Second Grade Curriculum

Mathematics

Francis Howell School District

HOME SCHOOL COMMUNITY

LEARNING TOGETHER

Board Approved:

04/03/2014

Francis Howell School District
Second Grade Curriculum – Mathematics

Mission

Francis Howell School District is dedicated to preparing students today for success tomorrow.

Vision

Every student will graduate with college and career readiness skills.

Values

Francis Howell School District is committed to:

- Provide a consistent and comprehensive education that fosters high levels of academic achievement
- Operate a safe learning environment for all students
- Recruit and retain a high quality staff
- Promote parent, community, student, and business involvement in support of the school district
- Ensure fiscal responsibility
- Develop responsible citizens
- Operate as a professional learning community
- Make appropriate use of technology

Francis Howell School District Graduate Goals

Upon completion of their academic study in the Francis Howell School District, students will be able to:

- gather, analyze and apply information and ideas
- communicate effectively within and beyond the classroom
- recognize and solve problems
- make decisions and act as responsible members of society

Rationale for Elementary Mathematics

Using the Missouri Learning Standards as a base, the Francis Howell K-5 mathematics curriculum emphasizes conceptual understanding, procedural skill and fluency and application of concepts in real-world, problem-solving situations to address rigor as defined in the Missouri Learning Standards. Teachers will emphasize the use of the 8 mathematical practices outlined in the Standards to bring students to a deeper understanding of the focal points for each grade level. These eight mathematical practices, which should be embedded into math daily and are applicable for Grades K-12, are:

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

Course Description for Second Grade Math

In Grade 2, instructional time should focus 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.

1) Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).
2) Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.
3) Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.
4) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Elementary Math Curriculum Contributors (positions 2013-2014)

Susan Bayne, first grade teacher	Harvest Ridge Elementary
Christine Brawley, kindergarten teacher	Henderson Elementary
Nancy Coacher, first grade teacher	Warren Elementary
Tricia Cooper, fifth grade teacher	John Weldon Elementary
Stacy Garner, kindergarten teacher	Fairmount Elementary
Mary Grosch, third grade teacher	Castlio Elementary
Lisa Haffer, kindergarten teacher	Castlio Elementary
Dr. Tracey McAllister, fourth grade teacher	Harvest Ridge Elementary
Kelsey Mueller, fifth grade teacher	Fairmount Elementary
Jacque Murphy, second grade teacher	John Weldon Elementary
Karen Ruzicka, third grade teacher	Warren Elementary
Jennifer Smith, teacher of ELLs	Becky-David Elementary
Lauren Stephens, resource teacher	Warren Elementary
Joanne Tirpak, fifth grade teacher	Becky-David Elementary
Corrine Thomsen, fifth grade teacher	Independence Elementary
Vicki Wagner, fifth grade teacher	Warren Elementary

Dr. Pam Sloan	**Superintendent**
Dr. Mary Hendricks-Harris	**Chief Academic Officer**
Dr. Chris Greiner	**Director of Student Learning**
Dr. Sherri Lorton	**Elementary Content Leader**

Scope and Sequence for Second Grade Mathematics 2017-2018

Qtr 1: 42 days Qtr 2: 42 days Qtr 3: 42 days Qtr 4: 43 days

Qtr	Lessons	Maximum Days	Topic/Description	Domain
1	7	10 days	Topic 1: Understanding Addition and Subtraction	Operations and Algebraic Thinking
1	7	10 days	Topic 2: Addition Strategies	
1	6	10 days	Topic 3: Subtraction Strategies	
1	4	8 days	Topic 4: Working with Equal Groups	
2	7	10 days	Topic 5: Place Value to 100	Numbers and Operations in Base 10
2	6	9 days	Topic 6: Mental Addition	
2	5	8 days	Topic 7: Mental Subtraction	
2	9	13 days	Topic 8: Adding Two-Digit Numbers	
3	9	14 days	Topic 9: Subtracting Two-Digit Numbers	
3	8	11 days	Topic 10: Place Value to 1,000	
3	11	15 days	Topic 11: Three-Digit Addition and Subtraction	
3-4	7	9 days finish by spring break	Topic 12: Geometry	Geometry
4	5	8 days	Topic 13: Counting Money	Measurement and Data
4	4	7 days	Topic 14: Money	
4	9	12 days	Topic 15: Measuring Length	
4	6	8 days	Topic 16: Time, Graphs, and Data	
	110	**165 days**		
if time	10	12 days	Step-Up: Step-Up to Grade 3 Lessons	combination

To ensure all grade level standards are met, all topics must be completed. While teachers and PLCs should take into account student progress and make decisions based on their individual classes, the expectation is that all students will be taught all material in the standards/topics. If teams/teachers are struggling with pacing, they should work with their administration and content leader to develop a plan to ensure students are taught all content in their grade level.

Content Area: Math	**Course: Grade 2**	**UNIT: Operations & Algebraic Thinking**
Unit Description: Children use their understanding of addition to develop quick recall of basic addition facts and related subtraction facts. They solve arithmetic problems by applying their understanding of models of addition and subtraction, relationships and properties of number and properties of addition. Children develop, discuss, and use efficient, accurate, and generalizable methods to add and subtract multi-digit whole numbers. They develop fluency with efficient procedures, including standard algorithms, for adding and subtracting whole numbers, understand why the procedures work, and use them to solve problems.		**Unit Timeline:** 32-37 days

DESIRED RESULTS

Transfer Goals

Students will be able to independently use their learning to…

- Write an addition and subtraction sentence to describe 10 balloons.
- Write addition sentences that describe three different kinds of birds.
- Write subtraction sentences that describe the fruits they select for a fruit salad.
- Represent addition using arrays and number sentences.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings

Students will understand that…

1. Parts of a whole are one interpretation of addition. Addition number sentences can be used to show parts of a whole.
2. Joining parts to make a whole is one interpretation of addition. Addition number sentences can be used to show joining parts of a whole.

3. Separating parts from a whole and comparison are two interpretations of subtraction. Subtraction number sentences can be used to show separating parts from a whole or comparison subtraction situations.
4. Addition and subtraction have an inverse relationship. Inverse relationships "undo" each other. (i.e., Close-Open, Drop-Pick-up) The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has a related addition fact.
5. Some problems can be solved by using objects to act out the actions in the problem.
6. The number relationships of 0-more-than, 1-more-than, and 2-more-than are the basis for addition facts with 0, 1, and 2.
7. Doubles facts can be associated with memorable real-world situations.
8. Basic addition facts that are near doubles can be found using a related doubles fact.
9. Addition facts involving 9 can be changed to an equivalent fact with 10. Addition facts involving 8 can be changed to an equivalent fact with 10.
10. Two numbers can be added in any order.
11. Three or more whole numbers can be grouped and added in any order.
12. Information in a problem can often be shown using a picture or a diagram and used to understand and solve the problem. Some problems can be solved by writing and completing a number sentence or equation.
13. The number relationships of 0-less-than, 1-less-than, and 2 less-than are the basis for subtraction facts with a 0, 1, and 2.
14. Some subtraction facts can be found by subtracting from the minuend (the larger number) an amount to get to 10 and then subtraction the amount that remains.
15. Sometimes the answer to one problem or question is needed to find the answer to another problem or question.
16. Repeated addition involves joining equal groups.
17. An array involves joining equal groups and is one way to think about repeated addition. In the same way, students join groups of squares to introduce familiarity with area models.

Essential Questions:

Students will keep considering…

- What are some ways to think about addition and subtraction?
- How can word sentences be used to show parts and the whole?
- How can you represent a joining story with an addition number sentence?
- How can subtraction sentences be used to find the missing part of the whole?
- How can you solve a story about separating using connecting cubes and writing a numbers sentence?
- How can you solve a story about comparing using models and writing subtraction sentences?
- How can you write related addition and subtraction facts?
- How can using objects help you decide whether to add or subtract to find the correct answer?
- What are strategies for finding addition facts?

- How are the number relationships of 0-more-than, 1-more-than, and 2-more-than the basis for adding with 0, 1, and 2?
- What are different ways to learn and remember doubles facts?
- How can doubles facts be used to learn near doubles facts?
- What happens to the sum of two numbers when the order of the numbers being added is changed?
- When you add three numbers, how do you decide which two numbers to add first?
- How can you make a 10 when adding?
- How can drawing a picture and writing a number sentence help you solve a math story problem?
- What are strategies for finding subtraction facts?
- How can you use the concepts of 0-less-than, 1-less-than, and 2-less-than the basis for subtracting with 0, 1, and 2?
- How can you use a doubles fact to help you subtract?
- How can you use an addition fact to help you subtract?
- How do addition facts help you solve subtraction facts?
- How can you use the make-10 strategy to subtract?
- How does the answer to one question in a problem help you answer another question in the same problem?
- What is the relationship between arrays and repeated addition?
- How can repeated addition help you find the total number of objects?
- How can an array be used to help write an addition sentence?
- How can you use repeated addition to solve problems?
- How does drawing a picture help you solve a problem?

Students Will Know…	Students Will Be Able to …	Standard
● Sum: When you add numbers together, you find the sum. ● Part: A piece of a whole. ● Whole: Parts together equal a whole. ● Add: Joining groups together. ● Addition Sentence: 3+4=7 ● Plus (+): Another word or symbol for addition. ● Equals (=): Means having the same amount, number, or value. ● Join: To put together. ● Subtract: You find out how many are left or which group has more. ● Difference: The result when one number is subtracted from another; the amount by which one quantity is greater than another. ● Subtraction Sentence: 8-3=5 "The equal sign does not mean 'the answer is,' rather, 'is equivalent to'" ● Minus (-): Symbol for subtraction. ● Separate: Means to add, subtract, or to take something apart into two or more parts. ● More: Group with a greater number of objects has more. ● Fewer: Means less. ● Fact Family: A group of related addition and subtraction sentences. ● Doubles: Two addends that are the same. ● Near Doubles: An addition fact that has two addends that are one more than each other. ● Addend: The numbers that are being added. ● Number Sentence: Numbers with an operation symbol (+, -, x, or ÷) and an equal symbol (=). ● Array: Shows the same number of things in each row.	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. 2. Fluently add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers. 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. 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.	2.OA.1 2.OA.2 2.OA.3 2.OA.4

EVIDENCE of LEARNING			
Understanding	Standards	**Unit Performance Assessment**:	**R/R Quadrant**
1, 2, 3, 4, 5	2.OA.1, 2.OA.2	○ **Formative:** Topic 1 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	B
6, 7, 8, 10, 11, 12	2.OA.1, 2.OA.2	○ **Formative:** Topic 2 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	B
12, 13, 14, 15	2.OA.1, 2.OA.2	○ **Formative:** Topic 3 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	B
12, 15, 16, 17	2.OA.4	○ **Summative: Topic 4 Performance Task: REQUIRED FOR DATA ENTRY** **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	B

SAMPLE LEARNING PLAN				
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
Understanding	**Standards**	**Major Learning Activities:**	**Instructional Strategy:**	**R/R Quadrant**
1, 2, 5, 7	2.OA.2	Doubles 1. Set the purpose by telling students that they know how to add 0 more, 1 more, and 2 more. Today they will learn how to add doubles. 2. Connect by asking students to name things in the real world that come in twos such as pairs of shoes or twins. 3. Pose the problem: How can you use counters to show double four? 4. On the board, draw a box with a vertical line through it. Draw four circles on the left side of the box. Have the children put four counters on their workmats on page 41 to model what is drawn on the board. How can I show double 4? What number sentence can I write to show the fact for double 4? 5. Have students work in pairs. Give each pair counters. Have the children arrange their counters to show another double. 6. As students work on pages 43 and 44, assist or work with small groups as necessary.	Cues, Questions, and Advance Organizers Generating and Testing Hypotheses Providing Practice	B
13	2.OA.1, 2.OA.2	Subtracting 0, 1, 2 1. Set the purpose by telling students that they have learned to think about addition as 0, 1, and 2 more than. Today, they will learn to think about subtraction as 0, 1, and 2 less than. 2. Connect by asking students, if I have 5 apples, and I give 1 away so I have 1 fewer, how many apples do I have? 3. Pose the problem: Use 3 connecting cubes to show the number 3. How many cubes would you use to show 1 less than 3? 4. Have children use connecting cubes to model 0, 1, and 2 less than. On the board write 2. Show this number with your cubes in the space on page 71. How many cubes show 0 less than 2? What is another way to say 0 less than? Write 2-0=2 and have the children write the sentence in Item 1. Now start with 2 again and use your	Cues, Questions, and Advance Organizers Providing Practice	B

		cubes to show 1 less than 2. How many cubes did you remove? How many cubes are left? 5. As students work on pages 73 and 74, assist or work with small groups as necessary.		
17	2.OA.4	Building Arrays 1. Set the purpose by telling students that they have learned how to use counters to show repeated addition. Today, they will learn to model arrays to show repeated addition sentences. Use the Animated Glossary onPearson Realize to introduce arrays. 2. Connect by showing students an array using their desks in the classroom. 3. Pose the problem: Draw 15 counters on the board, show as 3 rows with 5 counters in each row. Ask the students to show this arrangement of counters on their workmat on page 105. How can you find how many in all? 4. Have the children look at the array on their workmat. Ask, how many rows are there? Are the rows equal? How many counters are in each row? Is this an array? Why or why not? 5. Have students work in pairs to model 2 rows with 4 in each row using counters. Once the pairs have made an array, guide them to complete the addition sentence. Have the children repeat for 3 rows with 3 in each row and 3 rows with 2 in each row. 6. As students work on pages 107 and 108, assist or work with small groups as necessary.	Setting Objectives and Providing Feedback Nonlinguistic Representations Cues, Questions, and Advance Organizers Providing Practice Cooperative Learning	B

UNIT RESOURCES
Teacher Resources: ● **EnVision Teacher Manual** ● **Pearson Realize** ● **Manipulative kit**
Student Resources: ● EnVision Student Book
Vocabulary:

- Sum: When you add numbers together, you find the sum.
- Part: A piece of a whole.
- Whole: Parts together equal a whole.
- Add: Joining groups together.
- Addition Sentence: 3+4=7
- Plus (+): Another word or symbol for addition.
- Equals (=): Means having the same amount, number, or value.
- Join: To put together.
- Subtract: You find out how many are left or which group has more.
- Difference: The result when one number is subtracted from another; the amount by which one quantity is greater than another.
- Subtraction Sentence: 8-3=5
- Minus (-): Symbol for subtraction.
- Separate: Means to add, subtract, or to take something apart into two or more parts.
- More: Group with a greater number of objects has more.
- Fewer: Means less.
- Fact Family: A group of related addition and subtraction sentences.
- Doubles: Two addends that are the same.
- Near Doubles: An addition fact that has two addends that are one more than each other.
- Addend: The numbers that are being added.
- Number Sentence: Numbers with an operation symbol (+, -, x, or ÷) and an equal symbol (=).
- Array: Shows the same number of things in each row.

Content Area: Math	**Course:** Grade 2	**Unit:** Numbers and Operations in Base Ten
Unit Description: Upon completing this unit, students will have an understanding of numbers that includes: ● The base-ten numeration system is a scheme for recording numbers using digits 0-9, groups of ten, and place value. ● Numbers can be used for different purposes, and numbers can be classified and represented in different ways. ● The set of real numbers is infinite and ordered. Whole numbers, integers, and fractions are real numbers. Each real number can be associated with a unique point on the number line. Additionally, students will have an understanding of operations that includes: ● Relationships can be described and generalizations make for mathematical situations that have numbers or objects that repeat in predictable ways. ● For some relationships, mathematical expressions and equations can be used to describe how members of one set are related to members of a second set. ● Mathematics content can be applied to solve problems. ● There is more than one algorithm for each of the operations with rational numbers. ● Some strategies for basic facts and most algorithms for operations with rational numbers, both mental math and paper and pencil, use equivalence to transform calculations into simpler ones. ● For a given set of numbers there are relationships that are always true, called properties, and these are the rules that govern arithmetic and algebra. ● There are multiple interpretations of addition, subtraction, multiplication, and division of rational numbers, and each operation is related to other operations.		**Unit Timeline:** 70-75 days

DESIRED RESULTS
<u>Transfer Goals</u>- ***Students will be able to independently use their learning to…***
● Create and solve addition problems. ● Mentally compute sums. ● Add and subtract three-digit numbers with and without regrouping. ● Add two-digit numbers with and without regrouping, explain the process for addition. ● Use addition to check the answer to a subtraction problem.

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings

Students will understand that…

1. Numbers can represent quantity, position, location, & relationships.
2. Place value is based on groups of ten.
3. Computation involves taking apart and combining numbers using a variety of approaches.
4. Flexible methods of computation involve grouping numbers in strategic ways.
5. Proficiency with basic facts aids estimation and computation of larger and smaller numbers.
6. A problem solver understands what has been done, knows why the process was appropriate, and can support it with reasons and evidence.
7. There can be different strategies to solve a problem, but some are more effective and efficient than others are.

Essential Questions:

Students will keep considering…

- How is math relevant to me?
- What do numbers convey?
- How can numbers be expressed, ordered, and compared?
- How does the position of a digit in a number affect its value?
- In what ways can numbers be composed and decomposed? –
- How are place value patterns repeated in numbers?
- How can place value properties aid computation?
- What are different models of and models for addition and subtraction?
- What are efficient methods for finding sums and differences?
- What computation tools are best suited to which circumstances?
- How does explaining my process help me to understand a problem's solution better?
- How do I decide what strategy will work best in a given problem situation?
- How do I know when a result is reasonable?

Students Will Know…	Students Will Be Able to …	Standard
● Digits: numbers have 1 or more digits; 43 has 2 digits ● Number word: uses words; The number word for 23 is twenty-three ● > (greater than): 5 is greater than 1; symbolically 5>1 ● < (less than): 2 is less than 6; symbolically 2<6 ● = (equal to): 4 is equal to 4; symbolically 4=4 ● Before: 421 comes before 422 ● After: 424 comes after 423 ● Even: can be shown in two equal parts ● Odd: cannot be divided into two equal parts ● Mental Math: math you do in your head ● Regroup: 10 ones can be regrouped to make 1 ten ● Number line: a line that shows numbers in order from left to right ● Hundreds: 10 tens make 1 hundred ● Thousands: 10 hundreds make 1 thousand ● Expanded form: shows the place value of each digit ● Standard form: a way to write a number using only digits	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; 100 can be thought of as a bundle of ten tens – called a "hundred" 2. Count within 1,000; skip count by 5s, 10s, and 100s 3. Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form. 4. Compare two three-digit numbers based on meaning of the hundreds, tens, and ones digits, using <, =, and < symbols to record the results of comparisons. 5. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. 6. 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 2's; write an equation to express an even number as a sum of two equal addends. 7. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 8. 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, and unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. 9. Add up to four two-digit numbers using strategies based on place value and properties of operations. 10. Add and subtract within 1,000, 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,	2.NBT.1a 2.NBT.2 2.NBT.3 2.NBT.4 2.NBT.8 2.OA.3 2.NBT.5 2.OA.1 2.NBT.6 2.NBT.7

● Compare: you find out if a number is greater than, less than, or equal to another number	ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. 11. 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. 12. 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) 13. Explain why addition and subtraction strategies work, using place value and the properties of operations.	2.MD.6 2.NBT.1b 2.NBT.9

EVIDENCE of LEARNING			
Understanding	Standards	**Unit Performance Assessment**:	**R/R Quadrant**
3, 4	2.NBT.B.5 2.NBT.B.6 2.NBT.B.7	**Summative: Topic 8 Performance Task** Scoring guide: See district protocol posted on MC, Schoology, or HowellNET	A
3	2.NBT.B.7	**Summative: Topic 11 Performance Task: *REQUIRED FOR DATA ENTRY*** Scoring Guide: See district protocol posted on MC, Schoology, or HowellNET	B
1, 3	2.NBT.B.5	**Formative #1: Quick Check 6-4, #6** ○ Scoring Guide: see rubric on page 172A	B
3, 4, 5	2.NBT.B.5 2.NBT.B.9	**Formative #2: Quick Check 9-7, #4** ○ Scoring Guide: see rubric on page 282A	B

SAMPLE LEARNING PLAN				
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
Understanding	**Standards**	**Major Learning Activities:**	**Instructional Strategy:**	**R/R Quadrant**

1, 2	2.NBT.1a	**Models for Tens and Ones** 1. Set the purpose for the students' learning. Tell the students you have learned how to group ones into tens. Today, you will learn how to use groups of ten and ones to make a two-digit number. 2. Connect by asking students to think how many groups of 10 are in 20? How many groups of 10 are in 30? 50? 3. Pose the problem: How can you use connecting cubes to show the number 23? Can you think of more than one way? 4. Have the students work in groups and count out 23 cubes. Say: These cubes show the number 23. Can you make a ten with these cubes? Can you make two tens? What number to 2 tens make? 5. Model to the students that they have 23 ones. Then show them how many ten-trains they can make. Show that you still have 3 left – this was completing 5-1 on page 123. 6. The students will continue to work in groups to finish page 123. They will use cubes to show 100 ones. Ask the students how many tens they made and how many ones they have left. Repeat with 18 cubes for item 3 and with 51 cubes for item 4. 7. As students work on pages 124-125, assist or work with small groups as necessary.	Cues, Questions, and Advance Organizers Providing Practice	B
1, 3, 6, 7	2.NBT.2	**Problem Solving: Look for a Pattern** 1. Set the purpose for the students' learning. Tell the students you have learned how to make an organized list to solve problems. Today, you will learn how to look for a pattern to help you solve problems. 2. Connect by asking students to continue the following number patterns: 2, 4, 6… 5, 10, 15… 10, 20, 30… For each pattern, you predict what comes next. Can you think of other times when people predict something? 3. Pose the problem: On the board, write 1, 4, 7, ___. Use your cubes to decide what number comes next. Have the children discuss and demonstrate how they solved the problem. Have the students record the pattern with numbers in Item 1 on page 177. 4. Model: Have the students watch you pick a new pattern with the cubes. Show three trains with 3, 5, and then 7 cubes each on your workmats on	Setting Objectives and Providing Feedback Generating and Testing Hypotheses Providing Practice	C

		page 177. Ask: How can you figure out how to use the pattern to find what comes next? Ask the children to record this pattern in Item 2. 5. The students will work in pairs. One student will make a pattern by building 3 trains with cubes. The partner "discovers" the pattern and builds the next train. Both students use numbers to record the pattern in item 3. The students will switch roles to complete item 4. 6. As students work on pages 178-179, assist or work with small groups as necessary.	Cooperative Learning	
3	2.NBT.8	**Subtracting Tens** 1. Set the Purpose: You have learned to add using mental math. Today, you will learn to subtract using mental math. 2. Connect by asking the students in what situations might you need to subtract mentally? 3. Pose the problem: Suppose you have 98 pencils. You give 20 pencils to your friend. How could you find how many pencils you have left without using pencil and paper? 4. Help the students connect what they know with what they are learning. Ask: How did you mentally add tens to a two-digit number? Since subtraction is the opposite of addition, how do you think you can mentally subtract tens from a two-digit number? 5. The students will work together on page 187. You will write 98 on the first line in Item 1. The students will work together to model 98 using your ten-frames cards. The students will choose a number from one of the balloons. Have the students write the number on the next line in item 1 and model the subtraction using your little ten-frames cards. After they have finished item 1, have them work to complete items 2-4. 6. After the students have completed the activity, have a class discussion. Ask the question: What do you notice about the answers? You are looking for the answer of the ten digits is different, but the ones digits are the same. 7. As students work on pages 188-189, assist or work with small groups as necessary.	Cues, Questions, and Advance Organizers Providing Practice Cooperative Learning	B

4	2.NBT.5	**Adding Two-Digit Numbers** 1. Set the Purpose: You have learned how to use models to add 2 two-digit numbers. Today you will use paper and pencil only to add 2 two-digit numbers. 2. Connect the students and explain that just as they used paper and pencil to add a one-digit number to a two-digit number, they can also use paper and pencil to add a two-digit number to another two-digit number. 3. Pose a Problem: One the board, write 46+26. Ask: How can you add 46+26 without using connecting cubes? The students should work in pairs to come up with solutions and then the class will share out. 4. Demonstrate how to complete the addition problem by rewriting the problem to vertical form. The students will follow along on their activity page. 5. As a class they will help you complete the rest of the page by helping you solve word problems. They will fill in the blanks o I saw 25 _____. Then I saw 16 more. How many _____ did I see in all? – AS the following questions: Do you need to regroup? How did you know? What is the sum? o I saw 76 _____. Then I saw 15 more. How many _____ did I see in all? o I saw 40 _____. Then I saw 53 more. How many _____ did I see in all? o I saw 63 _____. Then I saw 27 more. How many _____ did I see in all? 6. As students work on pages 230-231, assist or work with small groups as necessary.	Setting Objectives and Providing Feedback Cues, Questions, and Advance Organizers Providing Practice	A, B
2	2.NTB.4	**Comparing Numbers** 1. Set the Purpose: You already know how to compare two-digit numbers. Today, you will learn how to compare three-digit numbers. 2. Connect the students by using this word problem. Maria and Roy are in a school play. If Maria has 5 costumes for the play and Roy has 4 costumes for the play, who has more?	Setting Objectives and Providing Feedback	B

		3. Pose the Problem: On the board, write the numbers 214 and 331. Ask: When looking at numbers like 214 and 331, how do you know which is greater? 4. Introduce the symbols for greater than and less than. Give the students the following hint to help them remember. One way to remember what each symbol means is to think that the less than symbol points to the lesser number and the greater than symbol opens to the greater number. 5. Using place value blocks model each number. Have the students also use place value blocks on their mats from page 321. 6. Have the students continue to work on page 321. After the class is finished, have them find a pair or a friend at their table group to share what their answers were. 7. Have a whole class discussion with the following numbers: 481 and 418. Pose the questions: How can you compare two numbers if the hundreds are the same? What if the hundreds and tens are equal? 8. As students work on pages 322-333, assist or work with small groups as necessary.	Cues, Questions, and Advance Organizers Providing Practice	
5	2.NBT.7	**Estimating Sums** 1. Set the Purpose: You have already learned about estimating sums of two-digit numbers. Today you will learn how to estimate the sums of three-digit numbers. 2. Have the students connect by writing on the board the following number sentence 37+64. You want to know if the sum of these two-digit numbers is greater than or less than 100. How can you use estimation to find the answer? 3. Pose the Problem: The mayor of a town needs 800 signatures to start a recycling program. One group has collected 387 signatures. Another group has collected 452 signatures. Do they have enough signatures to start the program? How can you use estimation to solve the problem? The students will work in pairs to solve the problem. 4. As the teacher models the different ways to estimate and solve the problem. One way to estimate is to add the hundreds and then look at the tens. 300 and 400 is 700. Now look at the tens. 80+50=130, so	Setting Objectives and Providing Feedback Generating and Testing Hypotheses Providing Practice Cooperative Learning	B

		700+130 is more than 800. So, there are enough signatures. Another way to estimate is to add the hundreds from one number to the other number. Then you can look at the remaining tens. What are the remaining tens in 452? Is the sum of 787 and 50 greater than or less than 800? 5. Have students work in small groups. They will make 6 three-digit number cards with the following numbers on them: 364, 375, 391, 411, 430, 472. Each partner chooses a card from the pile and places it on page 343. Then the children use one of the two methods to estimate the sum of the numbers. The children can decide if the sum is greater than or less than 800 and circle their answers. 6. As students work on pages 344-345, assist or work with small groups as necessary.		

UNIT RESOURCES
Teacher Resources: ● The Topic Teacher's Editions ● Teacher's Resource Masters ● Common Core Reteaching and Practice Workbook ● Pearson Realize ● Manipulative kit ● Online Lesson Planner
Student Resources: ● EnVision Student Book ● Ready-Made Centers ● Manipulative Kits
Vocabulary ● Digits: numbers have 1 or more digits; 43 has 2 digits ● Number word: uses words; The number word for 23 is twenty-three ● > (greater than): 5 is greater than 1; symbolically 5>1 ● < (less than): 2 is less than 6; symbolically 2<6 ● = (equal to): 4 is equal to 4; symbolically 4=4

- Before: 421 comes before 422
- After: 424 comes after 423
- Even: can be shown in two equal parts
- Odd: cannot be divided into two equal parts
- Mental Math: math you do in your head
- Regroup: 10 ones can be regrouped to make 1 ten
- Number line: a line that shows numbers in order from left to right
- Hundreds: 10 tens make 1 hundred
- Thousands: 10 hundreds make 1 thousand
- Expanded form: shows the place value of each digit
- Standard form: a way to write a number using only digits
- Compare: you find out if a number is greater than, less than, or equal to another number

Content Area: Math	**Course: Grade 2**	**UNIT: Measurement and Data**
Unit Description: Children develop an understanding of the meaning and processes of measurement, including such underlying concepts as partitioning and transitivity. They understand linear measure as an iteration of units and use rulers and other measurement tools with that understanding. They understand the need for equal-length units, the use of standard units of measure and the inverse relationship between the size of a unit and the number of units used in a particular measurement. Children estimate, measure, and compute lengths as they solve problems involving data, space, and movement through space. Money provides a rich context for mathematical understanding. Counting money is a form of mental math and is related to children's understanding of place value and their ability to skip count by 5s and 10s. Attributes of coins include size, color, edges, values, and heads and tails sides. The relationship of size to value is also important for understanding and using coins. Once children understand the values of coins, they can begin finding the value of a collection of coins.		**Unit Timeline:** 32-37 days

DESIRED RESULTS

<u>Transfer Goals</u> - *Students will be able to independently use their learning to…*

- Students will show the same amount of money in different ways and compare money amounts and coin collections.
- Students will estimate and calculate sums in differences of money amounts.
- Students will estimate and measure classroom items using different units, both nonstandard and standard.
- Students will draw beads on a necklace and record the number of each type of bead in a table, and a bar graph. Students will also answer a question about the graph.
- Students will show and tell time in a variety of ways and choose AM or PM.
- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Understandings

Students will understand that…

1. Specific coins or bills each have a unique value. The size of a coin does not indicate its value.
2. Money amounts can usually be counted in different ways. When counting money, it is usually easier to start with the coin or bill with the greatest value.
3. The same amount of money can often be represented using different combinations of coins and bills.
4. Some problems can be solved by generating a list of outcomes and organizing that list in a systematic way so all outcomes are accounted for.
5. The process for adding money, written using cent notation, is the same as adding whole numbers.
6. The process for subtraction money, written using cent notation, is the same as subtracting whole numbers.
7. Rounding can be used to estimate sums and differences as can place value and number relationships.
8. Some problems can be solved by making a reasoned first try for what the answer might be and then through additional reasoning arrive at the correct answer.
9. The length of some objects is measurable.
10. The length of any object can be used as a measurement unit for length, but a standard unit, such as an inch or centimeter, is always the same length.
11. The length of any object can be used as a measurement unit for length, but a standard unit is always the same length.
12. Measurement is a process of comparing a unit to the object being measured. The length of any object can be used as a measurement unit for length.
13. Measurements in the same unit like inches can be added or subtracted in the same way as adding and subtracting whole numbers. The measurement unit needs to be written with the sum or difference.
14. The length of two objects can be compared by subtraction to find the difference.
15. Some problems can be solved by using objects to act out the actions in the problem.
16. Time can be given to the nearest five minutes. Time can be expressed using different units that are related to each other. A.M. and P.M. are used to designate certain time periods.
17. Time can be expressed before or after the hour.
18. A calendar shows days, weeks, and months.
19. The same time can be stated and written in more than one way.
20. Data can be organized in different ways.
21. The lengths of objects can be organized in different ways. A line plot can be used as a visual representation of the relative lengths of objects.
22. Each type of graph is most appropriate for certain kinds of data. Pictographs and bar graphs make it easy to compare data.
23. Some problems can be solved by making, reading, and analyzing a graph.

Essential Questions: ***Students will keep considering…***

- What strategies can be used to count money?
- How can you find the value of a group of dimes, nickels, and pennies?
- How can you find the value of a set of mixed coins?
- How do you show 100 cents, or $1, with different groups of coins?
- How do you count combinations of money that include both bills and coins?
- How can an organized list show the different ways to make the same amount of money?
- How can sums and differences be estimated?
- How are adding money amounts in cents similar to adding tens and ones?
- How are subtracting money amounts in cents similar to subtracting tens and ones?
- How can you estimate a two-digit sum and difference?
- How can trying a method, checking results, and revising as necessary be used to solve problems?
- What is the process for measuring length?
- How can you measure the length of an object using non-standard units?
- How are standard units, such as inches, used to measure length?
- How can you measure length using centimeters?
- What are inches, feet, and yards?
- Which classroom objects can be used to approximate the standard units centimeter and meter?
- How does the length of the unit of measure affect the number of units needed to measure an objects length?
- How can you use addition and subtraction to solve measurement problems?
- How can you compare the lengths of two paths?
- How can you use objects to measure lengths of objects that are not straight?
- How can clocks, bar graphs, and pictographs be used to show data and answer questions?
- How can the hands on an analog clock be arranged to show time?
- What are the different ways to say the time before and after the hour?
- How can you use a bar graph to organize information and compare data?
- How can you show the lengths of objects to see which is the longest or shortest?
- How does showing data in a pictograph and a tally chart help you?
- How can you solve a problem by using a graph?

Students Will Know…	Students Will Be Able to …	Standard
Vocabulary ● Dime: A dime is worth 10 cents. ● Quarter: A quarter is worth 25 cents. ● Dollar Bill: A dollar bill is worth 100 cents. ● Length: Length is the distance from one end to the other end of an object. ● Inch (in.): An inch is a standard unit to measure length. ● Centimeter (cm.): A centimeter is a metric unit used to measure length. ● Unit: An inch is a unit that can be used to measure the length. ● Width: The distance across an object. ● Height: Height is how tall something is. ● Foot (ft.): A foot is 12 inches. ● Yard (yd.): A yard is 3 feet or 36 inches. ● Meter (m): A meter is 100 centimeters. ● Hour Hand: The shortest hand on a clock that shows the hour. ● Minute Hand: The minute hand is the long hand that shows the minute. ● Bar Graph: A bar graph uses bars to show data. ● Data: Data is information you collect. ● Line Plot: A way to organize data on a number line. ● Pictograph: Uses pictures to show data. ● Symbol: A symbol represents data on a graph.	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 unit. 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. 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? 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 problems using information presented in a bar graph.	**2.MD.1** **2.MD.2** **2.MD.3** **2.MD.4** **2.MD.5** **2.MD.6** **2.MD.7** **2.MD.8** **2.MD.9** **2.MD.10**

EVIDENCE of LEARNING			
Understanding	Standards	**Unit Performance Assessment**:	R/R Quadrant
2, 3	2.MD.8	○ **Formative:** Topic 13 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET.	B
5, 6, 7, 8	2.MD.8	○ **Formative:** Topic 14 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	C
9, 10, 12, 15	2.MD.2, 2.MD.3, 2.MD.5	○ **Formative**: Topic 15 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	C
16, 17, 19, 22, 23	2.MD.7	○ **Formative: Given a bar graph, students will solve simple put together, take apart, and compare problems using the information presented in the bar graph.** **Scoring Guide:** see appendix	B
22, 23	2.MD.10	○ **Summative:** Topic 16 Performance Task **Scoring Guide:** See district protocol posted on MC, Schoology, or HowellNET	B

SAMPLE LEARNING PLAN				
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
Understanding	**Standards**	**Major Learning Activities:**	**Instructional Strategy:**	**R/R Quadrant**
3	2.MD.8	**Ways to Show the Same Amount** 1. Set the purpose by telling students that they have learned the value of different coins and have learned how to find the value of a collection of coins. Today they will learn the value of a dollar and make combinations of coins equal to one dollar. 2. Connect by asking students if there is another form of money that people use (other than coins)? (bills) 3. Pose the problem: How can you show one dollar with coins? 4. Draw 2 half-dollars, 4 quarters, 5 dimes, and 5 nickels on the board. Write 100¢ = 1 dollar above them. Ask, how can you use these coins to make $1? What is another way to make 100¢ with these coins? 5. Have students work in pairs. Give each pair a set of coins to work with. Tell them to find 3 different ways to make $1 or 100¢ with the coins. They will draw their answer on Items 1-3 on page 427. 6. As students work on pages 429 and 430, assist or work with small groups as necessary.	Nonlinguistic Representations Cues, Questions, and Advance Organizers Providing Practice Cooperative Learning	B
5, 6	2.MD.8, 2.NBT.5, 2.NBT.9	**Adding Money** 1. Set the purpose by telling students that they have learned how to count money and they have learned how to add two-digit numbers. Today they will learn how to add money. 2. Connect by asking students how much one dime is worth? How much are two dimes worth? How do you know? Repeat by asking home much one dime and one nickel is worth? 3. Pose the problem: If you went to the market to buy one apple for 23¢ and one banana for 38¢, how much would they cost altogether? Work with your partner and talk about your ideas. 4. As children share their solutions, demonstrate how to write 23¢ + 38¢ in vertical format. How do you show 23¢? Emphasize that the cent symbol is needed when you work with money. Continue to solve the	Setting Objectives and Providing Feedback Cues, Questions, and Advance Organizers Providing Practice	B

		addition problem using the algorithm for adding tens and ones. How is adding these two amounts of money similar to adding 2 two-digit numbers. How is adding **these two amounts of** money different from adding 2 two-digit numbers? 5. Have students work in pairs to solve two more addition problems by pretending to buy fruit. The first child picks two fruits from the choices on page 445. The second child adds the money amounts to find how much the fruits cost. After the first child checks that the answer is correct, have partners switch roles and play again. 6. As students work on pages 447 and 448, assist or work with small groups as necessary.		
10	2.MD.1, 2.MD.3	**Inches** 1. Set the purpose by telling students that they have used familiar items, such as cubes, to measure length. Today, you will learn how to measure length, or how long or tall an object is, using a standard unit called an inch. 2. Connect by asking students when do you measure length? 3. Pose the problem: Distribute rulers. How can you use your ruler to find objects that are about 1 inch, about 6 inches, and about 12 inches long? Find some objects with these lengths. 4. Have students work in pairs to find some objects and measure them with their rulers. Then discuss their findings. 5. As students work on pages 473 and 474, assist or work with small groups as necessary.	Nonlinguistic Representations Cues, Questions, and Advance Organizers Generating and Testing Hypotheses Providing Practice Cooperative Learning	B

UNIT RESOURCES
<u>Teacher Resources</u>: ● **EnVision Teacher Manual** ● **Pearson Realize** ● **Manipulative kit**

Student Resources:

- EnVision Student Book

Vocabulary:

- Dime: A dime is worth 10 cents.
- Quarter: A quarter is worth 25 cents.
- Dollar Bill: A dollar bill is worth 100 cents.
- Length: Length is the distance from one end to the other end of an object.
- Inch (in.): An inch is a standard unit to measure length.
- Centimeter (cm.): A centimeter is a metric unit used to measure length.
- Unit: An inch is a unit that can be used to measure the length.
- Width: The distance across an object.
- Height: Height is how tall something is.
- Foot (ft.): A foot is 12 inches.
- Yard (yd.): A yard is 3 feet or 36 inches.
- Meter (m): A meter is 100 centimeters.
- Hour Hand: The shortest hand on a clock that shows the hour.
- Minute Hand: The minute hand is the long hand that shows the minute.
- Bar Graph: A bar graph uses bars to show data.
- Data: Data is information you collect.
- Line Plot: A way to organize data on a number line.
- Pictograph: Uses pictures to show data.
- Symbol: A symbol represents data on a graph.

Content Area: Math	**Course: Grade 2**	**UNIT: Geometry**
Unit Description: Geometry, the study of shapes in space and spatial relationships, is important because it offers children opportunities to relate mathematics to the real world. Research suggests that spatial ability is related to problem-solving ability. Developing children's geometric concepts and spatial sense makes it more likely that they will benefit from the use of models and diagrams in other strands of mathematics. According to the Van Hiele theory, children acquire spatial sense through instruction that progresses through five sequential levels, beginning with the Visual Level. At this level, children judge plane shapes and solid figures by their appearance as a whole. They use non-verbal thinking as they focus on the total shape. Geometric knowledge gained at the Visual Level is used to extend investigations to the Analysis Level, in which children begin to focus on the specific properties of shapes and learn the language important in describing shapes according to their properties. When children reach the Informal Deduction Level, they can describe properties of shapes in a logical order. The final two levels, Deduction and Rigor, refer to the more formal and abstract study of geometry typical of high school and college courses.		**Unit Timeline:** 8-10 days

DESIRED RESULTS
<u>Transfer Goals</u>- ***Students will be able to independently use their learning to…***
● Identify flat surfaces or faces, vertices, and edges of solids, as well as the plan shapes that comprise them. ● Write about how two shapes are alike and different. ● Use several (3-5) small shapes to create a larger shape and tell the number of sides and vertices. ● Make sense of problems and persevere in solving them. ● Reason abstractly and quantitatively. ● Construct viable arguments and critique the reasoning of others. ● Model with mathematics. ● Use appropriate tools strategically. ● Attend to precision. ● Look for and make use of structure. ● Look for and express regularity in repeated reasoning.

Understandings - ***Students will understand that…***

1. Three-dimensional or solid figures have length, width, and height. Many can be described, classified, and analyzed by their faces or flat surfaces, edges, and vertices. Many everyday objects closely approximate standard geometric solids.
2. A shape can be identified by the number of its sides, vertices, or angles.
3. Some shapes can be combined to make new shapes.
4. Some shapes can be decomposed into other shapes.
5. Rectangles can be partitioned into equal shares.
6. A region can be divided into equal-sized parts in different ways. Equal-sized parts of a region have the same area but not necessarily the same shape.
7. Some problems can be solved by reasoning about the conditions in the problem.

Essential Questions: ***Students will keep considering…***

- How can shapes and solids be described, compared, and used to make other shapes?
- How are attributes, such as the number of flat surfaces, vertices, and edges used to describe and classify three-dimensional geometric figures?
- What plane shapes form the flat surfaces of some common solid figures?
- How can polygons (triangles, quadrilaterals, pentagons, and hexagons) be identified by attributes (sides, angles, and vertices)?
- How can new shapes be made by combining other shapes?
- How can cutting larger shapes make new smaller shapes?
- How can a rectangle be partitioned into equal squares and the number of squares be counted accurately?
- What does “equal parts” mean? How do you identify equal and unequal parts?
- How can you use clues about the attributes of plane shapes and solid figures to solve a problem?

Students Will Know…	Students Will Be Able to …	Standard
● Plane shape: a flat shape having two dimensions (length and width) ● Circle: a plan shape with a continuous line that is always one distance from the center ● Square: a quadrilateral with four equal size sides and four right angles ● Triangle: a polygon with three angles and three sides ● Rectangle: a quadrilateral with four right angles and two pair of opposite equal parallel sides ● Polygon: a plane shape having three or more straight sides	1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.5 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	2.G.1 2.G.2 2.G.3

EVIDENCE of LEARNING			
Understanding	Standards	**Unit Performance Assessment**:	**R/R Quadrant**
1, 2	2.G.1	○ **Summative: Topic 12 Performance Task** Scoring Guide See district protocol posted on MC, Schoology, or HowellNET	C
2	2.G.1; 2.G.3	○ **Formative #1: Choose 2 plane shapes. Then write sentences to compare how they are alike and different.** Scoring Guide**:** see appendix	A
2, 4, 5, 6	2.G.1; 2.G.3	○ **Formative #2: Draw a square. Then divide it into equal squares. What do you notice about the number of rows and columns?** Scoring Guide**:** see appendix	C

SAMPLE LEARNING PLAN				
Pre-assessment: Use "Review What you Know" to diagnose students' readiness by assessing prerequisite content.				
Understanding	**Standards**	**Major Learning Activities:**	**Instructional Strategy:**	**R/R Quadrant**
1, 2	2.G.1	**Flat Surfaces, Vertices, and Edges** 1. Set the purpose by telling students that they have learned to identify different flat shapes. Today we will learn how to identify solid figures. 2. Connect by asking students to think about the shapes they saw on the saw to school. What kind of shapes did you see? How can you describe these shapes? 3. Pose the problem: Hold up the geometric solids for children to see. Ask how they are alike and different. You could also use the Animated Glossary onPearson Realize . 4. Model how to analyze a shape using a cube. Hold it up and ask for the name. Have children write cube in the first space on item 1 of page 381. Ask "How would you describe this shape?" (it has flat surfaces; each surface is a square; it has edges). "How many flat surfaces does the shape have?" (6) "How many edges does it have?" (12) "How many vertices does it have?" (8). Have children record these numbers in the appropriate column in Item 1. 5. Have students work in groups. Give each group one solid figure and have them work together to count the flat surfaces, edges, and vertices in the shape. Guide children to use their counts to complete Item 2. Then have groups exchange shapes and repeat until they have explored each shape and completed each item. 6. As students work on pages 382 and 383, assist or work with small groups as necessary.	Nonlinguistic Representations Cues, Questions, and Advance Organizers Providing Practice Cooperative Learning	A

UNIT RESOURCES	
Teacher Resources: ● **EnVision Teacher Manual** ● **Pearson Realize** ● **Manipulative kit**	
Student Resources: EnVision Student Book	
Vocabulary: ● Plane shape: a flat shape having two dimensions (length and width) ● Circle: a plan shape with a continuous line that is always one distance from the center	● Square: a quadrilateral with four equal size sides and four right angles Triangle: a polygon with three angles and three sides ● Rectangle: a quadrilateral with four right angles and two pair of opposite equal parallel sides ● Polygon: a plane shape having three or more straight sides