#)
- [Parts of a Clock- BrainPopJr.](#)
- [Time to the Hour - BrainPopJr.](#)
- [Time to the Quarter and Half Hour - BrainPopJr.](#)
- [Inches and Feet - BrainPopJr.](#)
- [Meters and Centimeters-BrainPopJr.](#)
- [Tally Charts and Bar Graphs - BrainPopJr.](#)
- [Line Graphs - BrainPopJr.](#)

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English Language Learners

- [Grade 2 - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Set a writing goal for an assignment and then focus only on that goal.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans

- Reteach activities
- Preferential Seating
- Monitor On-Task Performance
- Establish and maintain eye contact when giving oral directions
- Directions repeated and/or clarified
- Provide copy of class notes
- Homework does not impact grade in class
- Reduce homework amount
- Modify assessments
- Use of manipulatives, counters, number grid, and vocabulary picture cards

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- **Self-Awareness:** ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
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- Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
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 - Connections:
 - Class discussions
 - Incentives for individual students and small groups
- **Responsible Decision-Making:** refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

2nd Grade Math Curriculum

Unit 4: Geometry and Fraction Concepts

Refer to Go Math! Chapters 11

Unit Overview

In this unit, students will identify and work with both two dimensional and three dimensional shapes. They will also divide a whole into equal parts which is key to understanding and naming fractions.

Enduring Understandings

- Two- and three-dimensional objects with or without curved surfaces can be described, classified, and analyzed by their attributes.
- A shape can be identified by the number of its sides, vertices or angles.
- A region can be divided into equal-sized parts in different ways which each have their own name.
- Equal-sized parts of a region have the same area, but not necessarily the same shape.

Essential Questions

- How can shapes and solids be recognized and drawn using specified attributes?
- How can circles and rectangles be divided into equal-sized parts?
- How can equal-sized parts of a region have the same area, but not necessarily the same shape?

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">● Teacher Observation● Student Participation● One-to-One Conferring● Small Strategy Groups● LinkIt! Progress Reports● DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">● Chapter Quizzes & Tests● Student Self-Reflection by Chapter● Chapter Performance Tasks (as appropriate)● Online Math Activity Scores
Alternative Assessments

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- Modified Unit Assessment
- Modified Chapter Assessment

Standards (NJSLs) Addressed in this Unit

Geometry 2.G

A. Reason with shapes and their attributes.

1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- Solve mathematical situations together

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

- 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
- 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)
- 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

PRACTICES

- CLKSP1 Act as a responsible and contributing community member and employee.
- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

- **RI.2.4** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.

Speaking and Listening

- **SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

Language

- **L.2.3** Use knowledge of language and its conventions when writing, speaking, reading or listening

Science

- **2-PS1-3** Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

Standards for Mathematical Practice

- MP.1 Make sense of problems and persevere in solving them.
 MP.2 Reason abstractly and quantitatively.
 MP.3 Construct viable arguments & critique the reasoning of others.
 MP.4 Model with mathematics.
 MP.5 Use appropriate tools strategically
 MP.6 Attend to precision.
 MP.7 Look for and make use of structure.
 MP.8 Look for and express regularity in repeated reasoning.

Unit 4: Fractions and Geometry Concepts

Suggested Teaching Points

Fractions and Geometry Concepts

Students will...

- Identify three-dimensional shapes.
- Identify and describe three-dimensional shapes according to the number of faces, edges, and vertices.
- Build three-dimensional shapes using cubes and other objects.
- Name 3-, 4-, 5-, and 6-sided shapes according to the number of sides and vertices.
- Identify angles in two-dimensional shapes.
- Sort two-dimensional shapes according to their attributes.
- Partition rectangles into equal-size squares and find the total number of these squares.
- Identify and name equal parts of circles and rectangles as halves, thirds, or fourths.
- Partition shapes to show halves, thirds, or fourths.
- Identify and describe one equal part as a half of, a third of, or a fourth of a whole.
- Solve problems involving wholes divided into equal shares by using the strategy draw a diagram.

Unit Specific Vocabulary

cube
 rectangular prism
 sphere
 cylinder

quadrilateral
 rectangle
 sides
 rows

cone face edge vertex vertices angle angles side pentagon hexagon triangle	columns halves thirds fourths equal parts whole half of third of fourth of quarter of
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Suggested Modifications and Accommodations

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 - [Grade 2 - eGlossary](#)
 - DreamBox
 - Bridges in Mathematics (<https://bridges.mathlearningcenter.org/>) for intervention
- Literature Links
 - *The Greedy Triangle* by Marilyn Burns
 - *Shape Up!* By David A. Adler
 - *Each Orange Had 8 Slices: A Counting Book* by Paul Giganti Jr.
 - *One Hundred Hungry Ants* by Elinor J. Pinczes

Special Education Students

- Use various methods to understand a student’s learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.

- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
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- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
- [3D Shapes- BrainPopJr.](#)
- [Flat Shapes -BrainPopJr.](#)
- [Parts of a Whole- BrainPopJr.](#)

English Language Learners

- [Grade 2 - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
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- Use preferential seating.
- Use flexible grouping.
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- Set a writing goal for an assignment and then focus only on that goal.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities

- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans

- Reteach activities
- Preferential Seating
- Monitor On-Task Performance
- Establish and maintain eye contact when giving oral directions
- Directions repeated and/or clarified
- Provide copy of class notes
- Homework does not impact grade in class
- Reduce homework amount
- Modify assessments
- Use of manipulatives, counters, number grid, and vocabulary picture cards

Social-Emotional Learning Competencies

- **Self-Awareness**: ability to recognize one’s emotions and know one’s strengths and limitations
 - Connections:
 - Reflecting on one’s learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management**: ability to regulate and control one’s emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness**: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one’s actions influence and are influenced by others
 - Connections:
 - Students collaborate and help each other during math centers
- **Relationship Skills**: refers to one’s ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups
- **Responsible Decision-Making**: refers to the ability to use multiple pieces of

information to make ethical and responsible decisions

- Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers