2nd Grade OAS/PASS Companion Guide

Purpose of the Companion Guide

This companion guide was creating during the 2014 convening by educators from Mid-Del, Broken Arrow, Sallisaw, Glenpool, Ada, and Oklahoma City. The convening was an effort to bring educators from across the state together to create resources they thought would be useful for teachers in the coming year. This companion guide was created to provide teachers with:

- Clarification on grade level content standards
- A broad pacing schedule based on the blueprints for testing
- Vertical alignment for the grade levels above and below
- Resources specific to grade level content standards

Table of Contents

2nd Grade Math | Priority Academic Student Skills

Standard 1: Algebraic Reasoning: Patterns and Relationships - The student will use a variety of problem-solving approaches to model, describe and extend patterns.

- **2.1.1** Describe, extend, and create patterns using symbols, shapes, or designs (e.g., repeating and growing patterns made up of sets of shapes or designs, create patterns by combining different shapes and taking them apart).
- **2.1.2** Formulate and record generalizations about number patterns in a variety of situations (e.g., addition and subtraction patterns, even and odd numbers, build a table showing the cost of one pencil at 10 cents, 2 pencils at 20 cents).
- **2.1.3** Find unknown values in open number sentences with a missing addend and use to solve everyday problems.
- **2.1.4** Recognize and apply the associative property of addition (e.g., 3 + (2 +1) = (3 + 2) + 1).

Standard 2: Number Sense and Operation The student will use numbers and number relationships to acquire basic facts and will compute with whole numbers less than 100.

2.2.1 ***Number Sense***

- **2.2.1a** Use concrete models of hundreds, tens, and ones to develop the concepts of place value and link the concepts to the reading and writing of numbers (e.g., base-10 blocks).
- **2.2.1b** Represent a number in a variety of ways (e.g., write 15 as 8 + 7, write 25 as 2 tens + 5 ones or as 1 ten + 15 ones).
- **2.2.1c** Write a number sentence to compare numbers less than 1,000 (e.g., 425 > 276, 73 < 107, page 351 comes after 350, 753 is between 700 and 800).
- **2.2.1d** Demonstrate (using concrete objects, pictures, and numerical symbols) fractional parts including halves, thirds, fourths and common percents (25%, 50%, 75%, and 100%)

2.2.2 ***Number Operations***

- **2.2.2a** Demonstrate fluency (i.e., memorize and apply) with basic addition facts to make a maximum sum of 18 and the associated subtraction facts (e.g., 15+3=18 and 18-3=15).
- **2.2.2b** Use strategies to estimation and solve sums and differences (e.g., compose, decompose and regroup numbers, use knowledge of 10 to estimate quantities and sums [two numbers less than 10 cannot add up to more than 20].)
- **2.2.2c** Solve two-digit addition and subtraction problems with and without regrouping using a variety of techniques.
- **2.2.2d** Use concrete models to develop understanding of multiplication as repeated addition and division as successive subtraction.

Standard 3: Geometry - The student will use geometric properties and relationships to recognize and describe shapes.

- **2.3.1** Identify symmetric and congruent shapes and figures.
- **2.3.2** Investigate and predict the results of putting together and taking apart two-dimensional shapes.

Standard 4: Measurement - The student will use appropriate units of measure to solve problems.

2.4.1 ***Linear Measurement***

- **2.4.1a** Measure objects using standard units (e.g., measure length to the nearest foot, inch, and half inch).
- **2.4.1b** Select and use appropriate units of measurement in problem solving and everyday situations.

2.4.2 ***Time***

- **2.4.2a** Tell time on digital and analog clocks on the quarter-hour.
- **2.4.2b** Solve problems involving number of days in a week, month, or year and problems involving weeks in a month and year.

2.4.3 ***Money***

- **2.4.3a** Identify and count money up to a twenty dollar bill.
- **2.4.3b** Recognize and write different amounts of money using dollar and cent notation

Standard 5: Data Analysis - - The student will demonstrate an understanding of data collection, display, and interpretation.

2.5.1 ***Data Analysis***

- **2.5.1a** Collect, sort, organize, and display data in charts, bar graphs, and tables (e.g., collect data on teeth lost and display results in a chart).
- **2.5.1b** Summarize and interpret data in charts, bar graphs, and tables.

Elementary Math | Process Skills

Process Standard 1: Problems Solving

1.1 Use problem-solving approaches (e.g., act out situations, represent problems with drawings and lists, use concrete, pictorial, graphical, oral, written, and/or algebraic models, understand a problem, devise a plan, carry out the plan, look back).

1.2 Formulate problems from every day and mathematical situations (e.g., how many forks are needed?, how many students are absent?, how can we share/divide these cookies?, how many different ways can we find to compare these fractions?).

1.3 Develop, test, and apply strategies to solve a variety of routine and non-routine problems (e.g., look for patterns, make a table, make a problem simpler, process of elimination, trial and error).

1.4 Verify and interpret results with respect to the original problem (e.g., students explain verbally why an answer makes sense, explain in a written format why an answer makes sense, verify the validity of each step taken to obtain a final result).

1.5 Distinguish between necessary and irrelevant information in solving problems (e.g., play games and discuss "best" clues, write riddles with sufficient information, identify unnecessary information in written story problems).

Process Standard 2: Communication

2.1 Express mathematical ideas coherently and clearly to peers, teachers, and others (e.g., with verbal ideas, models or manipulatives, pictures, or symbols).

2.2 Extend mathematical knowledge by considering the thinking and strategies of others (e.g., agree or disagree, rephrase another student's explanation, analyze another student's explanation).

2.3 Relate manipulatives, pictures, diagrams, and symbols to mathematical ideas.

2.4 Represent, discuss, write, and read mathematical ideas and concepts. Start by relating everyday language to mathematical language and symbols and progress toward the use of appropriate terminology (e.g., "add more" becomes "plus", "repeated addition" becomes "multiplication", "fair share" becomes "divide", "balance the equation" becomes "solve the equation").

Process Standard 3: Reasoning

3.1 Explain mathematical situations using patterns and relationships (e.g., identify patterns in situations, represent patterns in a variety of ways, and extend patterns to connect with more general cases).

3.2 Demonstrate thinking processes using a variety of age-appropriate materials and reasoning processes (e.g., manipulatives, models, known facts, properties and relationships, inductive [specific to general], deductive [general to specific], spatial, proportional, logical reasoning ["and" "or" "not"] and recursive reasoning).

3.3 Make predictions and draw conclusions about mathematical ideas and concepts. Predictions become conjectures and conclusions become more logical as students mature mathematically.

Process Standard 4: Connections

4.1 Relate various concrete and pictorial models of concepts and procedures to one another (e.g., use two colors of cubes to represent addition facts for the number 5, relate patterns on a hundreds chart to multiples, use base-10 blocks to represent decimals).

4.2 Link concepts to procedures and eventually to symbolic notation (e.g., represent actions like snap, clap, clap with symbols A B B, demonstrate 3 4 with a geometric array, divide a candy bar into 3 equal pieces that represent one piece as 1/3).

4.3 Recognize relationships among different topics within mathematics (e.g., the length of an object can be represented by a number, multiplication facts can be modeled with geometric arrays, can be written as .5 and 50%).

4.4 Use mathematical strategies to solve problems that relate to other curriculum areas and the real world (e.g., use a timeline to sequence events, use symmetry in art work, explore fractions in quilt designs and to describe pizza slices).

Process Standard 5: Representation

5.1 Create and use a variety of representations appropriately and with flexibility to organize, record, and communicate mathematical ideas (e.g., dramatizations, manipulatives, drawings, diagrams, tables, graphs, symbolic representations).

5.2 Use representations to model and interpret physical, social, and mathematical situations (e.g., counters, pictures, tally marks, number sentences, geometric models; translate between diagrams, tables, charts, graphs).

Math Process Standard 1: Problem Solving

Sub-Standards	Questions to Develop Mathematical Thinking
1. Use problem-solving approaches (e.g., act out situations, represent problems with drawings and lists, use concrete, pictorial, graphical, oral, written, and/or algebraic models, understand a problem, devise a plan, carry out the plan, look back). *CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.* 2. Formulate problems from everyday and mathematical situations (e.g., how many forks are needed?, how many students are absent?, how can we share/divide these cookies?, how many different ways can we find to compare these fractions?). *CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.* 3. Develop, test, and apply strategies to solve a variety of routine and non-routine problems (e.g., look for patterns, make a table, make a problem simpler, process of elimination, trial and error). *CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.* 4. Verify and interpret results with respect to the original problem (e.g., students explain verbally why an answer makes sense, explain in a written format why an answer makes sense, verify the validity of each step taken to obtain a final result). CCSS.MATH.PRACTICE.MP6 Attend to precision. 5. Distinguish between necessary and irrelevant information in solving problems (e.g., play games and discuss "best" clues, write riddles with sufficient information, identify unnecessary information in written story problems). CCSS.MATH.PRACTICE.MP2 Reason abstractly and quantitatively.	○ How would you describe the problem in your own words? ○ How would you describe what you are trying to find? ○ What do you notice about...? ○ What information is given in the problem? ○ Describe the relationship between the quantities. ○ Describe what you have already tried. What might you change? ○ Talk me through the steps you've used to this point. ○ What steps in the process are you most confident about? ○ What are some other strategies you might try? ○ What are some other problems that are similar to this one? ○ How might you use one of your previous problems to help you begin? ○ How else might you organize...represent...show...? ○ How did you know your solution was reasonable? ○ Explain how you might show that your solution answers the problem. ○ What symbols or mathematical notations are important in this problem? ○ What mathematical language..., definitions..., properties can you use to explain...? ○ How could you test your solution to see if it answers the problem?

What does it look like in planning and delivery?

Tasks: elements to keep in mind when determining learning experiences	**Teacher**: actions that further promote mathematical thinking
○ Requires students to engage with conceptual ideas that underlie the procedures to complete the task and develop understanding. ○ Requires cognitive effort - while procedures may be followed, the approach or pathway is not explicitly suggested by the task, or task instructions and multiple entry points are available. The problem focuses students' attention on a mathematical idea and provides an opportunity to develop and/or use mathematical habits of mind. ○ Allows for multiple entry points and solution paths as well as, multiple representations, such as visual diagrams, manipulatives, symbols, and problem situations. Making connections among multiple representations to develop meaning.	○ Allows students time to initiate a plan; uses question prompts as needed to assist students in developing a pathway. ○ Continually asks students if their plans and solutions make sense. ○ Questions students to see connections to previous solution attempts and/or tasks to make sense of current problem. ○ Consistently asks to defend and justify their solution by comparing solution paths. ○ Differentiates to keep advanced students challenged during work time. ○ Consistently demands and models precision in communication and in mathematical solutions. (uses and models correct content terminology). ○ Expects students to use precise mathematical vocabulary during mathematical conversations.

Math Practice references included to make it easier for teachers to find resources on the internet pertaining to the teaching and learning of good math practice. Format and some content adapted from LouisianaBelieves.com.

Math Process Standard 2: Communication	
Sub-Standards	**Questions to Develop Mathematical Thinking**
1. Express mathematical ideas coherently and clearly to peers, teachers, and others (e.g., with verbal ideas, models or manipulatives, pictures, or symbols). CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others. 2. Extend mathematical knowledge by considering the thinking and strategies of others (e.g., agree or disagree, rephrase another student's explanation, analyze another student's explanation). CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others. 3. Relate manipulatives, pictures, diagrams, and symbols to mathematical ideas. CCSS.MATH.PRACTICE.MP2 Reason abstractly and quantitatively. 4. Represent, discuss, write, and read mathematical ideas and concepts. Start by relating everyday language to mathematical language and symbols and progress toward the use of appropriate terminology (e.g., "add more" becomes "plus", "repeated addition" becomes "multiplication", "fair share" becomes "divide", "balance the equation" becomes "solve the equation"). CCSS.MATH.PRACTICE.MP4 Model with mathematics.	○ How would you describe the problem in your own words? ○ How can you be sure that…?/ How could you prove that…?/ Will it still work if…? ○ What do you notice when…? ○ What would happen if…?
What does it look like in planning and delivery?	
Tasks: elements to keep in mind when determining learning experiences	**Teacher**: actions that further promote mathematical thinking
○ Apply general mathematical rules to specific situations. ○ Create mathematical ideas using models, manipulatives, pictures, or symbols to express mastery. ○ Requires students to access relevant knowledge and experiences and make appropriate use of them in working through the task. ○ Asks students to explain the meaning of the symbols in the problem and in their solution. ○ Requires students to demonstrate fluency in mental computations.	○ Asks clarifying questions or suggests ideas to improve/revise the argument. ○ Continually asks students if their plans and solutions make sense. ○ Asks what math relationships or pattern can be used to assist in making sense of the problem. ○ Apply the math students know to solve problems in everyday life.

Math Practice references included to make it easier for teachers to find resources on the internet pertaining to the teaching and learning of good math practice. Format and some content adapted from LouisianaBelieves.com.

Math Process Standard 3: Reasoning	
Sub-Standards	**Questions to Develop Mathematical Thinking**
1. Explain mathematical situations using patterns and relationships (e.g., identify patterns in situations, represent patterns in a variety of ways, extend patterns to connect with more general cases). CCSS.MATH.PRACTICE.MP7 Look for and make use of structure. 2. Demonstrate thinking processes using a variety of age-appropriate materials and reasoning processes (e.g., manipulatives, models, known facts, properties and relationships, inductive [specific to general], deductive [general to specific], spatial, proportional, logical reasoning [“and” “or” “not”] and recursive reasoning). CCSS.MATH.PRACTICE.MP2 Reason abstractly and quantitatively. 3. Make predictions and draw conclusions about mathematical ideas and concepts. Predictions become conjectures and conclusions become more logical as students mature mathematically. CCSS.MATH.PRACTICE.MP2 Reason abstractly and quantitatively.	○ What do you notice about…? ○ What is same and what is different about…? ○ What are some was to represent the quantities? ○ What observations do you make about…? ○ What patterns do you find in…? ○ How do you know if something is a pattern?
What does it look like in planning and delivery?	
Tasks: elements to keep in mind when determining learning experiences	**Teacher**: actions that further promote mathematical thinking
○ Requires students to provide evidence to explain their thinking beyond merely using computational skills to find a solution. ○ Requires students to determine and use appropriate tools to solve problems. ○ Expects students to look at problems and think about them in an unconventional way that demonstrates a deeper understanding of the mathematics structure – leading to a more efficient way of solving the problem.	○ Questions students to justify their choice of the thinking behind the model. ○ Gives students opportunity to evaluate the appropriateness of the model. ○ Encourages students to look at something they recognize and have them apply the information in identifying solution paths.

Math Practice references included to make it easier for teachers to find resources on the internet pertaining to the teaching and learning of good math practice. Format and some content adapted from LouisianaBelieves.com.

Math Process Standard 4: Connections	
Sub-Standards	**Questions to Develop Mathematical Thinking**
1. Relate various concrete and pictorial models of concepts and procedures to one another (e.g., use two colors of cubes to represent addition facts for the number 5, relate patterns on a hundreds chart to multiples, use base-10 blocks to represent decimals). CCSS.MATH.PRACTICE.MP7 Look for and make use of structure. 2. Link concepts to procedures and eventually to symbolic notation (e.g., represent actions like snap, clap, clap with symbols A B B, demonstrate 3 4 with a geometric array, divide a candy bar into 3 equal pieces that represent one piece as 1/3). CCSS.MATH.PRACTICE.MP8 Look for and express regularity in repeated reasoning. 3. Recognize relationships among different topics within mathematics (e.g., the length of an object can be represented by a number, multiplication facts can be modeled with geometric arrays, can be written as .5 and 50%). CCSS.MATH.PRACTICE.MP7 Look for and make use of structure. 4. Use mathematical strategies to solve problems that relate to other curriculum areas and the real world (e.g., use a timeline to sequence events, use symmetry in art work, explore fractions in quilt designs and to describe pizza slices). CCSS.MATH.PRACTICE.MP4 Model with mathematics.	○ What observations do you make about...? ○ What do you notice when...? ○ What parts of the problem might you eliminate? simplify? ○ What patterns do you find in...? ○ How do you know if something is a pattern? ○ What are some other problems that are similar to this one? ○ How does this relate to...? ○ In what ways does this problem connect to other mathematical concepts? ○ Will the same strategy work in other situations? ○ Is this always true, sometimes true or never true? ○ Would it help to create a diagram, graph, table, …? ○ What are some ways to visually represent…?
What does it look like in planning and delivery?	
Tasks: elements to keep in mind when determining learning experiences	**Teacher**: actions that further promote mathematical thinking
○ Requires students to look for the structure within mathematics in order to solve the problem. (i.e. – decomposing numbers by place value, working with properties, etc.) ○ Addresses and connects to prior knowledge in a non-routine way. ○ Present several opportunities to reveal patterns or repetition in thinking so generalizations can be made. ○ Requires students to see patterns or relationships in order to develop a mathematical rule. ○ Expects students to discover the underlying structure of the problem and come to a generalization. ○ Connects to a previous task to extend learning of a mathematical concept. ○ Invites students to create a context (real-world situation) that explains numerical/symbolic representations.	○ Encourages students to connect task to prior concepts and tasks. ○ Prompts students to generate exploratory questions based on current task. ○ Asks what math relationships or patterns can be used to assist in making sense of the problem. ○ Asks for predictions about solutions at midpoints throughout the solution process and encourages students to monitor each other's intermediate results. ○ Questions students to assist them in creating generalizations based on repetition in thinking and procedures. ○ Assists students in seeing and making connections among models. ○

Math Practice references included to make it easier for teachers to find resources on the internet pertaining to the teaching and learning of good math practice. Format and some content adapted from LouisianaBelieves.com.

Math Process Standard 5: Representation	
Sub-Standards	**Questions to Develop Mathematical Thinking**
1. Create and use a variety of representations appropriately and with flexibility to organize, record, and communicate mathematical ideas (e.g., dramatizations, manipulatives, drawings, diagrams, tables, graphs, symbolic representations). CCSS.MATH.PRACTICE.MP7 Look for and make use of structure. 2. Use representations to model and interpret physical, social, and mathematical situations (e.g., counters, pictures, tally marks, number sentences, geometric models; translate between diagrams, tables, charts, graphs). CCSS.MATH.PRACTICE.MP5 Use appropriate tools strategically.	○ What mathematical tools could we use to visualize and represent the situation? ○ In this situation would it be helpful to use. a graph..., number line..., ruler..., diagram..., calculator..., manipulative? ○ Why was it helpful to use ____? ○ What can using a _____ show us that _____may not? ○ In what situations might it be more informative or helpful to use...?
What does it look like in planning and delivery?	
Tasks: elements to keep in mind when determining learning experiences	**Teacher**: actions that further promote mathematical thinking
○ Requires multiple learning tools. (Tools may include: manipulatives (concrete models), calculator, measurement tools, graphs, diagrams, spreadsheets, statistical software, etc. ○ Invites students to create a context (real-world situation) that explains numerical/symbolic representations. ○ Allows for multiple solution paths as well as, multiple representations, such as visual diagrams, manipulatives, symbols, and problem situations. Making connections among multiple representations to develop meaning.	○ Demonstrates and provides student's experiences with the use of various mathematical models. ○ Questions students to justify their choice of model and the thinking behind the model. ○ Asks students about the appropriateness of the model chosen. ○ Assists students in seeing and making connections among models. ○ Give students opportunity to evaluate the appropriateness of the model. ○ Expects students to interpret, model, and connect multiple representations. ○ Asks students to explain the meaning of the symbols in the problem and in their solution. ○ Questions students so that understanding of the relationships between the quantities and/or the symbols in the problem and the solution are fully understood.

Math Practice references included to make it easier for teachers to find resources on the internet pertaining to the teaching and learning of good math practice. Format and some content adapted from LouisianaBelieves.com.

Major Concepts for 2nd Grade

The Major Concepts are defined in PASS, however the educators at the convening used the testing blueprints to determine if some needed to be added. While these are the heaviest weighted standards for the assessment, ***they are not all of the standards***. For a complete list of standards, refer to the first page of this document.

1. Demonstrate an understanding of the base-ten system and place value within that system.

   Blueprint of 3rd Grade Testing - 20% (Number Operations)

   Student Preformance

   I can explain the value of each digit in a three digit number.

   I can explain how the value of the digits in a number changes with their placement.

   I can read and write any number from 1 to 100 in "regular" form, words, or expanded form

   I can correctly compare 3-digit numbers using >, =, and < by observing the value of their digits.

2. Demonstrate quick recall of addition and subtraction facts as well as fluency with multi-digit addition and subtraction.

   Blueprint of 3rd Grade Testing - 20% (Number Sense)

   Student Preformance:

   I can EASILY add and subtract any two numbers from 0 to 18.

   I can solve addition and subtraction problems efficiently and have found strategies to group objects to help adding large number of objects.

   I can add and subtract numbers from 0 to 100 using different strategies based on place value and regrouping.

3. Develop an understanding of linear measurement facility in measuring lengths.

   Blueprint of 3rd Grade Testing - 18% (Measurement)

   Student Preformance:

   I can measure the length of an object in inches, half-inches, and feet.

   I can choose the appropriate unit of measure to solve problems in everyday situations.

   I can apply the appropriate unit of measure to solve problems in everyday situations.

Vertical Alignment of Learning Goals
Kindergarten through Fourth Grades

Major concepts, defined by grade level in PASS, aligned with 3rd Grade blueprint					
Kindergarten	**1st Grade**	**2nd Grade**	**3rd Grade**	**Blueprint 3rd Grade**	**4th Grade**
Demonstrate an understanding of the relationship between numbers and quantities.	Demonstrate an understanding of whole number relationships.	Demonstrate an understanding of the base-ten system and place value within that system.	Develop an understanding of fractional parts and fraction equivalence.	20%	Develop quick recall of multiplication facts and related division facts (fact families) and fluency with whole number multiplication.
N/A	Demonstrate an understanding of basic addition and subtraction concepts and facts.	Demonstrate quick recall of addition and subtraction facts as well as fluency with multi-digit addition and subtraction.	Develop an understanding of multiplication and division and acquire strategies for basic multiplication facts and related division facts (fact families).	20%	Develop an understanding of decimals and their connection to fractions.
Demonstrate an understanding of the concepts of nonstandard and standard measurement.	The student will develop and use measurement skills in a variety of situations	Develop an understanding of linear measurement facility in measuring lengths.	Apply the concepts of time, money, temperature, and measurement to real life situations.	18%	Develop an understanding of area and acquire strategies for finding area of two-dimensional shapes.
Identify the common geometric shapes.	Recognize and describe basic two- and three-dimensional shapes.	Use geometric properties and relationships to recognize and describe shapes.	Describe and analyze various properties of two- and three-dimensional shapes.	14%	Develop an understanding of geometric properties and relationships of shapes

Sample Pacing/Sequence Guide
Kindergarten, 1st and 2nd Grade Math PASS Objectives

This chart is intended as a starting point for a more specific pacing guide aligned with your district's school calendar. We recognize that not all districts operate on a 9 month schedule from September to May. This table provides guidance as to the general amount of time to be spent on each strand. It was created to aid in the vertical alignment and progression leading to the 3rd grade Math OCCT using the 3rd Grade Math OCCT blueprints as the reference point.

	September	October	November	December	January	February	March	April	May
Kindergarten									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									
1st Grade									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									
2nd Grade									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									

	Do not teach at this time
	Strands to be the focus of classroom instruction and assessment
	Strands to be practiced, reviewed and maintained through whole group instruction, centers, small groups, interventions, remediation, etc.

Sample Math Tasks

Number Operations

Major Concept: Develop an understanding of the base-ten system and place value within that system, up to the hundreds place.

- **I can explain the value of each digit in a number up to three digits.**
- **I can explain how the value of the digits in a number changes with their placement.**

Standard: PASS: Grade 2 Standard 2.1a *(CCSS 2.OA.2; 2.NBT.1)*

Math Task: Module 3; Topic C – (Engage NY) This topic consists of 4 lessons addressing place value. Topic C would work well for this "I can" statement as well as the next two "I can" statements.
Link: https://www.engageny.org/resource/grade-2-mathematics-module-3-topic-c

Synopsis: In Topic C, the teaching sequence opens with students counting on the place value chart by ones from 0 to 124, bundling larger units as possible. Next, they represent various counts in numerals, designating and analyzing benchmark numbers (e.g., multiples of 10) and numbers where they bundled to count by a larger unit. Next, students work with base ten numerals representing modeled numbers with place value cards that reveal or hide the value of each place. They represent three-digit numbers as number bonds and gain fluency in expressing numbers in unit form (3 hundreds 4 tens 3 ones), in word form, and on the place value chart. Students then count up by hundreds, tens, and ones, leading them to represent numbers in expanded form. The commutative property or "switch around rule" allows them to change the order of the units. They practice moving fluidly between word form, unit form, and expanded form. Students are held accountable for naming the unit they are talking about, manipulating, or counting. Without this precision, they run the risk of thinking of numbers as simply the compilation of numerals 0–9, keeping their number sense underdeveloped. The final Application Problem involves a found suitcase full of money: 23 ten dollar bills, 2 hundred dollar bills, and 4 one dollar bills, in which students use both counting strategies and place value knowledge to find the total value of the money.

- **I can read and write any number from 1 to 100 in "regular" form, words, or expanded form.**

Standard: PASS Grade 2 Standard 2.1b *(CCSS 2.OA.3; 2. Nbt.3)*

Math Task: Looking at Numbers Every Which Way
Link: https://www.illustrativemathematics.org/illustrations/1236

Synopsis: This task gives students the opportunity to work with multiple representations of base-ten numbers. This task extends the standard by asking students to represent the numbers with pictures and on the number line, which supports a deeper understanding. Students who are still grappling with the meaning of base-ten numerals might benefit from having base-ten blocks on hand. Eventually, students should be able to do this task without concrete representations, however.

- **I can correctly compare 3-digit numbers using >, =, and < by observing the value of their digits.**

Standard: PASS Grade 2 Standard 2.1a *(CCSS 2.Nbt.4)*

Math Task: Spin to Win (North Carolina – Lessons for Learning) pg. 33-38

Link: http://maccss.ncdpi.wikispaces.net/file/view/CCSSMathTasksGrade2.pdf/464833262/CCSSMathTasks-Grade2.pdf

Synopsis: Student Outcomes: I can build numbers with base ten blocks (or other materials). I can figure out which number is bigger (or smaller). I can read and write numbers using expanded form. I can explain how to determine whether a two or three-digit number is greater than, less than, or equal to another two or three-digit number. I can compare two and three-digit numbers and record this comparison by using the symbols >, <, and =.

Number Sense

Major Concept: Develop quick recall of addition facts and related subtraction facts (fact families) as well as fluency with multi-digit addition and subtraction

- **I can easily and accurately add and subtract any two numbers from 0 to 9.**

  Standard: PASS Grade 2 Standard 2.2a *(CCSS 2.OA.2;2.NBT.5)*

  Math Task: Building Towards Fluency
  Link: : https://www.illustrativemathematics.org/illustrations/1394

  Synopsis: The purpose of this task is to promote certain addition strategies that will help students learn to fluently add and subtract within 20. "Computational fluency refers to having efficient, accurate, generalizable methods (algorithms) for computing numbers that are based on well-understood properties and number relationships" (NCTM, 2000). Therefore, the focus in developing fluency should be more than the internalization of facts but on supporting students' natural development of number sense so that they are able to solve computations flexibly and efficiently using their understanding of place value and relationships between numbers.

- **I can solve addition and subtraction problems efficiently and have use strategies to group objects to help adding large number of objects.**

  Standard: PASS Grade 2 Standard 2.2b (CCSS 2.NBT.5 and 7)

  Math Task: Multi-digit Addition & Subtraction Strategies Revisited - Georgia Department of Education: Unit 4 pages 82-93
  Link: https://www.georgiastandards.org/CommonCore/Common%20Core%20Frameworks/CCGPS_Math_2_Unit4Framework.pdf

  Synopsis: In first task the students will apply their developed problem solving strategies as they use and share solutions for addition number stories. In the second task the students will solve two and three-digit subtraction word problems using place value knowledge.

- **I can add and subtract numbers from 0 to 100 using different strategies based on place value and regrouping.**

  Standard: PASS Grade 2 Standard 2.2c (CCSS 2.NBT.2,5, and 6)

  Math Task: How Far to 100 Pg. 45-49
  Link: http://maccss.ncdpi.wikispaces.net/file/view/CCSSMathTasks-Grade2.pdf/464833262/CCSSMathTasks-Grade2.pdf

  Synopsis: Using ten frames, students play a game where they get to 100.

Measurement
Major Concept: Demonstrate an understanding of the use of appropriate units of measure in a variety of situations.

Student Preformance:

I can measure the length of an object in inches, half-inches, and feet.

Standard: PASS Grade 2 Standard 4.1a *(CCSS 2.MD.2)*
Math Task: What is Measure?
Link: : http://rogersstaff.ss5.sharpschool.com/cms/One.aspx?portalId=3107421&pageId=3647167

Synopsis: This unit is from the Rogers Public Schools website in Rogers, AR. It also has a SMART companion lesson to go along with it.
This unit is designed to assess how students are thinking about measurement before beginning instruction. We aim to assess students' thinking about a few "big ideas" about measurement: the nature of units (attribute-unit relation, iteration, identity, tiling), partial units, scale-origin (zero-point, for instance, where 1 or 2 could stand in for 0), and the role and nature of tools commonly employed to measure common attributes, such as length. Students' written work and classroom conversation provide benchmark assessment.

I can choose the appropriate unit of measure to solve problems in everyday situations.

Standard: PASS Grade 2 Standard 4.1b *(CCSS 2.MD.2)*
Math Task: Kangaroo Jumps
Link:http://p5cdn4static.sharpschool.com/UserFiles/Servers/Server_3107337/File/2/Math/Developing/Kangaroo%20Jumps.pdf

Synopsis: Students should begin to understand that a ruler is a representation of a consistent row of units. Students should have experience measuring the length of the same object using different tools (ruler with inches, ruler with centimeters, a yardstick, or meter stick). This will help students learn which tool is more appropriate for measuring a given object. They describe the relationship between the size of the measurement unit and the number of units needed to measure something. For instance, a student might say, "The longer the unit, the fewer I need." Multiple opportunities to explore provide the foundation for relating metric units to customary units, as well as relating within customary (inches to feet to yards) and within metric (centimeters to meters). The more students work with a specific unit of measure, the better they become at choosing the appropriate tool when measuring.

- **I can apply the appropriate unit of measure to solve problems in everyday situations.**

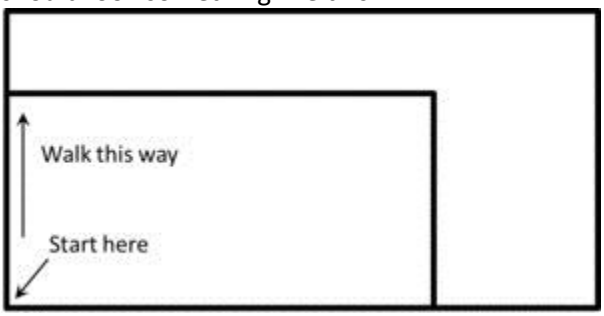
Standard: PASS Grade 2 Standard 4.1b (CCSS 2.MD.2)
Math Task: How Big is a Foot?
Link: https://www.illustrativemathematics.org/illustrations/1313

Synopsis: The teacher reads How Big is a Foot? to the class, stopping at the following key moments to ask the students questions.

- At one point the characters are asking, "How big is a bed?" Ask the students how they would describe the size of a bed.
- At another point the question arises, "Why was the bed too small for the queen?" Ask the students why they think the bed was too small for the queen.
- At the end the bed fits the queen perfectly. Ask the students, "Why did the bed fit perfectly?"

These discussion points are meant to encourage the students to develop their own understanding of what a foot is and why having a standard unit of measurement is necessary.

(Optional) The class can re-enact what happened in the story. First, the teacher paces off a rectangle that is three "teacher feet" wide and 6 "teacher feet" long by stepping heel-to-toe. The teacher should mark the floor with a piece of masking tape at the corners of the rectangle along the way, and then mark each side length of the rectangle with a long strip of masking tape. Then ask students to do the same, starting from the same corner and heading in the same direction as the teacher. The rectangles should look something like this:



After finishing the story, the teacher should show the class the one-inch strips of paper, the one-foot strips of paper, the ruler that shows one foot, and the yard stick. Lay the 12 one-inch strips of paper end-to-end and show they are the same length as a one-foot strip of paper. Measure them with the one-foot ruler. Then lay the three one-foot strips of paper end-to-end and measure them with the yard stick. Then point out that every length called a foot has 12 inches in it, and that a foot can be laid end-to-end to see how many feet long something is, just as the apprentice did at the end of the book.

The students complete their worksheets by finding items in the classroom about a foot long and about two feet long. Then they approximate how large a bed would need to be for a partner. Students can work with partners throughout the scavenger hunt if desired.

After students finish measuring, they should discuss as a whole group how they measured the various objects in the classroom and how they determined the dimensions of their partners.