Grade 2 Overview

Operations and Algebraic Thinking
- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data
- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

Geometry
- Reason with shapes and their attributes.

2nd Grade – CCSS for Mathematics

Grade 2 Overview

Operations and Algebraic Thinking
- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data
- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

Geometry
- Reason with shapes and their attributes.

Tulare County Office of Education
http://commoncore.tcoe.org/licensi
2nd edition 6/19

2nd Grade – CCSS for Mathematics

CCSS Where to Focus Grade 2 Mathematics

Not all of the content in a given grade is emphasized equally in the Standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. More time in these areas is also necessary for students to meet the Standards for Mathematical Practice.

To say that some things have a greater emphasis is not to say that anything in the standards can be safely neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 2

Emphases are given at the cluster level. Refer to the Common Core State Standards for Mathematics for the specific standards that fall within each cluster.

Key: ■ Major Clusters □ Supporting Clusters ○ Additional Clusters

2.OA.A	■	Represent and solve problems involving addition and subtraction.
2.OA.B	■	Add and subtract within 20.
2.OA.C	□	Work with equal groups of objects to gain foundations for multiplication.
2.NBT.A	■	Understand place value.
2.NBT.B	■	Use place value understanding and properties of operations to add and subtract.
2.MD.A	■	Measure and estimate lengths in standard units.
2.MD.B	■	Relate addition and subtraction to length.
2.MD.C	□	Work with time and money.
2.MD.D	□	Represent and interpret data.
2.G.A	○	Reason with shapes and their attributes.

REQUIRED FLUENCIES FOR GRADE 2

2.OA.B.2	Single-digit sums and differences (sums from memory by end of Grade 2)
2.NBT.B.5	Add/subtract within 100

Student Achievement Partners, Achieve the Core http://achievethecore.org/, Focus by Grade Level, http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/774/focus-by-grade-level

CCSS Where to Focus Grade 2 Mathematics

Not all of the content in a given grade is emphasized equally in the Standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. More time in these areas is also necessary for students to meet the Standards for Mathematical Practice.

To say that some things have a greater emphasis is not to say that anything in the standards can be safely neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE

Emphases are given at the cluster level. Refer to the Common Core State Standards for Mathematics for th specific standards that fall within each cluster.

Key: ■ Major Clusters □ Supporting Clusters ○ Additional Clusters

2.OA.A	■	Represent and solve problems involving addition and subtraction.
2.OA.B	■	Add and subtract within 20.
2.OA.C	□	Work with equal groups of objects to gain foundations for multiplication.
2.NBT.A	■	Understand place value.
2.NBT.B	■	Use place value understanding and properties of operations to add and subtract.
2.MD.A	■	Measure and estimate lengths in standard units.
2.MD.B	■	Relate addition and subtraction to length.
2.MD.C	□	Work with time and money.
2.MD.D	□	Represent and interpret data.
2.G.A	○	Reason with shapes and their attributes.

REQUIRED FLUENCIES FOR GRADE 2

2.OA.B.2	Single-digit sums and differences (sums from memory by end of Grade 2)
2.NBT.B.5	Add/subtract within 100

Student Achievement Partners, Achieve the Core http://achievethecore.org/, Focus by Grade Level, http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/774/focus-by-grade-level

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.OA.A Represent and solve problems involving addition and subtraction.

2.OA.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.

Essential Skills and Concepts:
- ☐ Adding and subtract within 100
- ☐ Read and understand word problems
- ☐ Solve word problems
- ☐ Solve for unknowns in all positions
- ☐ Represent word problems using visual representations

Question Stems and Prompts:
- ✓ Summarize the story problem and tell it to your partner in your own words.
- ✓ Draw an illustration for the word problem. What do the parts of your drawing mean? How do you know?
- ✓ Are we trying to find the total, a part, or are we comparing?
- ✓ Does your answer make sense?
- ✓ What does your answer tell us about the story/word problem?

Vocabulary	**Spanish Cognates**
Tier 2	
• solve	resolver
• symbol	símbolo
• illustration/drawing	ilustración
Tier 3	
• equation	ecuación
• addition	adición
• subtraction	sustracción

Standards Connections
2.OA.1 – 2.MD.5, 2.MD.8, 2.MD.10

2.OA.1 Examples:

Name 2.OA.1

Josh won 14 tokens from a game. He won 29 tokens from a second game. After the second game, he used 21 tokens for a prize. How many tokens did he have left?

There were 71 books on a shelf in the media center at the start of the day. 26 books were checked out in the morning. 15 books were checked out in the afternoon. How many books were left on the shelf at the end of the day?

Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.4

2nd Grade – CCSS for Mathematics

2.OA.A Represent and solve problems involving addition and subtraction.

2.OA.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.

Essential Skills and Concepts:
- ☐ Adding and subtract within 100
- ☐ Read and understand word problems
- ☐ Solve word problems
- ☐ Solve for unknowns in all positions
- ☐ Represent word problems using visual representations

Question Stems and Prompts:
- ✓ Summarize the story problem and tell it to your partner in your own words.
- ✓ Draw an illustration for the word problem. What do the parts of your drawing mean? How do you know?
- ✓ Are we trying to find the total, a part, or are we comparing?
- ✓ Does your answer make sense?
- ✓ What does your answer tell us about the story/word problem?

Vocabulary	**Spanish Cognates**
Tier 2	
• solve	resolver
• symbol	símbolo
• illustration/drawing	ilustración
Tier 3	
• equation	ecuación
• addition	adición
• subtraction	sustracción

Standards Connections
2.OA.1 – 2.MD.5, 2.MD.8, 2.MD.10

2.OA.1 Examples:

Name 2.OA.1

Josh won 14 tokens from a game. He won 29 tokens from a second game. After the second game, he used 21 tokens for a prize. How many tokens did he have left?

There were 71 books on a shelf in the media center at the start of the day. 26 books were checked out in the morning. 15 books were checked out in the afternoon. How many books were left on the shelf at the end of the day?

Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.4

Tulare County Office of Education
http://commoncore.tcoe.org/licensin
2nd edition 6/19

2nd Grade – CCSS for Mathematics

2.OA.A.1

Standard Explanation

In grade two students add and subtract numbers within 100 in the context of one- and two-step word problems (2.OA.1▲). By second grade students have had prior experiences working with various problem situations (add to, take from, put together, take apart, and compare) with unknowns in all positions (result unknown, change unknown, and start unknown). Grade two students extend their work with addition and subtraction word problems in two major ways:

- They represent and solve problems of all types which involve addition and subtraction within 100, building upon their previous work within 20, and
- They represent and solve two-step word problems of all types, extending their work with one-step word problems.

(Adapted from Arizona 2012, N. Carolina 2013, Georgia Department of Education [Georgia] 2011, and the Kansas Association of Teachers of Mathematics [KATM] 2nd 122 FlipBook 2012)

For these more complex grade two problems, it is important for students to represent the problem situations with drawings and equations (2.OA.1▲). Drawings can be shown more easily to the whole class during explanations and can be related to equations. Students can also use manipulatives (e.g., snap cubes, place-value blocks) but making drawings of quantities can be used anywhere to solve problems and support students in describing their strategies. Second grade students represent problems with equations and use boxes, blanks, or pictures for the unknown amount. For example, students can represent compare problems using "comparison bars" (e.g., a long bar above, a shorter bar below, followed by an oval for the difference or unknown amount, where the shorter bar plus the oval are the same length as the longer bar on top). Students can draw these bars and fill in numbers from the problem and label the bars.

One-step word problems use one operation. New at second grade are two-step word problems (2.OA.1▲) that require students to complete two operations, which may include the same operation or opposite operations.

The following table has examples of easy and middle-difficulty two-step word problems that would be appropriate.

One-Step Word Problem One Operation	Two-Step Word Problem Two Operations, Same	Two-Step Word Problem Two Operations, Opposite
There are 15 stickers on the page. Brittany put some more stickers on the page and now there are 22. How many stickers did Brittany put on the page? 15 + __ = 22 22 – 15 = __	There are 9 blue marbles and 6 red marbles in the bag. Maria put in 8 more marbles. How many marbles are in the bag now? 9 + 6 + 8 = __ or (9 + 6) + 8 = __	There are 39 peas on the plate. Carlos ate 25 peas. Mother put 7 more peas on the plate. How many peas are on the plate now? 39 – 25 + 7 = or (39 – 25) + 7 = __

Second graders use a range of methods, often mastering more complex strategies such as making tens and doubles and near doubles that were introduced in grade one for problems involving single-digit addition and subtraction.
(CA *Mathematics Framework*, adopted Nov. 6, 2013)

2.OA.A.1

Standard Explanation

In grade two students add and subtract numbers within 100 in the context of one- and two-step word problems (2.OA.1▲). By second grade students have had prior experiences working with various problem situations (add to, take from, put together, take apart, and compare) with unknowns in all positions (result unknown, change unknown, and start unknown). Grade two students extend their work with addition and subtraction worc problems in two major ways:

- They represent and solve problems of all types which involve addition and subtraction within 100, building upon their previous work within 20, and
- They represent and solve two-step word problems of all types, extending their work with one-step word problems.

(Adapted from Arizona 2012, N. Carolina 2013, Georgia Department of Education [Georgia] 2011, and the Kansas Association of Teachers of Mathematics [KATM] 2nd 122 FlipBook 2012)

For these more complex grade two problems, it is important for students to represent the problem situations with drawings and equations (2.OA.1▲). Drawings can be shown more easily to the whole class during explanations and can be related to equations. Students can also use manipulatives (e.g., snap cubes, place-value blocks) but making drawings of quantities can be used anywhere to solve problems and support students in describing their strategies. Second grade students represent problems with equations and use boxes, blanks, or pictures for the unknown amount. For example, students can represent compare problems using "comparison bars" (e.g., a long bar above, a shorter bar below, followed by an oval for the difference or unknown amount, where the shorter bar plus the oval are the same length as the longer bar on top). Students can draw these bars and fill in numbers from the problem and label the bars.

One-step word problems use one operation. New at second grade are two-step word problems (2.OA.1▲) that require students to complete two operations, which may include the same operation or opposite operations.

The following table has examples of easy and middle-difficulty two-step word problems that would be appropriate.

One-Step Word Problem One Operation	Two-Step Word Problem Two Operations, Same	Two-Step Word Problem Two Operations, Opposite
There are 15 stickers on the page. Brittany put some more stickers on the page and now there are 22. How many stickers did Brittany put on the page? 15 + __ = 22 22 – 16 = __	There are 9 blue marbles and 6 red marbles in the bag. Maria put in 8 more marbles. How many marbles are in the bag now? 9 + 6 + 8 = __ or (9 + 6) + 8 = __	There are 39 peas on the plate. Carlos ate 25 peas. Mother put more peas on the plate. How many peas are on the plate now 39 – 25 + 7 = or (39 – 25) + 7 = __

Second graders use a range of methods, often mastering more complex strategies such as making tens and doubles and near doubles that were introduced in grade one for problems involving single-digit addition and subtraction.
(CA Mathematics Framework, adopted Nov. 6, 2013)

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.OA.B Add and subtract within 20.

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

Essential Skills and Concepts:

- ☐ Use and explain a variety of strategies for adding and subtracting
- ☐ Fluently add and subtract within 20
- ☐ Solve problems mentally and explain your thought process

Question Stems and Prompts:

- ✓ Add using two different strategies. Explain your thinking.
- ✓ Subtract and explain your strategy.
- ✓ What was your total? How do you know?
- ✓ If you had _____ and subtracted _____ from it what would you have left over?
- ✓ What is the total (sum) when you add _____ and _____?

Vocabulary	**Spanish Cognates**
Tier 2	
• fluently	
• mental	mental
• memory	memoria
Tier 3	
• sum/total	suma/total
• digit	dígito

Standards Connections

2.OA.2 → 2.NBT.5

Methods for Solving Addition and Subtraction Problems

To solve word problems, students learn to apply various computational methods. Kindergarten students generally use Level 1 methods and Level 2 and 3 methods are used in grades one and two.

Methods used for solving single-digit addition and subtraction problems

Level 1: Direct Modeling by Counting All or Taking Away
Represent situation or numerical problem with groups of objects, a drawing, or fingers. Model the situation by composing two addend groups or decomposing a total group. Count the resulting total or addend.

Level 2: Counting On
Embed an addend within the total (the addend is perceived simultaneously as an addend and as part of the total). Count this total but abbreviate the counting by omitting the count of this addend; instead, begin with the number word of this addend. Some method of keeping track (fingers, objects, mentally imaged objects, body motions, other count words) is use to monitor the count.
Methods used to find the total or an addend, depending on what is monitored.

Level 3: Convert to an Easier Problem
Decompose an addend and compose a part with another addend.

Refer to Appendix F for additional information about methods used for solving single-digit addition and subtraction problems.

(Adapted from the University of Arizona Progressions Documents for the Common Core Math Standards [Progressions], K-5 CC and OA (pg. 12) 2011).

[2] See standard 1.OA.6 for a list of mental strategies.

2nd Grade – CCSS for Mathematics

2.OA.B Add and subtract within 20.

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

Essential Skills and Concepts:
☐ Use and explain a variety of strategies for adding and subtracting
☐ Fluently add and subtract within 20
☐ Solve problems mentally and explain your thought process

Question Stems and Prompts:
✓ Add using two different strategies. Explain your thinking.
✓ Subtract and explain your strategy.
✓ What was your total? How do you know?
✓ If you had _____ and subtracted _____ from it what would you have left over?
✓ What is the total (sum) when you add _____ and _____?

Vocabulary / Spanish Cognates
Tier 2
• fluently
• mental — mental
• memory — memoria
Tier 3
• sum/total — suma/total
• digit — dígito

Standards Connections
2.OA.2 → 2.NBT.5

Methods for Solving Addition and Subtraction Problems

To solve word problems, students learn to apply various computational methods. Kindergarten students generally use Level 1 methods and Level 2 and 3 methods are used in grades one and two.

Methods used for solving single-digit addition and subtraction problems

Level 1: Direct Modeling by Counting All or Taking Away
Represent situation or numerical problem with groups of objects, a drawing, or fingers. Model the situation by composing two addend groups or decomposing a total group. Count the resulting total or addend.

Level 2: Counting On
Embed an addend within the total (the addend is perceived simultaneously as an addend and as part of the total). Count this total but abbreviate the counting by omitting the count of this addend; instead, begin with the number word of this addend. Some method of keeping track (fingers, objects, mentally imaged objects, body motions, other count words) is use to monitor the count.
Methods used to find the total or an addend, depending on what is monitored.

Level 3: Convert to an Easier Problem
Decompose an addend and compose a part with another addend.

Refer to Appendix F for additional information about methods used for solving single-digit addition and subtraction problems.

(Adapted from the University of Arizona Progressions Documents for the Common Core Math Standards [Progressions], K-5 CC and OA (pg. 12) 2011).

[2] See standard 1.OA.6 for a list of mental strategies.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.OA.B.2

Standard Explanation

In grade two students extend their fluency with addition and subtraction from within 10 to within 20 (2.OA.2▲). The extended experiences students have had with addition and subtraction in kindergarten (within 5) and grade one (within 10) culminate in grade two students becoming fluent in single-digit additions and related subtractions using mental Level 2 and 3 methods and strategies as needed.

Building upon their work in First Grade, Second Graders use various addition and subtraction strategies in order to fluently add and subtract within 20. Second Graders internalize facts and develop fluency by using strategies often that make sense to them. When students are able to demonstrate fluency they are accurate, efficient, and flexible. Students must have efficient strategies in order to know sums from memory.

Students may still need to support the development of their fluency with math drawings when solving problems. Math drawings represent the number of objects counted (using dots and sticks) and do not need to represent the context of the problem. Thinking about numbers using frames of 10 or making drawings using 5-groups and tens can be a helpful way to understand single-digit additions and subtractions. An example of interactive games students can play to develop counting and addition skills are available at http://illuminations.nctm.org/ActivityDetail.aspx?ID=75 (National Council of Teachers of Mathematics [NCTM] Illuminations).

Mental strategies help students develop fluency as they make sense of number relationships while they add and subtract within 20. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Mental strategies
• Counting on
• Making tens ($9 + 7 = (9 + 1) + 6 = 10 + 6$)
• Decomposing a number leading to a ten ($14 - 6 = 14 - 4 - 2 = 10 - 2 = 8$)
• Fact families ($8 + 5 = 13$ and $13 - 8 = 5$)
• Doubles ($1 + 1$, $2 + 2$, $3 + 3$, etc.)
• Doubles plus one ($7 + 8 = 7 + 7 + 1$)
• Relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$)
• Equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$)

1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

2^{nd} Grade – CCSS for Mathematics

2.OA.B.2

Standard Explanation

In grade two students extend their fluency with addition and subtraction from within 10 to within 20 (2.OA.2▲). The extended experiences students have had with addition and subtraction in kindergarten (within 5) and grade one (within 10) culminate in grade two students becoming fluent in single-digit additions and related subtractions using mental Level 2 and 3 methods and strategies as needed.

Building upon their work in First Grade, Second Graders use various addition and subtraction strategies in order to fluently add and subtract within 20. Second Graders internalize facts and develop fluency by using strategies often that make sense to them When students are able to demonstrate fluency they are accurate, efficient, and flexible. Students must have efficient strategies in order to know sums from memory.

Students may still need to support the development of their fluency with math drawings when solving problems. Math drawings represent the number of objects counted (using dots and sticks) and do not need to represent the context of the problem. Thinking about numbers using frames of 10 or making drawings using 5-groups and tens can be a helpful way to understand single-digit additions and subtractions. An example of interactive games students can play to develop counting and addition skills are available at http://illuminations.nctm.org/ActivityDetail.aspx?ID=75 (National Council of Teachers of Mathematics [NCTM] Illuminations).

Mental strategies help students develop fluency as they make sense of number relationships while they add and subtract within 20. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Mental strategies
• Counting on
• Making tens ($9 + 7 = (9 + 1) + 6 = 10 + 6$)
• Decomposing a number leading to a ten ($14 - 6 = 14 - 4 - 2 = 10 - 2 = 8$)
• Fact families ($8 + 5 = 13$ and $13 - 8 = 5$)
• Doubles ($1 + 1$, $2 + 2$, $3 + 3$, etc.)
• Doubles plus one ($7 + 8 = 7 + 7 + 1$)
• Relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$)
• Equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$)

1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2^{nd} edition 6/19

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

2.OA.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.

Essential Skills and Concepts:
- ☐ Represent a number using a group of objects or a drawing
- ☐ Determine and explain why a number is odd or even
- ☐ Use strategies such as pairing or counting by 2s
- ☐ Write equations for even numbers using two equal addends

Question Stems and Prompts:
- ✓ Is this number even or odd? How do you know?
- ✓ Is this group of objects even or odd? How do you know?
- ✓ What will happen if one more objects are added to this group? Would the group of objects be odd or even?
- ✓ When you add these two numbers together is your sum/total even or odd?

Vocabulary	**Spanish Cognates**
Tier 2	
• object	objeto
• determine	determinar
Tier 3	
• addend	
• odd	
• even	

Standards Connections
2.OA.2 – 2.NBT.5

2.OA.3 Examples:

Name__________________________
2.OA.3

Circle the word ODD or EVEN to show which is correct.

Odd or Even?	Odd or Even?	Odd or Even?	Odd or Even?
17	10	14	19

Look at the EVEN NUMBERS above. Write a doubles fact below to go with each EVEN NUMBER.

________ + ________ = ________

________ + ________ = ________

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.OA.3

2nd Grade – CCSS for Mathematics

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

2.OA.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.

Essential Skills and Concepts:
- ☐ Represent a number using a group of objects or a drawing
- ☐ Determine and explain why a number is odd or even
- ☐ Use strategies such as pairing or counting by 2s
- ☐ Write equations for even numbers using two equal addends

Question Stems and Prompts:
- ✓ Is this number even or odd? How do you know?
- ✓ Is this group of objects even or odd? How do you know?
- ✓ What will happen if one more objects are added to this group? Would the group of objects be odd or even?
- ✓ When you add these two numbers together is your sum/total even or odd?

Vocabulary	**Spanish Cognates**
Tier 2	
• object	objeto
• determine	determinar
Tier 3	
• addend	
• odd	
• even	

Standards Connections
2.OA.2 – 2.NBT.5

2.OA.3 Examples:

Name__________________________
2.OA.3

Circle the word ODD or EVEN to show which is correct.

Odd or Even?	Odd or Even?	Odd or Even?	Odd or Even?
17	10	14	19

Look at the EVEN NUMBERS above. Write a doubles fact below to go with each EVEN NUMBER.

________ + ________ = ________

________ + ________ = ________

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.OA.3

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.OA.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.

Standard Explanation

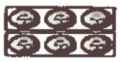
Second graders apply their work with doubles to the concept of odd and even numbers. Students should have ample experiences exploring the concept that if a number can be decomposed (broken apart) into two equal addends or doubles addition facts (e.g., 10 = 5 +5), then that number (10 in this case) is an even number. Students should explore this concept with concrete objects (e.g., counters, cubes, etc.) before moving towards pictorial representations such as circles or arrays.

Grade two students gain important foundations for multiplication as they explore odd and even numbers in a variety of ways (2.OA.3). They use concrete objects (e.g., counters, place-value cubes, etc.) and move towards pictorial representations such as circles or arrays (MP.1). Through investigations students realize an even number of objects can be separated into two equal groups (without extra objects remaining), while an odd number of objects will have one object remaining (MP.7 and MP.8). Students also apply their work with doubles addition facts and decomposing (breaking apart) numbers into two equal addends (e.g., 10 = 5 + 5) to understand the concept of even numbers. Students reinforce this concept as they write equations representing sums of two equal addends, such as 2 + 2 = 4, 3 + 3 = 6, 5 + 5 = 10, 6 + 6 = 12, or 8 + 8 =16. Students are encouraged to explain how they determined if a number is odd or even and what strategies they used. (MP.3)

2.OA.3 Illustrative Tasks:

- Red and Blue Tiles, https://www.illustrativemathematics.org/illustrations/620
- Buttons Odd and Even, https://www.illustrativemathematics.org/illustrations/1418

6 is even.



We can write 3+3=6 to show this.

7 is odd.

We can write 3+3+1=7 to show this.

2nd Grade – CCSS for Mathematics

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

2.OA.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.

Standard Explanation

Second graders apply their work with doubles to the concept of odd and even numbers. Students should have ample experiences exploring the concept that if a number can be decomposed (broken apart) into two equal addends or doubles addition facts (e.g., 10 = 5 +5), then that number (10 in this case) is an even number. Students should explore this concept with concrete objects (e.g., counters, cubes, etc.) before moving towards pictorial representations such as circles or arrays.

Grade two students gain important foundations for multiplication as they explore odd and even numbers in a variety of ways (2.OA.3). They use concrete objects (e.g., counters, place-value cubes, etc.) and move towards pictorial representations such as circles or arrays (MP.1). Through investigations students realize an even number of objects can be separated into two equal groups (without extra objects remaining), while an odd number of objects will have one object remaining (MP.7 and MP.8). Students also apply their work with doubles addition facts and decomposing (breaking apart) numbers into two equal addends (e.g., 10 = 5 + 5) to understand the concept of even numbers. Students reinforce this concept as they write equations representing sums of two equal addends, such as 2 + 2 = 4, 3 + 3 = 6, 5 + 5 = 10, 6 + 6 = 12, or 8 + 8 =16. Students are encouraged to explain how they determined if a number is odd or even and what strategies they used. (MP.3)

2.OA.3 Illustrative Tasks:

- Red and Blue Tiles, https://www.illustrativemathematics.org/illustrations/620
- Buttons Odd and Even, https://www.illustrativemathematics.org/illustrations/1418

6 is even.

We can write 3+3=6 to show this.

7 is odd.

We can write 3+3+1=7 to show this.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.OA.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.

Essential Skills and Concepts:
- ☐ Build and draw arrays with a specified number of rows and columns
- ☐ Write a repeated addition equation to represent an array

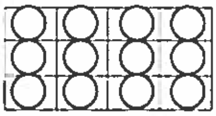
Question Stems and Prompts:
- ✓ Draw _ rows with _ dots in each row.
- ✓ How many dots do you have?
- ✓ Draw an addition equation to show how you got your answer?
- ✓ Create an array to match 2 +2+2+2.
- ✓ How many rows does this array have?
- ✓ How many columns does this array have?

Vocabulary	**Spanish Cognates**
Tier 2	
• row	
• column	columna
Tier 3	
• rectangular array	
• equation	ecuación
• equal addends	

Standards Connections
2.OA.4 → 3.OA.1

2.OA.4 Examples:

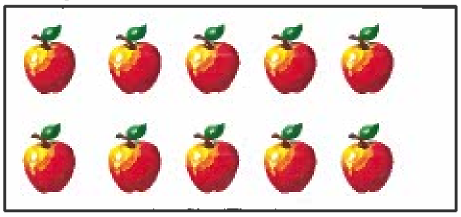
Example: **What is the total number of circles below?**



Student A	Student B
I see 3 counters in each column and there are 4 columns. So I added 3 + 3 + 3 + 3. That equals 12.	I see 4 counters in each row and there are 3 rows. So I added 4 + 4 + 4. That equals 12.
3 + 3 + 3 + 3 = 12	4 + 4 + 4 = 12

(North Carolina Unpacking Document, July 2013)

Array Picture Cards



2nd Grade – CCSS for Mathematics

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

2.OA.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.

Essential Skills and Concepts:
- ☐ Build and draw arrays with a specified number of rows and columns
- ☐ Write a repeated addition equation to represent an array

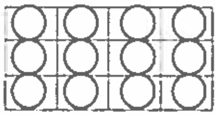
Question Stems and Prompts:
- ✓ Draw _ rows with _ dots in each row.
- ✓ How many dots do you have?
- ✓ Draw an addition equation to show how you got your answer?
- ✓ Create an array to match 2 +2+2+2.
- ✓ How many rows does this array have?
- ✓ How many columns does this array have?

Vocabulary	**Spanish Cognates**
Tier 2	
• row	
• column	columna
Tier 3	
• rectangular array	
• equation	ecuación
• equal addends	

Standards Connections
2.OA.4 → 3.OA.1

2.OA.4 Examples:

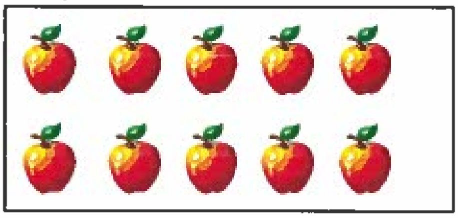
Example: **What is the total number of circles below?**



Student A	Student B
I see 3 counters in each column and there are 4 columns. So I added 3 + 3 + 3 + 3. That equals 12.	I see 4 counters in each row and there are 3 rows. So I added 4 + 4 + 4. That equals 12.
3 + 3 + 3 + 3 = 12	4 + 4 + 4 = 12

(North Carolina Unpacking Document, July 2013)

Array Picture Cards



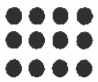
Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.OA.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.

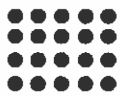
Standard Explanation

With standard 2.OA.4, second grade students use rectangular arrays to work with repeated addition, a building block for multiplication in grade three, using concrete objects (e.g., counters, buttons, square tiles) as well as pictorial representations on grid paper or other drawings of arrays (MP.1). Based on the commutative property of multiplication, students add either the rows or the columns and arrive at the same solution (MP.2). Students write equations that represent the total as the sum of equal addends as shown in the following example.



$4 + 4 + 4 = 12$

$3 + 3 + 3 + 3 = 12$



$5 + 5 + 5 + 5 = 20$

$4 + 4 + 4 + 4 + 4 = 20$

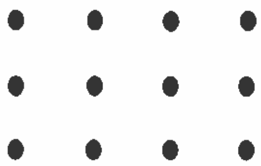
The first example will support student understanding that $3 \times 4 = 4 \times 3$, while the second example supports the fact that $4 \times 5 = 5 \times 4$. (Adapted from Arizona 2012, N. Carolina 2013, Georgia 2011, and KATM 2nd FlipBook 2012)

Students explore this concept with concrete objects (e.g., counters, bears, square tiles, etc.) as well as pictorial representations on grid paper or other drawings.

2.OA.4 Illustrative Task:

- **Counting Dots in Arrays,** https://www.illustrativemathematics.org/illustrations/3

Which of the following are equal to the number of dots in the picture below? (Choose all that apply.)



a. 3+3+3
b. 3+4
c. 4+4+4
d. 4+4+4+4
e. 3+3+3+3

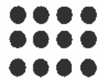
2nd Grade – CCSS for Mathematics

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

2.OA.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.

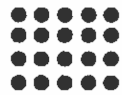
Standard Explanation

With standard 2.OA.4, second grade students use rectangular arrays to work with repeated addition, a building block for multiplication in grade three, using concrete objects (e.g., counters, buttons, square tiles) as well as pictorial representations on grid paper or other drawings of arrays (MP.1). Based on the commutative property of multiplication, students add either the rows or the columns and arrive at the same solution (MP.2). Students write equations that represent the total as the sum of equal addends as shown in the following example.



4 + 4 + 4 = 12

3 + 3 + 3 + 3 = 12



5 + 5 + 5 + 5 = 20

4 + 4 + 4 + 4 + 4 = 2

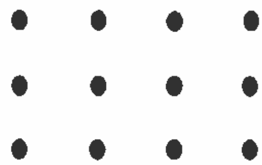
The first example will support student understanding that 3 × 4 = 4 × 3, while the second example supports the fact that 4 × 5 = 5 × 4. (Adapted from Arizona 2012, N. Carolina 2013, Georgia 2011, and KATM 2nd FlipBook 2012)

Students explore this concept with concrete objects (e.g., counters, bears, square tiles, etc.) as well as pictorial representations on grid paper or other drawings.

2.OA.4 Illustrative Task:

- Counting Dots in Arrays, https://www.illustrativemathematics.org/illustrations/3

Which of the following are equal to the number of dots in the picture below? (Choose all t apply.)



a. 3+3+3
b. 3+4
c. 4+4+4
d. 4+4+4+4
e. 3+3+3+3

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

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

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

Essential Skills and Concepts:
- ☐ Understand and represent place value for 3-digit numbers
- ☐ Understand that a hundred is 10 tens, two hundreds is 20 tens…etc.

Question Stems and Prompts:
- ✓ In the number 765 what is the value of the 7? 6? 5?
- ✓ If I had ____ hundreds, ____ tens and ____ what is my number?
- ✓ If I had ____ones how many tens do I have?
- ✓ If I had ____ tens how many hundreds would I have?
- ✓ If had ____ ones how many tens do I have? Do I have any ones left?
- ✓ What number does the__ stand for in the number __?

Vocabulary	**Spanish Cognates**
Tier 2	
• bundle	
• represent	representar
Tier3	
• hundreds	
• tens	
• ones	
• place value	

Standards Connections
2.NBT.1 → 2.NBT.3, 4, 6, 7, 8, 9

2.NBT.1 Example:

Teacher: How many blocks do you have?
Student: I have 3 hundreds, 4 tens and 2 left-overs.
Teacher: Does that help you know how many? How many do you have?
Student: Let me see. 100, 200, 300… ten, twenty, thirty, forty. So that's 340 so far. Then 2 more. 342.

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

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

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

Essential Skills and Concepts:
- ☐ Understand and represent place value for 3-digit numbers
- ☐ Understand that a hundred is 10 tens, two hundreds is 20 tens…etc.

Question Stems and Prompts:
- ✓ In the number 765 what is the value of the 7? 6? 5?
- ✓ If I had ____ hundreds, ____ tens and ____ what is my number?
- ✓ If I had ____ones how many tens do I have?
- ✓ If I had ____ tens how many hundreds would I have?
- ✓ If had ____ ones how many tens do I have? Do I have any ones left?
- ✓ What number does the__ stand for in the number __?

Vocabulary / **Spanish Cognates**
Tier 2
• bundle
• represent — representar
Tier3
• hundreds
• tens
• ones
• place value

Standards Connections
2.NBT.1 → 2.NBT.3, 4, 6, 7, 8, 9

2.NBT.1 Example:

Teacher: How many blocks do you have?
Student: I have 3 hundreds, 4 tens and 2 left-overs.
Teacher: Does that help you know how many? How many do you have?
Student: Let me see. 100, 200, 300… ten, twenty, thirty, forty. So that's 340 so far. Then 2 more. 342.

Tulare County Office of Education
http://commoncore.tcoe.org/licensin
2nd edition 6/19

2.NBT.A Understand place value.

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

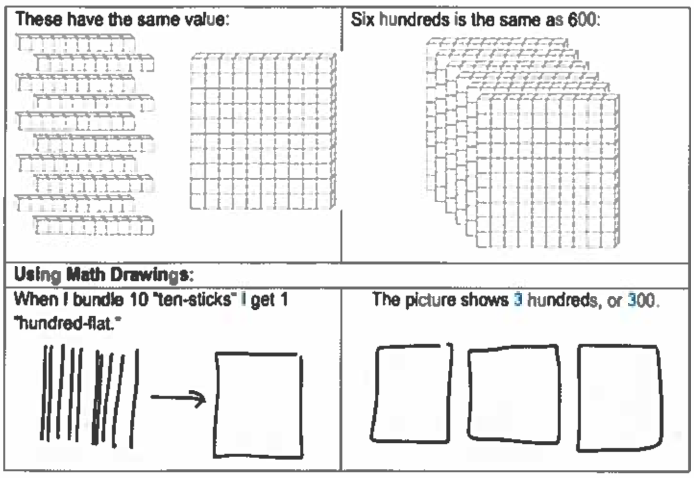
a. 100 can be thought of as a bundle of ten tens — called a "hundred."

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

Standard Explanation

Second grade students build on their previous work with groups of tens to make bundles of 100s, with or without leftovers, using base-ten blocks, cubes in towers of 10, ten frames, etc. and math drawings that initially show the ten tens within one hundred but then move to a quick-hundred version that is a drawn square in which students visualize ten tens. Bundling hundreds will support students' discovery of place value patterns (MP.7). Students explore the idea that numbers such as 100, 200, 300, etc., are groups of hundreds that have "0" in the tens and ones places. Students might represent numbers using place value (base ten) blocks (MP.1).

Students use manipulative materials and pictorial representations to help make a connection between the written three-digit numbers and hundreds, tens, and ones. As students represent various numbers, they associate number names with umber quantities (MP.2). For example, can be expressed as both "2 groups of hundred, 4 groups of ten and 3 ones" and "24 tens and 3 ones." Students can read number names as well as place value concepts to say a number. For example, 243 should be read as "two hundred forty-three" as well as "2 hundreds, 4 tens, and 3 ones." Flexibility with seeing a number like 240 as "2 hundreds and 4 tens" as well as "24 tens" is an important indicator of place-value understanding. (CA *Mathematics Framework*, adopted Nov. 6, 2013)



2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

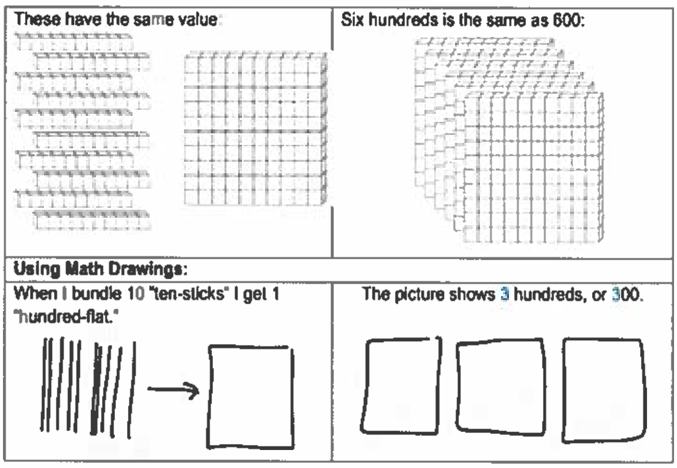
a. 100 can be thought of as a bundle of ten tens — called a "hundred."

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

Standard Explanation

Second grade students build on their previous work with groups of tens to make bundles of 100s, with or without leftovers, using base-ten blocks, cubes in towers of 10, ten frames, etc. and math drawings that initially show the ten tens within one hundred but then move to a quick-hundred version that is a drawn square in which students visualize ten tens. Bundling hundreds will support students' discovery of place value patterns (MP.7). Students explore the idea that numbers such as 100, 200, 300, etc., are groups of hundreds that have "0" in the tens and ones places. Students might represent numbers using place value (base ten) blocks (MP.1).

Students use manipulative materials and pictorial representations to help make a connection between the written three-digit numbers and hundreds, tens, and ones. As students represent various numbers, they associate number names with umber quantities (MP.2). For example, can be expressed as both "2 groups of hundred, 4 groups of ten and 3 ones" and "24 tens and 3 ones." Students can read number names as well as place value concepts to say a number. For example, 243 should be read as "two hundred forty-three" as well as "2 hundreds, 4 tens, and 3 ones." Flexibility with seeing a number like 240 as "2 hundreds and 4 tens" as well as "24 tens" is an important indicator of place-value understanding. (CA Mathematics Framework, adopted Nov. 6, 2013)



Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

Essential Skills and Concepts:
- ☐ Count within 1,000 from any given number
- ☐ Skip count by 2s, 5s, 10s, 100s

Question Stems and Prompts:
- ✓ Count forward starting at ________.
- ✓ Skip count forward by 2s starting at 0. (Teacher can change the number students are counting by as well as the number where students start counting)
- ✓ Point to a number on the hundred chart. Skip count by 10s starting at that number.
- ✓ Skip count by 2s for 2 minutes on paper.
- ✓ A student is skip counting by 5s. What will the pattern look like if this person continues to skip count?

Vocabulary	**Spanish Cognates**
Tier 2	
• pattern	
Tier 3	
• place value	
• skip counting	
• counting on	

Standards Connections
2.NBT.2 → 2.NBT.1

2.NBT.2 Examples:
Example:
What are the next 3 numbers after 498? *499, 500, 501.*
When you count back from 201, what are the first 3 numbers that you say? *200, 199, 198.*

Counting Routines:
- Choral counting – Point to a hundreds chart (or other chart or manipulatives) to count aloud as a class. This may be done for counting by ones in a given range or skip counting. https://www.illustrativemathematics.org/illustrations/360
- Counting circles – Select a counting sequence or range to work on while counting by ones or skip counting. Have students count around the circle or class following the given sequence. The student that says the last number in the sequence will sit down. Continue the activity for several rounds. https://www.illustrativemathematics.org/illustrations/359
- Pick a Number Counting – Use number cards for a particular range of numbers. Have a student select a card. With the class count on from the selected number. This can be used to count by ones within 1,000 or for skip counting. https://www.illustrativemathematics.org/illustrations/927

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

Essential Skills and Concepts:
- ☐ Count within 1,000 from any given number
- ☐ Skip count by 2s, 5s, 10s, 100s

Question Stems and Prompts:
- ✓ Count forward starting at ________.
- ✓ Skip count forward by 2s starting at 0. (Teacher can change the number students are counting by as well as the number where students start counting)
- ✓ Point to a number on the hundred chart. Skip count by 10s starting at that number.
- ✓ Skip count by 2s for 2 minutes on paper.
- ✓ A student is skip counting by 5s. What will the pattern look like if this person continues to skip count?

Vocabulary **Spanish Cognates**
Tier 2
- pattern
Tier 3
- place value
- skip counting
- counting on

Standards Connections
2.NBT.2 → 2.NBT.1

2.NBT.2 Examples:
Example:
What are the next 3 numbers after 498? *499, 500, 501.*
When you count back from 201, what are the first 3 numbers that you say? *200, 199, 198.*

Counting Routines:
- Choral counting – Point to a hundreds chart (or other chart or manipulatives) to count aloud as a class. This may be done for counting by ones in a given range or skip counting. https://www.illustrativemathematics.org/illustrations/36
- Counting circles – Select a counting sequence or range to work on while counting by ones or skip counting. Have students count around the circle or class following the given sequence. The student that says the last number in the sequence will sit down. Continue the activity for several rounds. https://www.illustrativemathematics.org/illustrations/359
- Pick a Number Counting – Use number cards for a particular range of numbers. Have a student select a card. With the class count on from the selected number. This can be used to count by ones within 1,000 or for skip counting. https://www.illustrativemathematics.org/illustrations/92

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

Standard Explanation

In kindergarten, students were introduced to counting by tens. In second grade they extend this to skip count by 2s, 5s, 10s and 100s (2.NBT.2▲). Exploring number patterns can help students skip count. For example, when skip counting by 5s, the ones digit alternates between 5 and 0, and when skip counting by 10s and 100s, only the tens and hundreds digits change, increasing by one each time. In this way, skip counting can reinforce students' place value understanding. Work with skip counting lays a foundation for multiplication; however, since students do not keep track of the number of groups they have counted they are not yet learning true multiplication. The ultimate goal is for second graders to count in multiple ways without visual support.

Second Grade students count within 1,000. Thus, students "count on" from any number and say the next few numbers that come afterwards. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Focus, Coherence, and Rigor:

As students explore number patterns to skip-count they also develop mathematical practices such the meaning of written quantities (MP.2) and number patterns and structures in the number system (MP.7).

2.NBT.2 Illustrative Task:

- Saving Money 2, https://www.illustrativemathematics.org/illustrations/1309

a. How much money will he have to save for both?

b. Louis gets $5 a week for his allowance. He plans to save his allowance every week. How many weeks does it take him to reach this goal?

c. Louis remembers his sister's birthday is next month. He sets a goal of saving $16 for her gift. How many weeks does he have to save his allowance to reach this goal? How many weeks does he have to save his allowance for all three of his goals?

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

Standard Explanation

In kindergarten, students were introduced to counting by tens. In second grade they extend this to skip count by 2s, 5s, 10s and 100s (2.NBT.2▲). Exploring number patterns can help students skip count. For example, when skip counting by 5s, the ones digit alternates between 5 and 0, and when skip counting by 10s and 100s, only the tens and hundreds digits change, increasing by one each time. In this way, skip counting can reinforce students' place value understanding. Work with skip counting lays a foundation for multiplication; however, since students do not keep track of the number of groups they have counted they are not yet learning true multiplication. The ultimate goal is for second graders to count in multiple ways without visual support.

Second Grade students count within 1,000. Thus, students "count on" from any number and say the next few numbers that come afterwards. (CA Mathematics Framework, adopted Nov. 6, 2013)

Focus, Coherence, and Rigor:

As students explore number patterns to skip-count they also develop mathematical practices such the meaning of written quantities (MP.2) and number patterns and structures in the number system (MP.7).

2.NBT.2 Illustrative Task:

- Saving Money 2, https://www.illustrativemathematics.org/illustrations/1309

a. How much money will he have to save for both?

b. Louis gets $5 a week for his allowance. He plans to save his allowance every week. How many weeks c take him to reach this goal?

c. Louis remembers his sister's birthday is next month. He sets a goal of saving $16 for her gift. How mar weeks does he have to save his allowance to reach this goal? How many weeks does he have to save allowance for all three of his goals?

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

Essential Skills and Concepts:
- ☐ Read and name numbers to 1000
- ☐ Write numbers/number names to 1000
- ☐ Expand a number into hundreds, tens, and ones and write them in expanded form

Question Stems and Prompts:
- ✓ Build ____ and write it in expanded form.
- ✓ Write out the number _____ in word form.
- ✓ Take this number from expanded form to standard form.
- ✓ Expand this number two different ways.

Vocabulary	**Spanish Cognates**
Tier 2	
• form	forma
• standard form	
Tier 3	
• expanded form	
• numeral	número
• number names	
• digit	dígito

2.NBT.3 Examples:

<u>Roll A Three-Digit Number</u>

1. Gather three different colored dice.
2. Tell student he/she will roll the 3 dice and make a three-digit number.
3. Student will then write the number in standard form, number names, and expanded form on attached recording chart.
4. Observe how the student reads and writes the number.

<u>Place Vale Card Sort</u>

1. Have students cut, sort and match the cards.
2. Have students read the numbers aloud.

Word Form	Expanded Form	Standard Form
500 + 90	400+30+4	367
254	300+60+7	five hundred ninety

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.3

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

Essential Skills and Concepts:
- ☐ Read and name numbers to 1000
- ☐ Write numbers/number names to 1000
- ☐ Expand a number into hundreds, tens, and ones and write them in expanded form

Question Stems and Prompts:
- ✓ Build ____ and write it in expanded form.
- ✓ Write out the number _____ in word form.
- ✓ Take this number from expanded form to standard form
- ✓ Expand this number two different ways.

Vocabulary / Spanish Cognates
Tier 2
• form — forma
• standard form
Tier 3
• expanded form
• numeral — número
• number names
• digit — dígito

2.NBT.3 Examples:

Roll A Three-Digit Number

5. Gather three different colored dice.
6. Tell student he/she will roll the 3 dice and make a three-digit number.
7. Student will then write the number in standard form, number names, and expanded form on attached recording chart.
8. Observe how the student reads and writes the number.

Place Vale Card Sort

3. Have students cut, sort and match the cards.
4. Have students read the numbers aloud.

Word Form | Expanded Form | Standard Form
500 + 90 | 400+30+4 | 367
254 | 300+60+7 | five hundred ninety

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.3

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

Standard Explanation

Grade two students need opportunities to read and represent numerals in various ways (2.NBT.3▲). For example:

- Standard form (e.g., 637)
- Base-ten numerals in standard form (e.g., 6 hundreds, 3 tens and 7 ones)
- Number names in word form (e.g., six hundred thirty seven)
- Expanded form (e.g., 600 + 30 + 7)
- Equivalent representations (e.g., 500 + 130 + 7; 600 + 20 + 17; 30 + 600 + 7)

When students read the expanded form for a number, they might say "6 hundreds plus 3 tens plus 7 ones" or "600 plus 30 plus 7." Expanded form is a valuable skill when students use place value strategies to add and subtract large numbers (see also 2.NBT.7).

Second graders read, write and represent a number of objects with a written numeral (number form or standard form). These representations can include snap cubes, place value (base 10) blocks, pictorial representations or other concrete materials.

2.NBT.3 Illustrative Task:

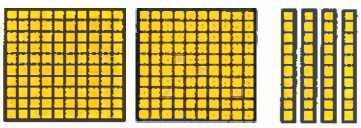
- Looking at Numbers Every Which Way, https://www.illustrativemathematics.org/illustrations/1236

a. 127 is a number.
- Write it as a sum of 100's, 10's, and 1's.
- Write its name in words.
- Draw a picture to represent the number.
- Locate it on the number line.

b. 500+60+8 is a number.
- Write it as a three-digit number.
- Write its name in words.
- Draw a picture to represent the number.
- Locate it on the number line.

c. Six hundred and nine is a number.
- Write it as a three-digit number.
- Write it as a sum of 100's, 10's, and 1's.
- Draw a picture to represent the number.
- Locate it on the number line.

d. The picture represents a number. The big square represents 100, the rectangle represents 10, and the small square represents 1.



- Write it as a three-digit number.
- Write it as a sum of 100's, 10's, and 1's.
- Write its name in words.
- Locate it on the number line.

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

Standard Explanation

Grade two students need opportunities to read and represent numerals in various ways (2.NBT.3▲). For example:

- Standard form (e.g., 637)
- Base-ten numerals in standard form (e.g., 6 hundreds, 3 tens and 7 ones)
- Number names in word form (e.g., six hundred thirty seven)
- Expanded form (e.g., 600 + 30 + 7)
- Equivalent representations (e.g., 500 + 130 + 7; 600 + 20 + 17; 30 + 600 + 7)

When students read the expanded form for a number, they might say "6 hundreds plus 3 tens plus 7 ones" or "600 plus 30 plus 7." Expanded form is a valuable skill when students use place value strategies to add and subtract large numbers (see also 2.NBT.7).

Second graders read, write and represent a number of objects with a written numeral (number form or standard form). These representations can include snap cubes, place value (base 10) blocks, pictorial representations or other concrete materials.

2.NBT.3 Illustrative Task:

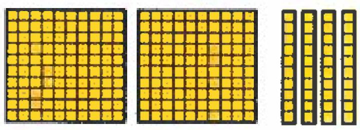
- Looking at Numbers Every Which Way, https://www.illustrativemathematics.org/illustrations/1236

a. 127 is a number.
- Write it as a sum of 100's, 10's, and 1's.
- Write its name in words.
- Draw a picture to represent the number.
- Locate it on the number line.

b. 500+60+8 is a number.
- Write it as a three-digit number.
- Write its name in words.
- Draw a picture to represent the number.
- Locate it on the number line.

c. Six hundred and nine is a number.
- Write it as a three-digit number.
- Write it as a sum of 100's, 10's, and 1's.
- Draw a picture to represent the number.
- Locate it on the number line.

d. The picture represents a number. The big square represents 100, the rectangle represents 10, and the small square represents 1.



- Write it as a three-digit number.
- Write it as a sum of 100's, 10's, and 1's.
- Write its name in words.
- Locate it on the number line.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

Essential Skills and Concepts:
- Compare two three-digit numbers
- Understand and use the inequality symbols >, <, =
- Explain and record results of comparisons using symbols

Question Stems and Prompts:
- ✓ Which number is greater? Which number is the less?
- ✓ Compare these two numbers. Explain how you know which number is greater.
- ✓ How are these numbers the same? How are they different?

Vocabulary	**Spanish Cognates**
Tier 2	
• compare	comparar
• symbol	símbolo
• record	
• less than	
• greater than	
Tier 3	
• inequality symbols	símbolo de la desigualdad
• equal	igual

2.NBT.4 Examples:

Example: Compare 452 and 455.
Student 1: Student might explain 452 has 4 hundreds 5 tens and 2 ones and 455 has 4 hundreds 5 tens and 5 ones. They have the same number of hundreds and the same number of tens, but 455 has 5 ones and 452 only has 2 ones. So, 452 is less than 455 or 452 < 455.
Student 2: Student might think 452 is less than 455. I know this because when I count up I say 452 before I say 455.

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

Name:_______________

2.NBT.4

Use <, >, or = to fill in the blank.

1. 732 861 2. 500 + 40 + 2

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.4

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

Essential Skills and Concepts:
- Compare two three-digit numbers
- Understand and use the inequality symbols >, <, =
- Explain and record results of comparisons using symbols

Question Stems and Prompts:
- ✓ Which number is greater? Which number is the less?
- ✓ Compare these two numbers. Explain how you know which number is greater.
- ✓ How are these numbers the same? How are they different?

Vocabulary	**Spanish Cognates**
Tier 2	
• compare	comparar
• symbol	símbolo
• record	
• less than	
• greater than	
Tier 3	
• inequality symbols	símbolo de la desigualdad
• equal	igual

2.NBT.4 Examples:

Example: Compare 452 and 455.
Student 1: Student might explain 452 has 4 hundreds 5 tens and 2 ones and 455 has 4 hundreds 5 tens and 5 ones. They have the same number of hundreds and the same number of tens, but 455 has 5 ones and 452 only has 2 ones. So, 452 is less than 455 or 452 < 455.
Student 2: Student might think 452 is less than 455. I know this because when I count up I say 452 before I say 455.

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

Name:_______________

2.NBT.4

Use <, >, or = to fill in the blank.

1. 732 861 2. 500 + 40 + 2

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.4

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.A Understand place value.

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

Standard Explanation

Second grade students use the symbols for greater than (>), less than (<) and equal to (=) to compare numbers within 1000 (2.NBT.4▲). Students build on work in standards (2.NBT.1▲) and (2.NBT.3▲) by examining the amounts of hundreds, tens, and ones in each number. To compare numbers, students apply their understanding of place value. The goal is for students to understand they look at the numerals in the hundreds place first, then the tens place, and if necessary the ones place. Students should have experience communicating their comparisons in words before using only symbols to indicate greater than, less than, and equal to.

As students compare numbers they also develop mathematical practices such as making sense of quantities (MP.2), understanding the meaning of symbols (MP.6), and making use of number patterns and structures in the number system (MP.7).

2.NBT.4 Illustrative Tasks:

- Ordering 3-digit Numbers, https://www.illustrativemathematics.org/illustrations/7

1. Arrange the following numbers from least to greatest:

476 647 74 674 467

_____ _____ _____ _____ _____

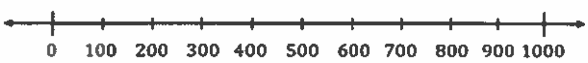
2. Arrange the following numbers from greatest to least:

326 362 63 623 632

_____ _____ _____ _____ _____

Number Line Comparisons, https://www.illustrativemathematics.org/illustrations/371

a. Plot the following numbers on the number line.



b. Choose eight pairs of numbers from those you plotted on the number line. Compare them.

i. _____ > _____
ii. _____ > _____
iii. _____ > _____
iv. _____ > _____
v. _____ < _____
vi. _____ < _____
vii. _____ < _____
viii. _____ < _____

2nd Grade – CCSS for Mathematics

2.NBT.A Understand place value.

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

Standard Explanation

Second grade students use the symbols for greater than (>), less than (<) and equal to (=) to compare numbers within 1000 (2.NBT.4▲). Students build on work in standards (2.NBT.1▲) and (2.NBT.3▲) by examining the amounts of hundreds, tens, and ones in each number. To compare numbers, students apply their understanding of place value. The goal is for students to understand they look at the numerals in the hundreds place first, then the tens place, and if necessary the ones place. Students should have experience communicating their comparisons in words before using only symbols to indicate greater than, less than, and equal to.

As students compare numbers they also develop mathematical practices such as making sense of quantities (MP.2), understanding the meaning of symbols (MP.6), and making use of number patterns and structures in the number system (MP.7).

2.NBT.4 Illustrative Tasks:

- Ordering 3-digit Numbers, https://www.illustrativemathematics.org/illustrations/7

1. Arrange the following numbers from least to greatest:

476 647 74 674 46

_____ _____ _____ _____ _____

2. Arrange the following numbers from greatest to least:

326 362 63 623 63

_____ _____ _____ _____ _____

- Number Line Comparisons, https://www.illustrativemathematics.org/illustrations/371

a. Plot the following numbers on the number line.

b. Choose eight pairs of numbers from those you plotted on the number line. Compare them.

i. _____ > _____
ii. _____ > _____
iii. _____ > _____
iv. _____ > _____
v. _____ < _____
vi. _____ < _____
vii. _____ < _____
viii. _____ < _____

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Essential Skills and Concepts:

- ☐ Add and subtract within 100 using strategies
- ☐ Understand and use the relationship between addition and subtraction (i.e. inverse operations, fact families)
- ☐ Explain strategies for adding and subtracting
- ☐ Use place value understanding to add and subtract

Question Stems and Prompts:

- ✓ What is the total sum of ___ and ___? How do you know?
- ✓ Solve this problem in at least two different ways. How are your strategies related?
- ✓ How might you illustrate your strategy using a number line diagram?

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
• fluently	fluidez
• relationship	relación
Tier 3	
• addition	adición
• subtraction	sustracción
• properties of operations	propiedades de las operaciónes

Standards Connections
2.NBT.5 – 2.OA.1

2.NBT.5 Examples:

Strategies for Addition and Subtraction
Addition strategies based on place value for 48 + 37 may include: • Adding by place value: 40 + 30 = 70 and 8 + 7 = 15 and 70 + 15 = 85. • Incremental adding (by tens and ones): 48 + 10 = 58, 58 + 10 = 68, 68 + 10 = 78, 78 + 7 = 85 • Composing and decomposing (making a "friendly" number): 48 + 2 = 50, 37 – 2 = 35, 50 + 35 = 85
Subtraction strategies based on place value for 81 – 37 may include: • Adding up (from smaller number to larger number): 37 + 3 = 40, 40 + 40 = 80, 80 + 1 = 81, and 3 + 40 + 1 = 44. • Incremental subtracting: 81 – 10 = 71, 71 – 10 = 61, 61 – 10 = 51, 51 – 7 = 44 • Subtracting by place value: 81 – 30 = 51, 51 – 7 = 44

67 + 25 = __

Place Value Strategy:
I broke both 67 and 25 into tens and ones. 6 tens plus 2 tens equals 8 tens. Then I added the ones. 7 ones plus 5 ones equals 12 ones. I then combined my tens and ones. 8 tens plus 12 ones equals 92.
Decomposing into Tens:
I decided to start with 67 and break 25 apart. I knew I needed 3 more to get to 70, so I broke off a 3 from the 25. I then added my 20 from the 22 left and got to 90. I had 2 left. 90 plus 2 is 92. So, 67 + 25 = 92

2nd Grade – CCSS for Mathematics

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

2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Essential Skills and Concepts:

- ☐ Add and subtract within 100 using strategies
- ☐ Understand and use the relationship between addition and subtraction (i.e. inverse operations, fact families)
- ☐ Explain strategies for adding and subtracting
- ☐ Use place value understanding to add and subtract

Question Stems and Prompts:

- ✓ What is the total sum of ___ and ___? How do you know?
- ✓ Solve this problem in at least two different ways. How are your strategies related?
- ✓ How might you illustrate your strategy using a number line diagram?

Vocabulary	Spanish Cognates
Tier 2	
• strategy	estrategia
• fluently	fluidez
• relationship	relación
Tier 3	
• addition	adición
• subtraction	sustracción
• properties of operations	propiedades de las operaciónes

Standards Connections
2.NBT.5 – 2.OA.1

2.NBT.5 Examples:

Strategies for Addition and Subtraction
Addition strategies based on place value for 48 + 37 may include: • Adding by place value: 40 + 30 = 70 and 8 + 7 = 15 and 70 + 15 = 85. • Incremental adding (by tens and ones): 48 + 10 = 58, 58 + 10 = 68, 68 + 10 = 78, 78 + 7 = 85 • Composing and decomposing (making a "friendly" number): 48 + 2 = 50, 37 – 2 = 35, 50 + 35 = 85
Subtraction strategies based on place value for 81 – 37 may include: • Adding up (from smaller number to larger number): 37 + 3 = 40, 40 + 40 = 80, 80 + 1 = 81, and 3 + 40 + 1 = 44. • Incremental subtracting: 81 – 10 = 71, 71 – 10 = 61, 61 – 10 = 51, 51 – 7 = 44 • Subtracting by place value: 81 – 30 = 51, 51 – 7 = 44

67 + 25 = __

Place Value Strategy:
I broke both 67 and 25 into tens and ones. 6 tens plus 2 tens equals 8 tens. Then I added the ones. 7 ones plus 5 ones equals 12 ones. I then combined my tens and ones. 8 tens plus 12 ones equals 92.
Decomposing into Tens:
I decided to start with 67 and break 25 apart. I knew I needed 3 more to get to 70, so I broke off a 3 from the 25. I then added my 20 from the 22 left and got to 90. I had 2 left. 90 plus 2 is 92. So, 67 + 25 = 92

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.B.5

Standard Explanation

Standards (2.NBT.5-7▲) are crucial for attaining one of the four critical areas of instruction in grade two. It is here that students apply models of addition and subtraction to develop, discuss and later use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation. While students become fluent in such methods within 100 at grade two, they also use these methods for sums and differences within 1000. All methods for adding and subtracting two- and three-digit numbers should be based on place value and should be learned by students with an emphasis on understanding. Math drawings should accompany such written methods as students become familiar with them.

There are various strategies that Second Grade students understand and use when adding and subtracting within 100 (such as those listed in the standard). The standard algorithm of carrying or borrowing is neither an expectation nor a focus in Second Grade. Students use multiple strategies for addition and subtraction in Grades K-3.

Written methods for addition and subtraction are based on two important features of the base-10 number system:

- When adding or subtracting numbers in the base-10 system, like units are added or subtracted (e.g., ones are added to ones, tens to tens, hundreds to hundreds).
- Adding and subtracting multi-digit numbers written in base-10 can be facilitated by composing and decomposing units appropriately, so as to reduce the methods to simply doing additions and subtractions within 20 (e.g., 10 ones make 1 ten, 100 ones make 1 hundred, 1 hundred makes 10 tens).

(CA *Mathematics Framework*, adopted Nov. 6, 2013)

2.NBT.7 Illustrative Tasks:

- How Many Days Until Summer Vacation? https://www.illustrativemathematics.org/illustrations/1063

We are in school 180 days. Today is the 124th day of school. How many more days until we are out of school for summer vacation? Explain how you know.

- How Many Days Until Summer Vacation? https://www.illustrativemathematics.org/illustrations/1628

Part 2

After the class has talked about all the ways they could solve the two digit addition problem the teacher should put the following three digit addition problem on the board:

$$\begin{array}{r} 224 \\ +132 \\ \hline \end{array}$$

The students should look over the brainstormed list of solution ways and see if each solution would also apply to solving three digit addition problems. (They all should work for both two and three digit addition problems.) The class can then talk about how their skills for two digit problem solving transfer to three digit problem solving.

2nd Grade – CCSS for Mathematics

2.NBT.B.5

Standard Explanation

Standards (2.NBT.5-7▲) are crucial for attaining one of the four critical areas of instruction in grade two. It is here that students apply models of addition and subtraction to develop, discuss and later use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation. While students become fluent in such methods within 100 at grade two, they also use these methods for sums and differences within 1000. All methods for adding and subtracting two- and three-digit numbers should be based on place value and should be learned by students with an emphasis on understanding. Math drawings should accompany such written methods as students become familiar with them.

There are various strategies that Second Grade students understand and use when adding and subtracting within 100 (such as those listed in the standard). The standard algorithm of carrying or borrowing is neither an expectation nor a focus in Second Grade. Students use multiple strategies for addition and subtraction in Grades K-3.

Written methods for addition and subtraction are based on two important features of the base-10 number system:

- When adding or subtracting numbers in the base-10 system, like units are added or subtracted (e.g., ones are added to ones, tens to tens, hundreds to hundreds).
- Adding and subtracting multi-digit numbers written in base-10 can be facilitated by composing and decomposing units appropriately, so as to reduce the methods to simply doing additions and subtractions within 20 (e.g., 10 ones make 1 ten, 100 ones make 1 hundred, 1 hundred makes 10 tens).

(CA Mathematics Framework, adopted Nov. 6, 2013)

2.NBT.7 Illustrative Tasks:

- How Many Days Until Summer Vacation? https://www.illustrativemathematics.org/illustrations/1063

We are in school 180 days. Today is the 124th day of school. How many more days until we are out of school for summer vacation? Explain how you know.

- How Many Days Until Summer Vacation? https://www.illustrativemathematics.org/illustrations/1628

Part 2

After the class has talked about all the ways they could solve the two digit addition problem the teacher should put the following three digit addition problem on the board:

224
+132

The students should look over the brainstormed list of solution ways and see if each solution would also apply to solving three digit addition problems. (They all should work for both two and three digit addition problems.) The class can then talk about how their skills for two digit problem solving transfer to three digit problem solving.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

Essential Skills and Concepts:
- ☐ Understand and use place value strategies
- ☐ Add up to four two-digit numbers
- ☐ Explain the strategy used for adding multiple two-digit numbers

Question Stems and Prompts:
- ✓ Add these four amounts. What strategy did you use?
- ✓ How did you use to place value to help you add?
- ✓ What is the sum of these four numbers?
- ✓ Here is a sample student strategy. Think about and explain what you see in the sample work.

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
Tier 3	
• place value	
• properties of operations	propiedades de las operaciónes

2.NBT.6 Examples:

Example: Find the sum, 43 + 34 + 57 + 24.
Student A (Commutative and Associative Properties): I saw the 43 and 57 and added them first. I know 3 plus 7 equals 10, so when I added them 100 was my answer. Then I added 34 and had 134. Then I added 24 and had 158. So 43 + 57 + 34 + 24 = 158.
Student B (Place Value Strategies): I broke up all of the numbers into tens and ones. First I added the tens. 40 + 30 + 50 + 20 = 140. Then I added the ones. 3 + 4 + 7 + 4 =18. That meant I had 1 ten and 8 ones. So, 140 + 10 is 150. 150 and 8 more is 158. So, 43 + 34 + 57 + 24 = 158.
Student C (Place Value Strategies and Commutative and Associative Property): I broke up all the numbers into tens and ones. First I added up the tens, 40 + 30 + 50 + 20. I changed the order of the numbers to make adding easier. I know that 30 plus 20 equals 50 and 50 more equals 100. Then I added the 40 and got 140. Then I added up the ones. 3 + 4 + 7 + 4. I changed the order of the numbers to make adding easier. I know that 3 plus 7 equals 10 and 4 plus 4 equals 8. 10 plus 8 equals 18. I then combined my tens and my ones. 140 plus 18 (1 ten and 8 ones) equals 158.

California *Mathematics Framework*, November 6, 2013, http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp

2nd Grade – CCSS for Mathematics

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

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

Essential Skills and Concepts:
- ☐ Understand and use place value strategies
- ☐ Add up to four two-digit numbers
- ☐ Explain the strategy used for adding multiple two-digit numbers

Question Stems and Prompts:
- ✓ Add these four amounts. What strategy did you use?
- ✓ How did you use to place value to help you add?
- ✓ What is the sum of these four numbers?
- ✓ Here is a sample student strategy. Think about and explain what you see in the sample work.

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
Tier 3	
• place value	
• properties of operations	propiedades de las operaciónes

2.NBT.6 Examples:

Example: Find the sum, 43 + 34 + 57 + 24.
Student A (Commutative and Associative Properties): I saw the 43 and 57 and added them first. I know 3 plus 7 equals 10, so when I added them 100 was my answer. Then I added 34 and had 134. Then I added 24 and had 158. So 43 + 57 + 34 + 24 = 158.
Student B (Place Value Strategies): I broke up all of the numbers into tens and ones. First I added the tens. 40 + 30 + 50 + 20 = 140. Then I added the ones. 3 + 4 + 7 + 4 =18. That meant I had 1 ten and 8 ones. So, 140 + 10 is 150. 150 and 8 more is 158. So, 43 + 34 + 57 + 24 = 158.
Student C (Place Value Strategies and Commutative and Associative Property): I broke up all the numbers into tens and ones. First I added up the tens, 40 + 30 + 50 + 20. I changed the order of the numbers to make adding easier. I know that 30 plus 20 equals 50 and 50 more equals 100. Then I added the 40 and got 140. Then I added up the ones. 3 + 4 + 7 + 4. I changed the order of the numbers to make adding easier. I know that 3 plus 7 equals 10 and 4 plus 4 equals 8. 10 plus 8 equals 18. I then combined my tens and my ones. 140 plus 18 (1 ten and 8 ones) equals 158.

California *Mathematics Framework*, November 6, 2013, http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

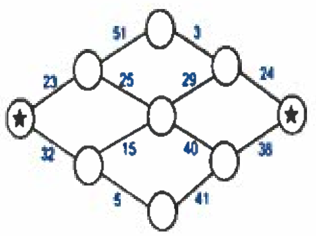
Standard Explanation

Second Grade students add a string of two-digit numbers (up to four numbers) by applying place value strategies and properties of operations. Students can utilize many of the other strategies that they have been using to add when adding multiple two-digit numbers. Strategies they may use include: making a ten, decomposing numbers by their place value, using an open number line.

2.NBT.6 Illustrative Tasks:

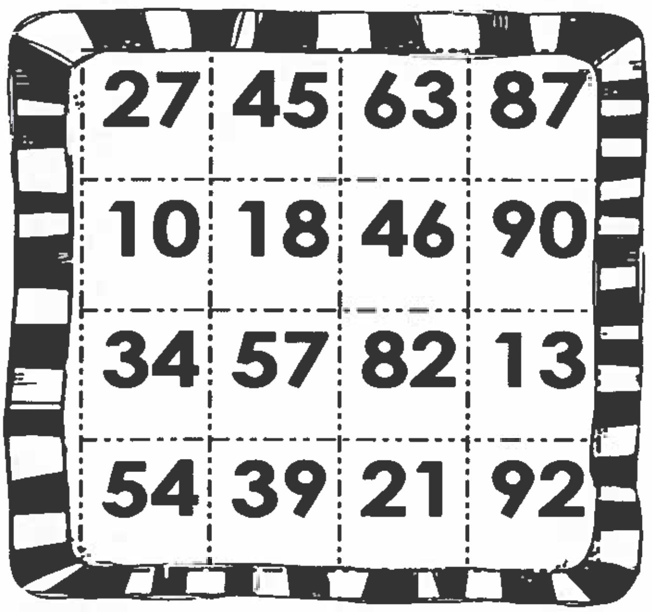
- Ordering 3-digit Numbers, https://www.illustrativemathematics.org/illustrations/755

The picture shows islands connected by bridges. To cross a bridge, you must pay a toll in coins. If you start on the island marked in blue with 100 coins, how can you make it to the island marked in red?



2.NBT.6 Example:

Toss two, three, or four chips on the mat. Add the numbers the chips are on.



Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.6

2nd Grade – CCSS for Mathematics

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

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

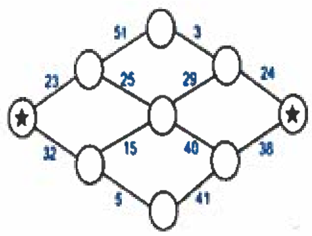
Standard Explanation

Second Grade students add a string of two-digit numbers (up to four numbers) by applying place value strategies and properties of operations. Students can utilize many of the other strategies that they have been using to add when adding multiple two-digit numbers. Strategies they may use include: making a ten, decomposing numbers by their place value, using an open number line.

2.NBT.6 Illustrative Tasks:

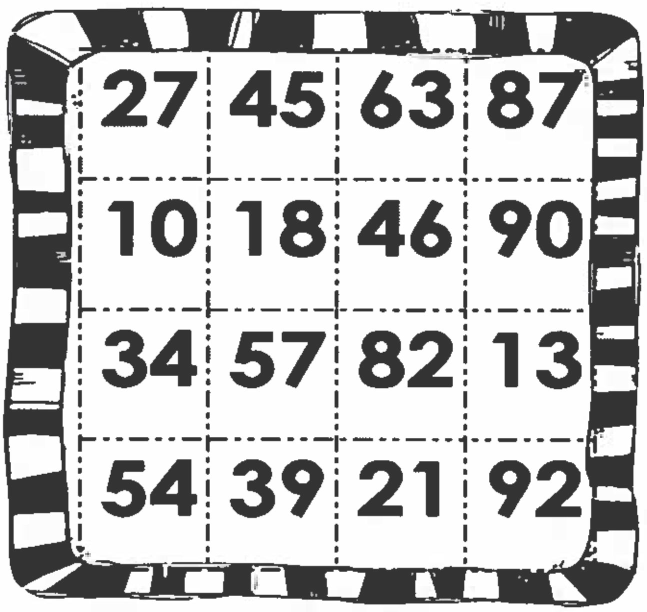
- Ordering 3-digit Numbers, https://www.illustrativemathematics.org/illustrations/755

The picture shows islands connected by bridges. To cross a bridge, you must pay a toll in coins. If you start on the island marked in blue with 100 coins, how can you make it to the island marked in red?



2.NBT.6 Example:

Toss two, three, or four chips on the mat. Add the numbers the chips are on.



Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.6

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

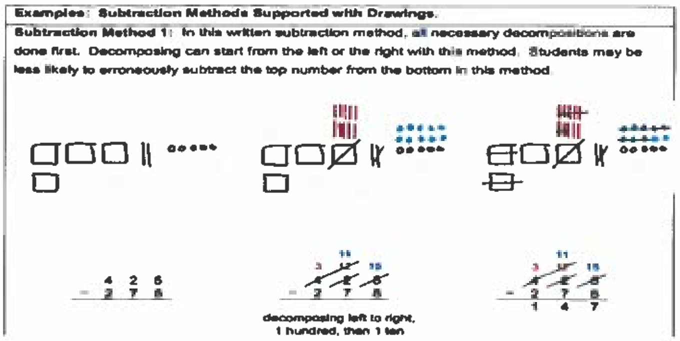
2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

Essential Skills and Concepts:
- ☐ Add and subtract within 1000 using concrete models and strategies
- ☐ Understand and use the relationship between addition and subtraction
- ☐ Use place value understanding to add each place value
- ☐ Explain strategies used to add and subtract

Question Stems and Prompts:
- ✓ What is the total sum of ___ and ___?
- ✓ What is the total when you take away ___ from ___?
- ✓ Use a different strategy to find the answer.
- ✓ Which strategy did you use? Explain your thinking.
- ✓ How does your strategy compare to other strategies used?

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
• model	modelo
• compose	componer
• decompose	descomponer
Tier 3	
• addition	adición
• subtraction	sustracción
• inverse operation	operación inversa
• equation	ecuación

Standards Connections
2.NBT.7 → 2.NBT.6, 2.NBT.7 – 2.NBT.8



2nd Grade – CCSS for Mathematics

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

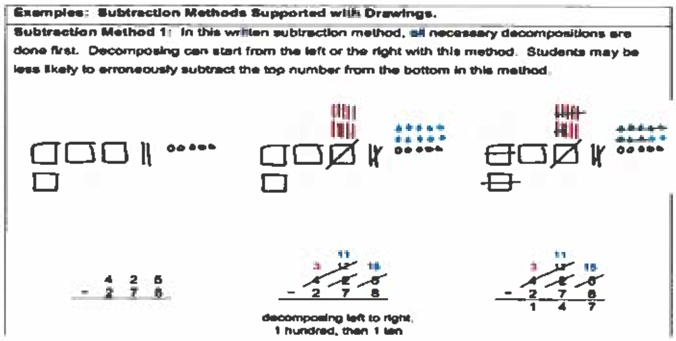
2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

Essential Skills and Concepts:
☐ Add and subtract within 1000 using concrete models and strategies
☐ Understand and use the relationship between addition and subtraction
☐ Use place value understanding to add each place value
☐ Explain strategies used to add and subtract

Question Stems and Prompts:
✓ What is the total sum of ___ and ___?
✓ What is the total when you take away ___ from ___?
✓ Use a different strategy to find the answer.
✓ Which strategy did you use? Explain your thinking.
✓ How does your strategy compare to other strategies used?

Vocabulary / Spanish Cognates
Tier 2
• strategy – estrategia
• model – modelo
• compose – componer
• decompose – descomponer
Tier 3
• addition – adición
• subtraction – sustracción
• inverse operation – operación inversa
• equation – ecuación

Standards Connections
2.NBT.7 → 2.NBT.6, 2.NBT.7 – 2.NBT.8



Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.NBT.B.7

Standard Explanation

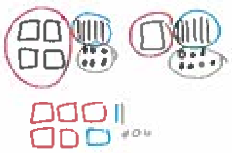
Second graders extend the work from 2.NBT.5, adding and subtracting with 2-digit numbers, to working with 3-digit numbers. Students should have ample experiences using concrete materials and pictorial representations to support their work. This standard also references composing and decomposing a ten. This work should include strategies such as making a 10, making a 100, breaking apart a 10, or creating an easier problem. The standard algorithm of carrying or borrowing is not an expectation in Second Grade. Students are not expected to add and subtract whole numbers using a standard algorithm until the end of Fourth Grade.

Students first work with math drawings or manipulatives alongside the written methods; they will eventually move on to just using written methods, mentally constructing pictures as necessary and using other strategies. Teachers should note the importance of these methods; they generalize to larger numbers and decimals and emphasize the regrouping nature of combining units. Note that these two methods are only examples and are not meant to represent all such place value methods.

Students will encounter situations where students "don't have enough" to subtract. Note that this is more precise than saying, "You can't subtract a larger number from a smaller number," or the like, as the latter statement is a false
mathematical statement. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

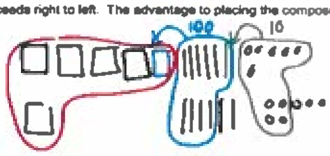
Examples: Addition Methods Supported with Drawings.

Addition Method 1: In this written addition method, all partial sums are recorded underneath the addition bar. This particular example shows the addition being performed from left to right, but students can also do this from right to left. In the accompanying drawing, it is clear that hundreds are added to hundreds, tens to tens, and ones to ones, which are eventually grouped into larger units where possible to represent the total, 623.



$$\begin{array}{r} 456 \\ +\ 167 \\ \hline \end{array} \qquad \begin{array}{r} 456 \\ +\ 167 \\ \hline 500 \end{array} \qquad \begin{array}{r} 456 \\ +\ 167 \\ \hline 500 \\ 110 \end{array} \qquad \begin{array}{r} 456 \\ +\ 167 \\ \hline 500 \\ 110 \\ 13 \\ \hline 623 \end{array}$$

Addition Method 2: In this written addition method, digits representing newly composed units are placed below the addends from which they were derived, to the right to indicate that they are represented a newly composed, larger unit. The addition proceeds right to left. The advantage to placing the composed units as shown is that it is clearer where they came from, e.g., the "1" and "3" that came from the sum of the ones-place digits (6 +7) are close to each other. This eliminates confusion that can arise from traditional methods involving "carrying", which tends to separate the two digits that came from 13 and obscure the meaning of the numbers.



$$\begin{array}{r} 456 \\ +\ 167 \\ \hline \end{array} \qquad \begin{array}{r} 456 \\ +\ 167 \\ {}_{1}\ \ \\ \hline 3 \end{array} \qquad \begin{array}{r} 456 \\ +\ 167 \\ {}_{1\,1}\ \ \\ \hline 23 \end{array} \qquad \begin{array}{r} 456 \\ +\ 167 \\ {}_{1\,1}\ \ \\ \hline 623 \end{array}$$

Add the ones, 6+7, and record these 13 with 3 in the ones place and a 1 underneath the tens column.

Add the tens, 5+6+1, and record these 12 tens with 2 in the tens place and 1 under the hundreds column.

Add the hundreds, 4+1+1 and record these 6 hundreds in the hundreds column.

2nd Grade – CCSS for Mathematics

2.NBT.B.7

Standard Explanation

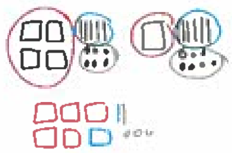
Second graders extend the work from 2.NBT.5, adding and subtracting with 2-digit numbers, to working with 3-digit numbers. Students should have ample experiences using concrete materials and pictorial representations to support their work. This standard also references composing and decomposing a ten. This work should include strategies such as making a 10, making a 100, breaking apart a 10, or creating an easier problem. The standard algorithm of carrying or borrowing is not an expectation in Second Grade. Students are not expected to add and subtract whole numbers using a standard algorithm until the end of Fourth Grade.

Students first work with math drawings or manipulatives alongside the written methods; they will eventually move on to just using written methods, mentally constructing pictures as necessary and using other strategies. Teachers should note the importance of these methods; they generalize to larger numbers and decimals and emphasize the regrouping nature of combining units. Note that these two methods are only examples and are not meant to represent all such place value methods.

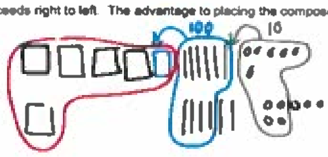
Students will encounter situations where students "don't have enough" to subtract. Note that this is more precise than saying, "You can't subtract a larger number from a smaller number," or the like, as the latter statement is a false
mathematical statement. (CA Mathematics Framework, adopted Nov. 6, 2013)

Examples: Addition Methods Supported with Drawings.

Addition Method 1: In this written addition method, all partial sums are recorded underneath the addition bar. This particular example shows the addition being performed from left to right, but students can also do this from right to left. In the accompanying drawing, it is clear that hundreds are added to hundreds, tens to tens, and ones to ones, which are eventually grouped into larger units where possible to represent the total, 623.



Addition Method 2: In this written addition method, digits representing newly composed units are placed below the addends from which they were derived, to the right to indicate that they are represented a newly composed, larger unit. The addition proceeds right to left. The advantage to placing the composed units as shown is that it is clearer where they came from, e.g., the "1" and "3" that came from the sum of the ones-place digits (6 +7) are close to each other. This eliminates confusion that can arise from traditional methods involving "carrying", which tends to separate the two digits that came from 13 and obscure the meaning of the numbers.



Add the ones, 6+7, and record these 13 with 3 in the ones place and a 1 underneath the tens column.

Add the tens, 5+6+1, and record these 12 tens with 2 in the tens place and 1 under the hundreds column.

Add the hundreds, 4+1+1 and record these 6 hundreds in the hundreds column.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.NBT.7.1 Use estimation strategies to make reasonable estimates in problem solving. CA

Essential Skills and Concepts:
- ☐ Use and discuss estimation strategies for solving problems
- ☐ Understand what makes an estimate reasonable

Question Stems and Prompts:
- ✓ Before adding these numbers, create an estimate.
  - What is an estimate that you know is too low?
  - What is an estimate that you know is too high?
- ✓ How does estimating before solving a problem help you to know if your answer is reasonable?
- ✓ Estimate how many ____ are in this jar.
- ✓ How long do you think this is?
- ✓ Guess how much ___ it will take to fill this jar.

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
• reasonable	razonable
Tier 3	
• estimate	estimación

2nd Grade – CCSS for Mathematics

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

2.NBT.7.1 Use estimation strategies to make reasonable estimates in problem solving. CA

Essential Skills and Concepts:
- ☐ Use and discuss estimation strategies for solving problems
- ☐ Understand what makes an estimate reasonable

Question Stems and Prompts:
- ✓ Before adding these numbers, create an estimate.
  - What is an estimate that you know is too low?
  - What is an estimate that you know is too high?
- ✓ How does estimating before solving a problem help you to know if your answer is reasonable?
- ✓ Estimate how many ____ are in this jar.
- ✓ How long do you think this is?
- ✓ Guess how much ___ it will take to fill this jar.

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
• reasonable	razonable
Tier 3	
• estimate	estimación

Tulare County Office of Education http://commoncore.tcoe.org/licensing 2nd edition 6/19

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

2.NBT.7.1 Use estimation strategies to make reasonable estimates in problem solving. CA

Standard Explanation

In second grade, students continue to check for reasonableness as they solve problems. They learn a variety of estimation strategies that they can utilize while they are solving problems. Students should discuss their estimation strategies with the class, allowing them to learn from one another and critique each other's reasoning (MP.3).

As students develop their estimating abilities, they should incorporate their estimation strategies into their problem solving work. These strategies will be important as they determine whether or not their solutions are reasonable based on their estimates about the problem.

2nd Grade – CCSS for Mathematics

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

2.NBT.7.1 Use estimation strategies to make reasonable estimates in problem solving. CA

Standard Explanation

In second grade, students continue to check for reasonableness as they solve problems. They learn a variety of estimation strategies that they can utilize while they are solving problems. Students should discuss their estimation strategies with the class, allowing them to learn from one another and critique each other's reasoning (MP.3).

As students develop their estimating abilities, they should incorporate their estimation strategies into their problem solving work. These strategies will be important as they determine whether or not their solutions are reasonable based on their estimates about the problem.

Tulare County Office of Education http://commoncore.tcoe.org/licensing 2nd edition 6/19

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

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

Essential Skills and Concepts:
- ☐ Understand place value and use this understanding to add or subtract 10 or 100 from a given problem
- ☐ Mentally add or subtract 10 from 100-900
- ☐ Mentally add or subtract 100 from 100-900

Question Stems and Prompts:
- ✓ If you add/subtract 10 to _____ what would your total be?
- ✓ If you add/subtract 100 to _____ what would your total be? How do you know?
- ✓ Describe what would happen if you add/subtract 10 or a hundred to a number built using base ten blocks. What would the new number be and how would your model change?

Vocabulary	**Spanish Cognates**
Tier 2	
• mentally	
Tier 3	
• add	
• subtract	
• place value	

Standards Connections
2.NBT.8 – 2.NBT.7, 2.NBT.9

2.NBT.8 Examples:
Within the same hundred
What is 10 more than 218?
What is 241 – 10?

Across hundreds
293 + 10 = ☐
What is 10 less than 206?

2nd Grade – CCSS for Mathematics

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

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

Essential Skills and Concepts:
☐ Understand place value and use this understanding to add or subtract 10 or 100 from a given problem
☐ Mentally add or subtract 10 from 100-900
☐ Mentally add or subtract 100 from 100-900

Question Stems and Prompts:
✓ If you add/subtract 10 to _____ what would your total be?
✓ If you add/subtract 100 to _____ what would your total be? How do you know?
✓ Describe what would happen if you add/subtract 10 or a hundred to a number built using base ten blocks. What would the new number be and how would your model change?

Vocabulary Spanish Cognates
Tier 2
• mentally
Tier 3
• add
• subtract
• place value

Standards Connections
2.NBT.8 – 2.NBT.7, 2.NBT.9

2.NBT.8 Examples:
Within the same hundred
What is 10 more than 218?
What is 241 – 10?

Across hundreds
293 + 10 = ☐
What is 10 less than 206?

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

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

Standard Explanation

Second Grade students mentally add or subtract either 10 or 100 to any number between 100 and 900. As teachers provide ample experiences for students to work with pre-grouped objects and facilitate discussion, second graders realize that when one adds or subtracts 10 or 100 that only the tens place or the digit in the hundreds place changes by 1. As the teacher facilitates opportunities for patterns to emerge and be discussed, students notice the patterns and connect the digit change with the amount changed. Opportunities to solve problems in which students cross hundreds are also provided once students have become comfortable adding and subtracting within the same hundred.

2nd Grade – CCSS for Mathematics

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

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

Standard Explanation

Second Grade students mentally add or subtract either 10 or 100 to any number between 100 and 900. As teachers provide ample experiences for students to work with pre-grouped objects and facilitate discussion, second graders realize that when one adds or subtracts 10 or 100 that only the tens place or the digit in the hundreds place changes by 1. As the teacher facilitates opportunities for patterns to emerge and be discussed, students notice the patterns and connect the digit change with the amount changed. Opportunities to solve problems in which students cross hundreds are also provided once students have become comfortable adding and subtracting within the same hundred.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.[3]

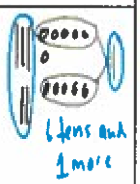
Essential Skills and Concepts:
- ☐ Understand strategies for addition and subtraction
- ☐ Explain why the strategy used works
- ☐ Verbalize and write out explanations using drawings and objects for additional support as needed

Question Stems and Prompts:
- ✓ What strategy did you use? Would other strategies work?
- ✓ Why did you choose this strategy?
- ✓ Can you draw out or demonstrate your strategy using objects?
- ✓ Solve this problem using two different strategies.

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
• explanations	explicaciones
Tier 3	
• addition	adición
• subtraction	sustracción
• properties	propiedades
• operations	operaciones

Standards Connections
2.NBT.9 – 2.NBT.7, 2.NBT.8

2.NBT.9 Examples:

Example: There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work.
Student A: I broke 36 and 25 into tens and ones (30 + 6) + (20 + 5). I can change the order of my numbers, since it doesn't change any amounts, so I added 30 + 20 and got 50. Then I added 5 and 5 to make 10 and added it to the 50. So, 50 and 10 more is 60. I added the one that was left over and got 61. So there are 61 birds in the park.
Student B: I used a math drawing and made a pile of 36 and a pile of 25. Altogether, I had 5 tens and 11 ones. 11 ones is the same as one ten and one left over. So, I really had 6 tens and 1 one. That makes 61. 

How are 14 – 9 and 5 + 9 related?
Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.9

[3] Explanations may be supported by drawings or objects.

2nd Grade – CCSS for Mathematics

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

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.[3]

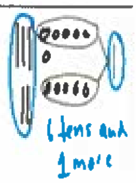
Essential Skills and Concepts:
- ☐ Understand strategies for addition and subtraction
- ☐ Explain why the strategy used works
- ☐ Verbalize and write out explanations using drawings and objects for additional support as needed

Question Stems and Prompts:
- ✓ What strategy did you use? Would other strategies work?
- ✓ Why did you choose this strategy?
- ✓ Can you draw out or demonstrate your strategy using objects?
- ✓ Solve this problem using two different strategies.

Vocabulary	**Spanish Cognates**
Tier 2	
• strategy	estrategia
• explanations	explicaciones
Tier 3	
• addition	adición
• subtraction	sustracción
• properties	propiedades
• operations	operaciones

Standards Connections
2.NBT.9 – 2.NBT.7, 2.NBT.8

2.NBT.9 Examples:

Example: There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work.
Student A: I broke 36 and 25 into tens and ones (30 + 6) + (20 + 5). I can change the order of my numbers, since it doesn't change any amounts, so I added 30 + 20 and got 50. Then I added 5 and 5 to make 10 and added it to the 50. So, 50 and 10 more is 60. I added the one that was left over and got 61. So there are 61 birds in the park.
Student B: I used a math drawing and made a pile of 36 and a pile of 25. Altogether, I had 5 tens and 11 ones. 11 ones is the same as one ten and one left over. So, I really had 6 tens and 1 one. That makes 61.  6 tens and 1 more

How are 14 – 9 and 5 + 9 related?
Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.NBT.9

[3] Explanations may be supported by drawings or objects.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

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

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.[3]

Standard Explanation

Students explain why addition and subtraction strategies work, using place value and the properties of operations. (2.NBT.9▲) Second grade students need multiple opportunities to explain their addition and subtraction thinking (MP.2). For example, students use place value understanding, properties of operations, number names, words (including mathematical language), math drawings, number lines, and/or physical objects to explain why and how they solve a problem (MP.1, MP.6). Students can also critique the work of other students (MP.3) to deepen their understanding of addition and subtraction strategies.

Second graders may use drawings or objects to support their explanation. Students will need frequent opportunities to solve a problem and then discuss their strategies and why they did or didn't work. These opportunities should include both speaking and writing prompts. Students can practice these ideas through the use of math journals, structured partner/group talk, and Number Talks. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Focus, Coherence, and Rigor:

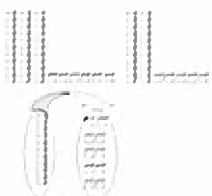
When students explain why addition and subtraction strategies work (2.NBT.9▲), they reinforce foundations for solving one- and two-step word problems (2.OA.1▲) and extend their understanding and use of various strategies and models, drawings, and a written method to add and subtract (2.NBT. 5▲ and 7▲).

2.NBT.9 Examples:

There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work.

Student A
I broke 36 and 25 into tens and ones 30 + 6 + 20 + 5. I can change the order of my numbers, since it doesn't change any amounts, so I added 30+ 20 and got 50. Then I added 5 and 5 to make10 and added it to the 50. So, 50 and 10 more is 60. I added the one that was left over and got on 6 to get 61. So there are 61 birds in the park.

Student B
I used place value blocks and made a pile of 36 and a pile of 25. Altogether, I had 5 tens and 11 ones. 11 ones is the same as one ten and one left over. So, I really had 6 tens and 1 one. That makes 61.



2nd Grade – CCSS for Mathematics

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

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.[3]

Standard Explanation

Students explain why addition and subtraction strategies work, using place value and the properties of operations. (2.NBT.9▲) Second grade students need multiple opportunities to explain their addition and subtraction thinking (MP.2). For example, students use place value understanding, properties of operations, number names, words (including mathematical language), math drawings, number lines, and/or physical objects to explain why and how they solve a problem (MP.1, MP.6). Students can also critique the work of other students (MP.3) to deepen their understanding of addition and subtraction strategies.

Second graders may use drawings or objects to support their explanation. Students will need frequent opportunities to solve a problem and then discuss their strategies and why they did or didn't work. These opportunities should include both speaking and writing prompts. Students can practice these ideas through the use of math journals, structured partner/group talk, and Number Talks. (CA Mathematics Framework, adopted Nov. 6, 2013)

Focus, Coherence, and Rigor:

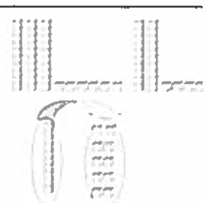
When students explain why addition and subtraction strategies work (2.NBT.9▲), they reinfo foundations for solving one- and two-step word problems (2.OA.1▲) and extend their understanding and use of various strategies and models, drawings, and a written method to a and subtract (2.NBT. 5▲ and 7▲).

2.NBT.9 Examples:

There are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work.

Student A
I broke 36 and 25 into tens and ones 30 + 6 + 20 + 5. I can change the order of my numbers, since it doesn't change any amounts, so I added 30+ 20 and got 50. Then I added 5 and 5 to make10 and added i to the 50. So, 50 and 10 more is 60. I added the one that was left over and got on 6 to get 61. So there ar 61 birds in the park.

Student B
I used place value blocks and made a pile of 36 and a pile of 25. Altogether, I had 5 tens and 11 ones. 11 ones is the same as one ten and one left over. So, I really had 6 tens and 1 one. That makes 61.



[3] Explanations may be supported by drawings or objects.

[3] Explanations may be supported by drawings or objects.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.A Measure and estimate lengths in standard units.

2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

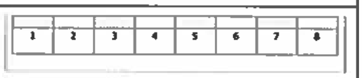
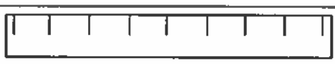
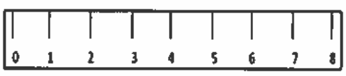
Essential Skills and Concepts:
- ☐ Measure objects with a ruler, yardstick, meter stick, and a measuring tape
- ☐ Recognize and discuss the differences between measuring tools
- ☐ Decide which tool would be best for a given situation and justify your thinking

Question Stems and Prompts:
- ✓ Which measuring tool would you use to measuring this ______? Why?
- ✓ Which measuring tool would be a better choice to measure this ________? Why?
- ✓ Would it be appropriate to use a ruler to measure ____? Why or why not?
- ✓ Can you explain the differences and similarities of a ruler and a yardstick? A yardstick and meter stick?

Vocabulary	**Spanish Cognates**
Tier 2	
• object	objeto
Tier 3	
• measure	
• length	
• ruler	
• yard stick	
• meter stick	

Standards Connections
2.MD.1 → 2.MD.2, 2.MD.3

2.MD.1 Examples:

By helping students progress from a "ruler" that is blocked off into colored units (no numbers)...	
...to a "ruler" that has numbers along with the colored units...	
...to a "ruler" that has inches (centimeters) with and without numbers, students develop the understanding that the numbers on a ruler do not count the individual marks but indicate the spaces (distance) between the marks. This is a critical understand students need when using such tools as rulers, yardsticks, meter sticks, and measuring tapes.	 

2nd Grade – CCSS for Mathematics

2.MD.A Measure and estimate lengths in standard units

2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

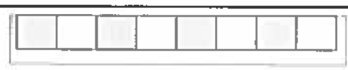
Essential Skills and Concepts:
- ☐ Measure objects with a ruler, yardstick, meter stick, and a measuring tape
- ☐ Recognize and discuss the differences between measuring tools
- ☐ Decide which tool would be best for a given situation and justify your thinking

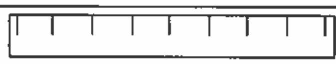
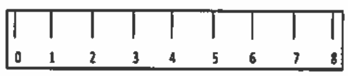
Question Stems and Prompts:
- ✓ Which measuring tool would you use to measuring this ______? Why?
- ✓ Which measuring tool would be a better choice to measure this ________? Why?
- ✓ Would it be appropriate to use a ruler to measure ____? Why or why not?
- ✓ Can you explain the differences and similarities of a ruler and a yardstick? A yardstick and meter stick?

Vocabulary Tier 2 • object — **Spanish Cognates** objeto
Tier 3 • measure • length • ruler • yard stick • meter stick

Standards Connections
2.MD.1 → 2.MD.2, 2.MD.3

2.MD.1 Examples:

By helping students progress from a "ruler" that is blocked off into colored units (no numbers)...
...to a "ruler" that has numbers along with the colored units...
...to a "ruler" that has inches (centimeters) with and without numbers, students develop the understanding that the numbers on a ruler do not count the individual marks but indicate the spaces (distance) between the marks. This is a critical understand students need when using such tools as rulers, yardsticks, meter sticks, and measuring tapes.


Tulare County Office of Education
http://commoncore.tcoe.org/licensin
2nd edition 6/19

2.MD.A.1

Standard Explanation

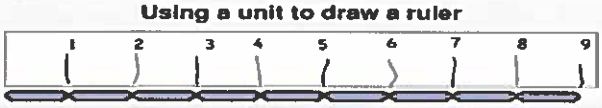
Second graders are transitioning from measuring lengths with informal or nonstandard units to measuring with standard units—inches, feet, centimeters, and meters—and using standard measurement tools (2.MD.1▲). Students learn the measure of length as a count of how many units are needed to match the length of the object or distance being measured. Using both customary (inches and feet) and metric (centimeters and meters) units, students measure the length of objects with rulers, yardsticks, meter sticks, and tape measures. Students become familiar with standard units (e.g., 12 inches in a foot, 3 feet in a yard, and 100 centimeters in a meter) and how to estimate lengths. (Adapted from KATM 2nd 434 FlipBook 2012).

As teachers provide rich tasks that ask students to perform real measurements, these foundational understandings of measurement are developed:

- Understand that larger units (e.g., yard) can be subdivided into equivalent units (e.g., inches) (partition).
- Understand that the same object or many objects of the same size such as paper clips can be repeatedly used to determine the length of an object (iteration).
- Understand the relationship between the size of a unit and the number of units needed (compensatory principal). Thus, the smaller the unit, the more units it will take to measure the selected attribute.

Students also can learn accurate procedures and concepts by drawing simple unit rulers. Using copies of a single length-unit such as inch-long manipulatives, Students mark off length-units on strips of paper, explicitly connecting measurement with the ruler to measurement by iterating physical units. Thus, students' first rulers are simple tools to help count the iteration of length-units. Frequently comparing results of measuring the same object with manipulative standard units and with student-created rulers can help students connect their experiences and ideas. As they build and use these tools, they develop the ideas of length-unit iteration, correct alignment (with a ruler), and the zero-point concept (the idea that the zero of the ruler indicates one endpoint of a length). (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Using a unit to draw a ruler



Students use a standard unit (shown in below the ruler) to make rulers, helping them to understand the meaning of the markings on rulers.

(K-5, Geometric Measurement Progression)

2nd Grade – CCSS for Mathematics

2.MD.A.1

Standard Explanation

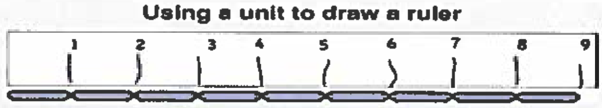
Second graders are transitioning from measuring lengths with informal or nonstandard units to measuring with standard units—inches, feet, centimeters, and meters—and using standard measurement tools (2.MD.1▲). Students learn the measure of length as a count of how many units are needed to match the length of the object or distance being measured. Using both customary (inches and feet) and metric (centimeters and meters) units, students measure the length of objects with rulers, yardsticks, meter sticks, and tape measures. Students become familiar with standard units (e.g., 12 inches in a foot, 3 feet in a yard, and 100 centimeters in a meter) and how to estimate lengths. (Adapted from KATM 2nd 434 FlipBook 2012).

As teachers provide rich tasks that ask students to perform real measurements, these foundational understandings of measurement are developed:

- Understand that larger units (e.g., yard) can be subdivided into equivalent units (e.g., inches) (partition).
- Understand that the same object or many objects of the same size such as paper clips can be repeatedly used to determine the length of an object (iteration).
- Understand the relationship between the size of a unit and the number of units needed (compensatory principal). Thus, the smaller the unit, the more units it will take to measure the selected attribute.

Students also can learn accurate procedures and concepts by drawing simple unit rulers. Using copies of a single length-unit such as inch-long manipulatives, Students mark off length-units on strips of paper, explicitly connecting measurement with the ruler to measurement by iterating physical units. Thus, students' first rulers are simple tools to help count the iteration of length-units. Frequently comparing results of measuring the same object with manipulative standard units and with student-created rulers can help students connect their experiences and ideas. As they build and use these tools, they develop the ideas of length-unit iteration, correct alignment (with a ruler), and the zero-point concept (the idea that the zero of the ruler indicates one endpoint of a length). (CA Mathematics Framework, adopted Nov. 6, 2013)

Using a unit to draw a ruler



Students use a standard unit (shown in below the ruler) to make rulers, helping them to understand the meaning of the markings on rulers.

(K-5, Geometric Measurement Progression)

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2nd Grade – CCSS for Mathematics

2.MD.A Measure and estimate lengths in standard units.

2.MD.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.

Essential Skills and Concepts:
- ☐ Measure an object twice with two different length units (inch squares, cm cubes, paperclips, crayon, etc.)
- ☐ Compare and discuss the results of your measurements

Question Stems and Prompts:
- ✓ Measure this _____ with cm cubes and then with inch squares. What is the length using each unit?
- ✓ Which measuring unit took the most units?
- ✓ Which measure unit took the least units?
- ✓ Which measuring unit is a better choice to measure ______? Explain your thinking.

Vocabulary	**Spanish Cognates**
Tier 2	
• compare	comparar
• object	objeto
• unit	unidad
Tier 3	
• measure	
• length	
• inch	
• centimeter	centímetro

Standards Connections
2.MD.2 → 3.NF.1

2.MD.2 Examples:

A student measured the length of a desk in both feet and inches. She found that the desk was 3 feet long. She also found out that it was 36 inches long.

Teacher: Why do you think you have two different measurements for the same desk?
Student: It only took 3 feet because the feet are so big. It took 36 inches because an inch is a whole lot smaller than a foot.

2.MD.A Measure and estimate lengths in standard units

2.MD.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.

Essential Skills and Concepts:
- ☐ Measure an object twice with two different length units (inch squares, cm cubes, paperclips, crayon, etc.)
- ☐ Compare and discuss the results of your measurements

Question Stems and Prompts:
- ✓ Measure this _____ with cm cubes and then with inch squares. What is the length using each unit?
- ✓ Which measuring unit took the most units?
- ✓ Which measure unit took the least units?
- ✓ Which measuring unit is a better choice to measure ______? Explain your thinking.

Vocabulary	**Spanish Cognates**
Tier 2	
• compare	comparar
• object	objeto
• unit	unidad
Tier 3	
• measure	
• length	
• inch	
• centimeter	centímetro

Standards Connections
2.MD.2 → 3.NF.1

2.MD.2 Examples:

A student measured the length of a desk in both feet and inches. She found that the desk was 3 feet long. She also found out that it was 36 inches long.

Teacher: Why do you think you have two different measurements for the same desk?
Student: It only took 3 feet because the feet are so big. It took 36 inches because an inch is a whole lot smaller than a foot.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.A Measure and estimate lengths in standard units.

2.MD.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]

Standard Explanation

Second graders learn the concept of the inverse relationship between the size of the unit of length and the number of units required to cover a specific length or distance, specifically, that the larger the unit, the fewer units needed to measure something, and vice versa (2.MD.2▲).

Second graders learn the concept of the inverse relationship between the size of the unit of length and the number of units required to cover a specific length or distance. Students measure the length of the same object using units of different lengths (ruler with inches vs. ruler with centimeters or a foot ruler vs. a yardstick) and discuss the relationship between the size of the units and measurements.

Second Grade students measure an object using two units of different lengths. This experience helps students realize that the unit used is as important as the attribute being measured. This is a difficult concept for young children and will require numerous experiences for students to predict, measure, and discuss outcomes.

Students use this information to understand how to select appropriate tools for measuring a given object. For instance, a student might think, "The longer the unit, the fewer I need." Measurement problems also support mathematical practices such reasoning quantitatively (MP.2), justifying conclusions (MP.3), using appropriate tools (MP.5), attending to precision (MP.6), and making use of structure or patterns (MP. 7). (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Matches of different lengths

Row *A* is 5 matches long–when the unit of measurement is white matches. Row *B* is 6 matches long–when the unit of measurement is dark matches. From Inhelder, Sinclair, and Bovet, 1974, *Learning and the Development of Cognition*, *Harvard University Press*.

(K-5, Geometric Measurement Progression)

[3] Explanations may be supported by drawings or objects.

2nd Grade – CCSS for Mathematics

2.MD.A Measure and estimate lengths in standard units

2.MD.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]

Standard Explanation

Second graders learn the concept of the inverse relationship between the size of the unit of length and the number of units required to cover a specific length or distance, specifically, that the larger the unit, the fewer units needed to measure something, and vice versa (2.MD.2▲).

Second graders learn the concept of the inverse relationship between the size of the unit of length and the number of units required to cover a specific length or distance. Students measure the length of the same object using units of different lengths (ruler with inches vs. ruler with centimeters or a foot ruler vs. a yardstick) and discuss the relationship between the size of the units and measurements.

Second Grade students measure an object using two units of different lengths. This experience helps students realize that the unit used is as important as the attribute being measured. This is a difficult concept for young children and will require numerous experiences for students to predict, measure, and discuss outcomes.

Students use this information to understand how to select appropriate tools for measuring a given object. For instance, a student might think, "The longer the unit, the fewer I need." Measurement problems also support mathematical practices such reasoning quantitatively (MP.2), justifying conclusions (MP.3), using appropriate tools (MP.5), attending to precision (MP.6), and making use of structure or patterns (MP. 7). (CA Mathematics Framework, adopted Nov. 6, 2013)

Matches of different lengths

Row A is 5 matches long–when the unit of measurement is white matches. Row B is 6 matches long–when the unit of measurement is dark matches. From Inhelder, Sinclair, and Bovet, 1974, Learning and the Development of Cognition, Harvard University Press.

(K-5, Geometric Measurement Progression)

[3] Explanations may be supported by drawings or objects.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.A Measure and estimate lengths in standard units.

2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.

Essential Skills and Concepts:
- ☐ Estimate a length of an object using inches, feet, centimeters, and meters

Question Stems and Prompts:
- ✓ How many inches do you think this ____ is?
- ✓ How long is ______?
- ✓ Which standard unit would you use to measure this?
- ✓ About how many rulers (1 foot) would it take to measure this?

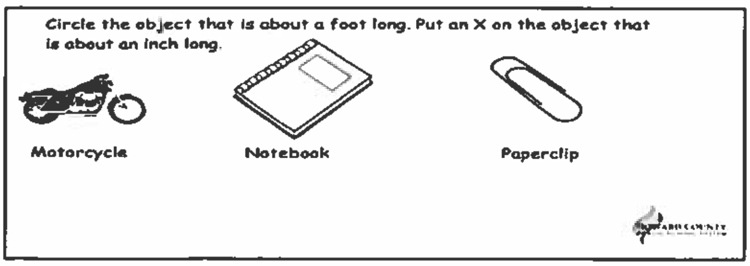
Vocabulary	**Spanish Cognates**
Tier 3	
• measure	
• length	
• standard units	
• estimate	estimación
• inches	
• feet	
• centimeter	centímetro
• meter	metro

Standards Connections
2.MD.3 → 2.MD.2, 2.MD.4

2.MD.3 Examples:

Teacher: How many inches do you think this string is if you measured it with a ruler?
Student: An inch is pretty small. I'm thinking it will be somewhere between 8 and 9 inches.
Teacher: Measure it and see.
Student: It is 9 inches. I thought that it would be somewhere around there.

(North Carolina Department of Public Instruction, Unpacked Content, updated July 2013)



Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.3

2^{nd} *Grade – CCSS for Mathematics*

2.MD.A Measure and estimate lengths in standard units

2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.

Essential Skills and Concepts:
- ☐ Estimate a length of an object using inches, feet, centimeters, and meters

Question Stems and Prompts:
- ✓ How many inches do you think this ____ is?
- ✓ How long is ______?
- ✓ Which standard unit would you use to measure this?
- ✓ About how many rulers (1 foot) would it take to measure this?

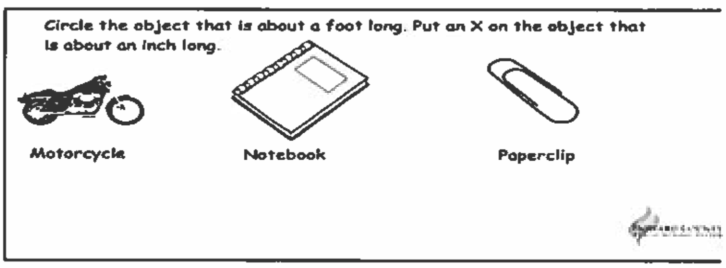
Vocabulary	**Spanish Cognates**
Tier 3	
• measure	
• length	
• standard units	
• estimate	estimación
• inches	
• feet	
• centimeter	centímetro
• meter	metro

Standards Connections
2.MD.3 → 2.MD.2, 2.MD.4

2.MD.3 Examples:

Teacher: How many inches do you think this string is if you measured it with a ruler?
Student: An inch is pretty small. I'm thinking it will be somewhere between 8 and 9 inches.
Teacher: Measure it and see.
Student: It is 9 inches. I thought that it would be somewhere around there.

(North Carolina Department of Public Instruction, Unpacked Content, updated July 2013)



Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.3

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2^{nd} edition 6/19

2.MD.A Measure and estimate lengths in standard units.

2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.

Standard Explanation

Students estimate lengths using units of inches, feet, centimeters, and meters. (2.MD.A.3▲). Students estimate lengths before they measure. After measuring an object, students discuss their estimations, measurement procedures, and the differences between their estimates and the measurements. Students should begin by estimating measurements of familiar items (length of desk, pencil, favorite book, etc.). Estimation helps students focus on the attribute to be measured, the length units, and the process. Students need many experiences with using measuring tools to develop their understanding of linear measurement. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

2nd Grade – CCSS for Mathematics

2.MD.A Measure and estimate lengths in standard units

2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.

Standard Explanation

Students estimate lengths using units of inches, feet, centimeters, and meters. (2.MD.A.3▲). Students estimate lengths before they measure. After measuring an object, students discuss their estimations, measurement procedures, and the differences between their estimates and the measurements. Students should begin by estimating measurements of familiar items (length of desk, pencil, favorite book, etc.). Estimation helps students focus on the attribute to be measured, the length units, and the process. Students need many experiences with using measuring tools to develop their understanding of linear measurement. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Tulare County Office of Education http://commoncore.tcoe.org/licensing 2nd edition 6/19

2.MD.A Measure and estimate lengths in standard units.

2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Essential Skills and Concepts:

- ☐ Compare the lengths two objects
- ☐ Describe the difference in length
- ☐ Explain how you know that one object is ______ units longer than another

Question Stems and Prompts:

- ✓ Which object is longer?
- ✓ How much longer is this object than the other object?
- ✓ How many inches longer is the ____ than the ___?
- ✓ How many feet shorter is the ___ from the ___?

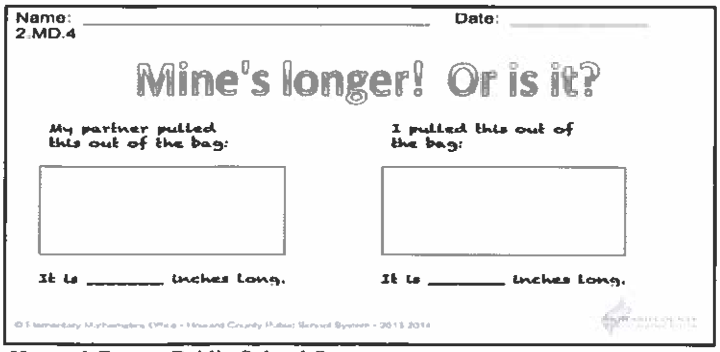
Vocabulary	**Spanish Cognates**
Tier 3	
• measure	
• standard units	

Standards Connections

2.MD.4 → 2.MD.5

2.MD.4 Examples:

Teacher: Choose two pieces of string to measure. How many inches do you think each string is?
Student: I think String A is about 8 inches long. I think string B is only about 4 inches long. It's really short.
Teacher: Measure to see how long each string is. *Student measures.* What did you notice?
Student: String A is definitely the longest one. It is 10 inches long. String B was only 5 inches long. I was close!
Teacher: How many more inches does your short string need to be so that it is the same length as your long string?
Student: Hmmm. String B is 5 inches. It would need 5 more inches to be 10 inches. 5 and 5 is 10.
(North Carolina Department of Public Instruction, Unpacked Content, updated July 2013)



Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.4

2nd Grade – CCSS for Mathematics

2.MD.A Measure and estimate lengths in standard units

2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Essential Skills and Concepts:

- ☐ Compare the lengths two objects
- ☐ Describe the difference in length
- ☐ Explain how you know that one object is ______ units longer than another

Question Stems and Prompts:

- ✓ Which object is longer?
- ✓ How much longer is this object than the other object?
- ✓ How many inches longer is the ____ than the ___?
- ✓ How many feet shorter is the ___ from the ___?

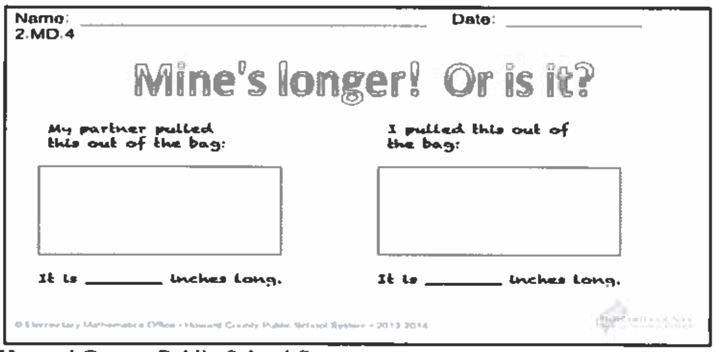
Vocabulary **Spanish Cognates**
Tier 3
• measure
• standard units

Standards Connections

2.MD.4 → 2.MD.5

2.MD.4 Examples:

Teacher: Choose two pieces of string to measure. How many inches do you think each string is?
Student: I think String A is about 8 inches long. I think string B is only about 4 inches long. It's really short.
Teacher: Measure to see how long each string is. *Student measures.* What did you notice?
Student: String A is definitely the longest one. It is 10 inches long. String B was only 5 inches long. I was close!
Teacher: How many more inches does your short string need to be so that it is the same length as your long string?
Student: Hmmm. String B is 5 inches. It would need 5 more inches to be 10 inches. 5 and 5 is 10.
(North Carolina Department of Public Instruction, Unpacked Content, updated July 2013)



Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.4

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.A Measure and estimate lengths in standard units.

2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Standard Explanation

Students measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. (2.MD.A.4▲). Second graders use inches, feet, yards, centimeters, and meters to compare the lengths of two objects. Students use comparative phrases such as, "It is 2 inches longer," or, "It is shorter by 5 centimeters," to describe the difference in length between the two objects. Students use both the quantity and the unit name to precisely compare length. (Adapted from Arizona 2012 and N. Carolina 2013)

Second Grade students determine the difference in length between two objects by using the same tool and unit to measure both objects. Students choose two objects to measure, identify an appropriate tool and unit, measure both objects, and then determine the differences in lengths. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Geometric Measurement Progression Information:

Second graders also learn to combine and compare lengths using arithmetic operations. That is, they can add two lengths to obtain the length of the whole and subtract one length from another to find out the difference in lengths. For example, they can use a simple unit ruler or put a length of connecting cubes together to measure first one modeling clay "snake," then another, to find the total of their lengths. The snakes can be laid along a line, allowing students to compare the measurement of that length with the sum of the two measurements.

2nd Grade – CCSS for Mathematics

2.MD.A Measure and estimate lengths in standard units.

2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Standard Explanation

Students measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. (2.MD.A.4▲). Second graders use inches, feet, yards, centimeters, and meters to compare the lengths of two objects. Students use comparative phrases such as, "It is 2 inches longer," or, "It is shorter by 5 centimeters," to describe the difference in length between the two objects. Students use both the quantity and the unit name to precisely compare length. (Adapted from Arizona 2012 and N. Carolina 2013)

Second Grade students determine the difference in length between two objects by using the same tool and unit to measure both objects. Students choose two objects to measure, identify an appropriate tool and unit, measure both objects, and then determine the differences in lengths. (CA *Mathematics Framework*, adopted Nov. 6, 2013)

Geometric Measurement Progression Information:

Second graders also learn to combine and compare lengths using arithmetic operations. That is, they can add two lengths to obtain the length of the whole and subtract one length from another to find out the difference in lengths. For example, they can use a simple unit ruler or put a length of connecting cubes together to measure first one modeling clay "snake," then another, to find the total of their lengths. The snakes can be laid along a line, allowing students to compare the measurement of that length with the sum of the two measurements.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Essential Skills and Concepts:
- ☐ Solve length word problems using addition and subtraction within 100
- ☐ Represent word problems using drawings or equations
- ☐ Write an equation to match the word problem using a symbol for the unknown

Question Stems and Prompts:
- ✓ If a puppy was 12 inches long and now it is 22 inches long how many inches long did it grow?
- ✓ A string was 25cm long. I cut off 12cm. How long is the string now?
- ✓ Write an equation for the word problem. What do the parts of your equation represent?
- ✓ Describe how your drawing represents the problem.

Vocabulary	**Spanish Cognates**
Tier 2	
• represent	representar
• symbol	símbolo
Tier 3	
• length	
• addition	adición
• subtraction	sustracción
• units	unidades
• equation	ecuación
• number line	línea de números
• open number line	
• tape diagram	

Standards Connections
2.MD.5 – 2.MD.6, 2.OA.1

2.MD.5 Example:

Example: In gym class Kate jumped 14 inches. Lilly jumped 23 inches. How much farther did Lilly jump than Kate? Solve the problem and then write an equation.

Student A: My equation is 14 + __ = 23 since I thought, "14 and what makes 23?" I used cubes. I made a train of 14. Then I made a train of 23. When I put them side by side, I saw that Kate would need 9 more cubes to be the same as Lilly. So, Lilly jumped 9 more inches than Kate. 14 + 9 = 23. **(MP.1, MP.2 and MP.4)**

Student B: My equation is 23 – 14 = __ since I thought about what the difference was between Kate and Lilly. I broke up 14 into 10 and 4. I know that 23 minus 10 is 13. Then, I broke up the 4 into 3 and 1. 13 minus 3 is 10. Then, I took one more away. That left me with 9. So, Lilly jumped 9 inches more than Kate. That seems to make sense since 23 is almost 10 more than 14. 23 – 14 = 9. **(MP.2, MP.7 and MP.8)**

(California *Mathematics Framework*, November 6, 2013)

2nd Grade – CCSS for Mathematics

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Essential Skills and Concepts:
☐ Solve length word problems using addition and subtraction within 100
☐ Represent word problems using drawings or equations
☐ Write an equation to match the word problem using a symbol for the unknown

Question Stems and Prompts:
✓ If a puppy was 12 inches long and now it is 22 inches long how many inches long did it grow?
✓ A string was 25cm long. I cut off 12cm. How long is the string now?
✓ Write an equation for the word problem. What do the parts of your equation represent?
✓ Describe how your drawing represents the problem.

Vocabulary / Spanish Cognates
Tier 2
• represent — representar
• symbol — símbolo
Tier 3
• length
• addition — adición
• subtraction — sustracción
• units — unidades
• equation — ecuación
• number line — línea de números
• open number line
• tape diagram

Standards Connections
2.MD.5 – 2.MD.6, 2.OA.1

2.MD.5 Example:

Example: In gym class Kate jumped 14 inches. Lilly jumped 23 inches. How much farther did Lilly jump than Kate? Solve the problem and then write an equation.

Student A: My equation is 14 + __ = 23 since I thought, "14 and what makes 23?" I used cubes. I made a train of 14. Then I made a train of 23. When I put them side by side, I saw that Kate would need 9 more cubes to be the same as Lilly. So, Lilly jumped 9 more inches than Kate. 14 + 9 = 23. (MP.1, MP.2 and MP.4)

Student B: My equation is 23 – 14 = __ since I thought about what the difference was between Kate and Lilly. I broke up 14 into 10 and 4. I know that 23 minus 10 is 13. Then, I broke up the 4 into 3 and 1. 13 minus 3 is 10. Then, I took one more away. That left me with 9. So, Lilly jumped 9 inches more than Kate. That seems to make sense since 23 is almost 10 more than 14. 23 – 14 = 9. (MP.2, MP.7 and MP.8)

(California Mathematics Framework, November 6, 2013)

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Standard Explanation

Students apply the concept of length to solve addition and subtraction problems. Word problems should refer to the same unit of measure (California *Mathematics Framework*, November 6, 2013).

Equations may vary depending on students' interpretation of the task (North Carolina Unpacking Document, July 2013).

2nd Grade – CCSS for Mathematics

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Standard Explanation

Students apply the concept of length to solve addition and subtraction problems. Word problems should refer to the same unit of measure (California *Mathematics Framework*, November 6, 2013).

Equations may vary depending on students' interpretation of the task (North Carolina Unpacking Document, July 2013).

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Essential Skills and Concepts:
- ☐ Create equally spaced points on a number line for whole numbers
- ☐ Use a number line to add and subtract to solve length problems
- ☐ Represent answers to addition and subtraction questions on the number line

Question Stems and Prompts:
- ✓ How can you represent this addition/subtraction problem using a number line?
- ✓ Using a number line, explain your answer to the problem.

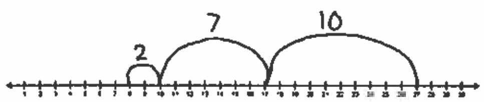
Vocabulary	**Spanish Cognates**
Tier 2	
• equal	igual
• diagram	diagrama
• difference	diferencia
Tier 3	
• sums	sumas
• addition	adición
• subtraction	sustracción
• number line	línea de números
• open number line	
• tape diagram	

Standards Connections
2.MD.6 – 2.MD.9, 2.MD.6 → 3.NF.2

2.MD.6 Examples:

Example: There were 27 students on the bus. 19 got off the bus. How many students are on the bus?

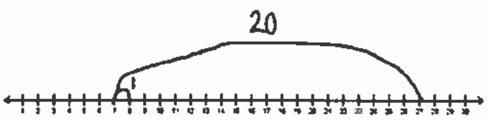
Student A: I used a number line. I started at 27. I broke up 19 into 10 and 9. That way, I could take a jump of 10. I landed on 17. Then I broke the 9 up into 7 and 2. I took a jump of 7. That got me to 10. Then I took a jump of 2. That's 8. So, there are 8 students now on the bus.



27 − 19 = 8

Student B: I used a number line. I saw that 19 is really close to 20. Since 20 is a lot easier to work with, I took a jump of 20. But, that was one too many. So, I took a jump of 1 to make up for the extra. I landed on 8. So, there are 8 students on the bus.

27 - 20 = 7
7 + 1 = 8



(North Carolina Unpacking Document, July 2013)

2nd Grade – CCSS for Mathematics

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Essential Skills and Concepts:
- ☐ Create equally spaced points on a number line for whole numbers
- ☐ Use a number line to add and subtract to solve length problems
- ☐ Represent answers to addition and subtraction questions on the number line

Question Stems and Prompts:
- ✓ How can you represent this addition/subtraction problem using a number line?
- ✓ Using a number line, explain your answer to the problem.

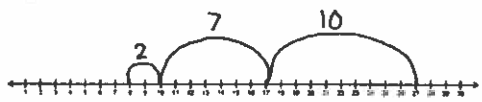
Vocabulary / Spanish Cognates
Tier 2
• equal — igual
• diagram — diagrama
• difference — diferencia
Tier 3
• sums — sumas
• addition — adición
• subtraction — sustracción
• number line — línea de números
• open number line
• tape diagram

Standards Connections
2.MD.6 – 2.MD.9, 2.MD.6 → 3.NF.2

2.MD.6 Examples:

Example: There were 27 students on the bus. 19 got off the bus. How many students are on the bus?

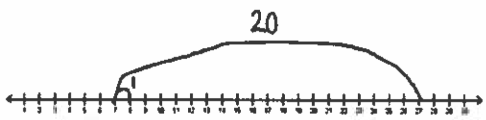
Student A: I used a number line. I started at 27. I broke up 19 into 10 and 9. That way, I could take a jump of 10. I landed on 17. Then I broke the 9 up into 7 and 2. I took a jump of 7. That got me to 10. Then I took a jump of 2. That's 8. So, there are 8 students now on the bus.



27 − 19 = 8

Student B: I used a number line. I saw that 19 is really close to 20. Since 20 is a lot easier to work with, I took a jump of 20. But, that was one too many. So, I took a jump of 1 to make up for the extra. I landed on 8. So, there are 8 students on the bus.

27 - 20 = 7
7 + 1 = 8



(North Carolina Unpacking Document, July 2013)

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Standard Explanation

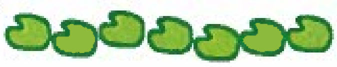
Students represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2...and represent whole-number sums and differences within 100 on a number line diagram (California *Mathematics Framework*, November 6, 2013).

They build upon their experiences with open number lines to create number lines with evenly spaced points. They recognize the similarities between a number line and a ruler (North Carolina Unpacking Document, July 2013).

2.MD.6 Illustrative Task:

- Frog and Toad on the Number Line, https://www.illustrativemathematics.org/illustrations/1081

One day, Frog and Toad were sitting together on a lily pad. Some lily pads were in a line across the pond.



In the morning, Frog hopped three lily pads away. In the afternoon, he hopped two more away. In the evening, he hopped another two more.

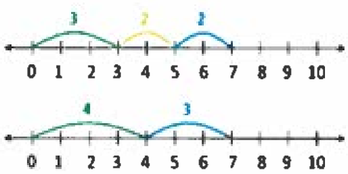
Toad hopped four lily pads away in the morning. He rested in the afternoon and continued three further in the evening. Frog said,

Toad, we ended up at the same place!

Show each of their journeys on a number line, starting at 0. Use different colors for the morning, afternoon, and evening hops. Write a number sentence that reflects that they ended up at the same place.

Solution: Sample solution

Frog's journey is shown on the top number line and Toad's journey is shown on the bottom number line:



The number sentence

$$3+2+2=4+3$$

shows that Frog and Toad ended up at the same place.

2nd Grade – CCSS for Mathematics

2.MD.B Relate addition and subtraction to length.

2.MD.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.

Standard Explanation

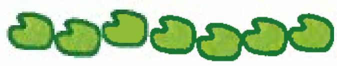
Students represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2...and represent whole-number sums and differences within 100 on a number line diagram (California Mathematics Framework, November 6, 2013).

They build upon their experiences with open number lines to create number lines with evenly spaced points. They recognize the similarities between a number line and a ruler (North Carolina Unpacking Document, July 2013).

2.MD.6 Illustrative Task:

- Frog and Toad on the Number Line, https://www.illustrativemathematics.org/illustrations/1081

One day, Frog and Toad were sitting together on a lily pad. Some lily pads were in a line acro the pond.



In the morning, Frog hopped three lily pads away. In the afternoon, he hopped two more awa In the evening, he hopped another two more.

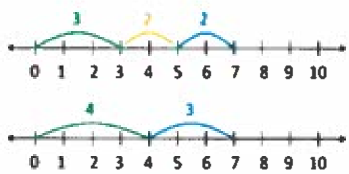
Toad hopped four lily pads away in the morning. He rested in the afternoon and continued th further in the evening. Frog said,

Toad, we ended up at the same place!

Show each of their journeys on a number line, starting at 0. Use different colors for the momi afternoon, and evening hops. Write a number sentence that reflects that they ended up at th same place.

Solution: Sample solution

Frog's journey is shown on the top number line and Toad's journey is shown on the bottom number line:



The number sentence

3+2+2=4+3

shows that Frog and Toad ended up at the same place.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.C Work with time and money.

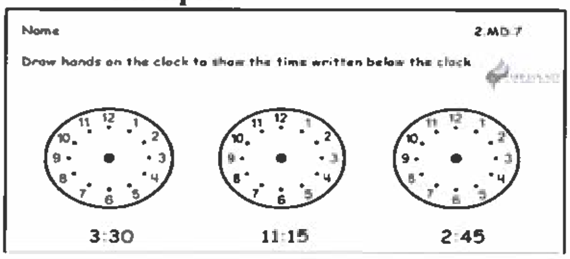
2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). CA**

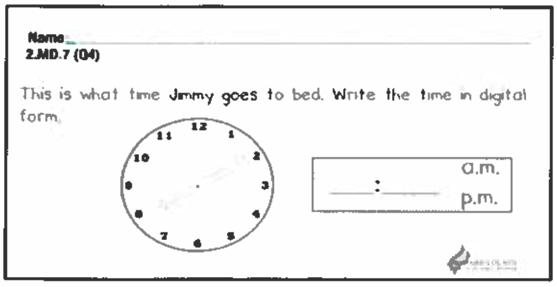
Essential Skills and Concepts:
- ☐ Tell time to the nearest five minutes from analog and digital clocks
- ☐ Use a.m. and p.m., giving examples of each
- ☐ Write time to the nearest five minutes from analog and digital clocks
- ☐ Understand and know relationships of time

Question Stems and Prompts:
- ✓ What time is it? Is it am or pm? How do you know?
- ✓ Write the time on this clock?
- ✓ How many hours in a day? Days in a week?
- ✓ How many minutes in an hour? Two hours?
- ✓ Show the time on the digital clock on an analog clock by drawing the hands in the correct places.

Vocabulary	**Spanish Cognates**
Tier 2	
• analog	análogo
• digital	digital
Tier 3	
• a.m.	
• p.m.	
• hour	hora
• minute	minuto

2.MD.7 Examples:





Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.7

2nd Grade – CCSS for Mathematics

2.MD.C Work with time and money.

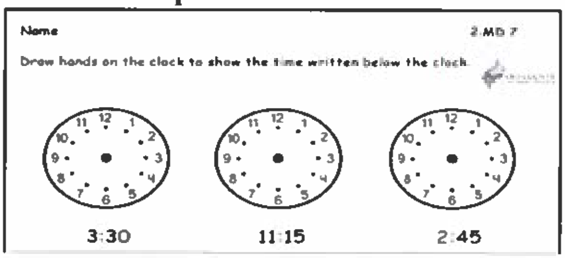
2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). CA**

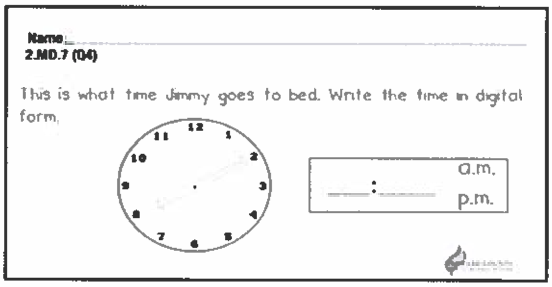
Essential Skills and Concepts:
- ☐ Tell time to the nearest five minutes from analog and digital clocks
- ☐ Use a.m. and p.m., giving examples of each
- ☐ Write time to the nearest five minutes from analog and digital clocks
- ☐ Understand and know relationships of time

Question Stems and Prompts:
- ✓ What time is it? Is it am or pm? How do you know?
- ✓ Write the time on this clock?
- ✓ How many hours in a day? Days in a week?
- ✓ How many minutes in an hour? Two hours?
- ✓ Show the time on the digital clock on an analog clock by drawing the hands in the correct places.

Vocabulary	**Spanish Cognates**
Tier 2	
• analog	análogo
• digital	digital
Tier 3	
• a.m.	
• p.m.	
• hour	hora
• minute	minuto

2.MD.7 Examples:





Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.7

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2[nd] Grade – CCSS for Mathematics

2.MD.C Work with time and money.

2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). CA**

Standard Explanation

In first grade, students learned to tell time to the nearest hour and half-hour. In second grade students tell time to the nearest five minutes (2.MD.7▲). Students can make connections between skip counting by 5s (2.NBT.2▲) and 5-minute intervals on the clock. Students work with both digital and analog clocks. They recognize time in both formats and communicate their understanding of time using both numbers and language.

Second grade students understand that there are two cycles of twelve hours in a day—a.m. and p.m. A daily journal can help students make real-world connections and understand the difference between these two cycles (California *Mathematics Framework*, November 6, 2013).

Focus, Coherence, and Rigor:
Students understanding and use of skip counting by 5s and 10s (2.NBT.2▲) can also support telling and writing time to the nearest five minutes (2.MD. ▲7). Students notice the pattern of numbers and apply this understanding to time (MP.7)

2.MD.7 Illustrative Task:

- Ordering Time, https://www.illustrativemathematics.org/illustrations/1069

MATERIALS

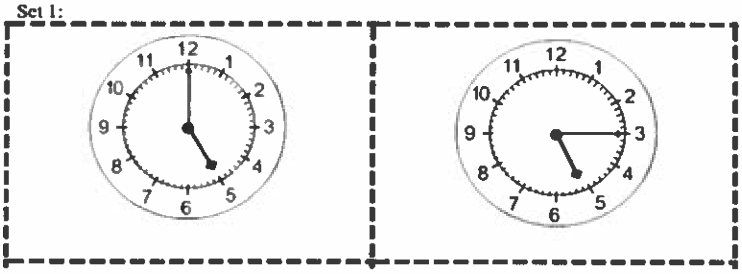
- Sets of 3-6 "analog clock cards," enough for each student
- Sets of 3-6 "digital clock cards," enough for each student
- Paper and pencil

ACTIONS

Students will work individually or in pairs so they can compare their orderings. Students should start with the analog clocks. They arrange they clocks in order of increasing time and then the can write the times in increasing order on their paper. Once they have arranged the first set, they can move onto the set of digital times. The teacher should be walking around at this time checking student progress.

If students finish early, they can get another set of cards. The card sets attached to this task get increasingly difficult, so students who find the first sets easy will be challenged by other sets.

Set 1:



2.MD.C Work with time and money.

2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). CA**

Standard Explanation

In first grade, students learned to tell time to the nearest hour and half-hour. In second grade students tell time to the nearest five minutes (2.MD.7▲). Students can make connections between skip counting by 5s (2.NBT.2▲) and 5-minute intervals on the clock. Students work with both digital and analog clocks. They recognize time in both formats and communicate their understanding of time using both numbers and language.

Second grade students understand that there are two cycles of twelve hours in a day—a.m. and p.m. A daily journal can help students make real-world connections and understand the difference between these two cycles (California *Mathematics Framework*, November 6, 2013).

Focus, Coherence, and Rigor:
Students understanding and use of skip counting by 5s and 10s (2.NBT.2▲) can also support telling and writing time to the nearest five minutes (2.MD. ▲7). Students notice the pattern of numbers and apply this understanding to time (MP.7)

2.MD.7 Illustrative Task:

- Ordering Time, https://www.illustrativemathematics.org/illustrations/1069

MATERIALS

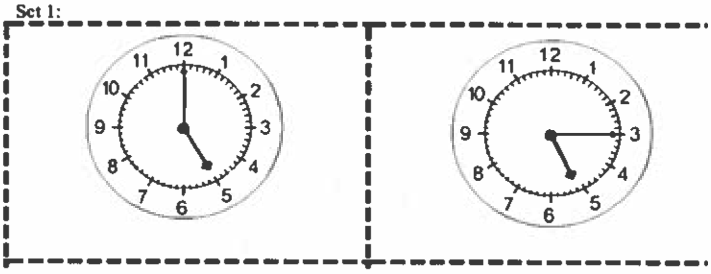
- Sets of 3-6 "analog clock cards," enough for each student
- Sets of 3-6 "digital clock cards," enough for each student
- Paper and pencil

ACTIONS

Students will work individually or in pairs so they can compare their orderings. Students shou start with the analog clocks. They arrange they clocks in order of increasing time and then th can write the times in increasing order on their paper. Once they have arranged the first set, they can move onto the set of digital times. The teacher should be walking around at this tin checking student progress.

If students finish early, they can get another set of cards. The card sets attached to this task increasingly difficult, so students who find the first sets easy will be challenged by other sets.

Set 1:



Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2[nd] edition 6/19

2.MD.C Work with time and money

2.MD.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?*

Essential Skills and Concepts:
- ☐ Identify and name coins and bills, including their values
- ☐ Solve word problems about money
- ☐ Use the symbols \$ and ¢ correctly
- ☐ Count money and represent values in different ways

Question Stems and Prompts:
- ✓ If you had __quaters and __ nickels how many cents would you have?
- ✓ If you had __ quarters, __dimes, and ___pennies. How much money would you have?

Vocabulary	**Spanish Cognates**
Tier 2	
• money	
• value	valor
Tier 3	
• dollar	dólar
• quarter	
• dime	
• nickel	
• penny	
• cent	centavo

Standards Connections
2.MD.8 – 2.OA.1

2.MD.8 Examples:

Example: How many different ways can you make 37¢ using pennies, nickels, dimes, and quarters?
Example: How many different ways can you make 12 dollars using \$1, \$5, and \$10 bills?

(Adapted from Arizona 2012 and N. Carolina 2013)

2.MD.8 Illustrative Task:
- Alexander, Who Used to be Rich Last Sunday
  https://www.illustrativemathematics.org/illustrations/1314

- *Alexander, Who Used to be Rich Last Sunday* by Judith Viorst

- Plastic coins
- Labels for items Alexander spent his money on (attached)
- Paper coins (attached)
- Scissors, glue, and construction paper

2nd Grade – CCSS for Mathematics

2.MD.C Work with time and money

2.MD.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?*

Essential Skills and Concepts:
- ☐ Identify and name coins and bills, including their values
- ☐ Solve word problems about money
- ☐ Use the symbols \$ and ¢ correctly
- ☐ Count money and represent values in different ways

Question Stems and Prompts:
- ✓ If you had __quaters and __ nickels how many cents would you have?
- ✓ If you had __ quarters, __dimes, and ___pennies. How much money would you have?

Vocabulary / **Spanish Cognates**
Tier 2
• money
• value — valor
Tier 3
• dollar — dólar
• quarter
• dime
• nickel
• penny
• cent — centavo

Standards Connections
2.MD.8 – 2.OA.1

2.MD.8 Examples:

Example: How many different ways can you make 37¢ using pennies, nickels, dimes, and quarters?
Example: How many different ways can you make 12 dollars using \$1, \$5, and \$10 bills?

(Adapted from Arizona 2012 and N. Carolina 2013)

2.MD.8 Illustrative Task:
- Alexander, Who Used to be Rich Last Sunday
  https://www.illustrativemathematics.org/illustrations/1314

- *Alexander, Who Used to be Rich Last Sunday* by Judith Viorst

- Plastic coins
- Labels for items Alexander spent his money on (attached)
- Paper coins (attached)
- Scissors, glue, and construction paper

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.C.8

Standard Explanation

Students solve word problems involving dollars or cents (2.MD.8). Students identify, count, recognize, and use coins and bills in and out of context. They should have opportunities to make equivalent amounts using both coins and bills. "Dollar bills" should include denominations up to one hundred ($1, $5, $10, $20, $100). Note that students in second grade do not express money amounts using decimal points.

Just as students learn that a number (38) can be represented different ways (3 tens and 8 ones; 2 tens and 18 ones) and still remain the same amount (38), students can apply this understanding to money. For example, 25 cents could be represented as a quarter, two dimes and a nickel, or 25 pennies, all of which have the same value. Building the concept of equivalent worth takes time and students will need numerous opportunities to create and count different sets of coins and to recognize the "purchase power" of coins (a nickel can buy the same things as 5 pennies).

As teachers provide students with opportunities to explore coin values (25 cents), actual coins (2 dimes, 1 nickel), and drawings of circles that have values indicated, students gradually learn to mentally give each coin in a set a value, place a random set of coins in order, use mental math, add on to find differences, and skip count to determine the total amount (California *Mathematics Framework,* November 6, 2013).

2.MD.8 Illustrative Tasks:

- Jamir's Penny Jar, https://www.illustrativemathematics.org/illustrations/1071

Jamir has collected some pennies in a jar. Recently, he added coins other than pennies to his jar. Jamir reached his hand into the jar and pulled out this combination:

a. Jamir wants to count the total value of these coins. What coin do you suggest he start with? Why would Jamir want to start counting with this coin?

b. What is the total value of these coins? Write a number sentence that represents the total value of the coins.

c. Jamir reached into the jar again and was surprised to pull out a different combination of coins with the same total value as before. Draw a collection of coins that Jamir could have pulled from the jar. Write a number sentence that represents the total value of the coins.

- Visiting the Arcade, https://www.illustrativemathematics.org/illustrations/1296

Amy went to the arcade. At the arcade, people can buy tokens to use for the games.

a. Amy paid $5 to get some tokens. Show two different ways she could have paid using some bills and some coins.

b. Amy finished playing games. She has 4 tokens left over. Can she use these at the grocery store to buy some food? Why or why not?

c. The arcade trades tokens for 15 cents. How much money could Amy trade for her 4 tokens? Can she use these at the grocery store to buy some food? Why or why not?

2nd Grade – CCSS for Mathematics

2.MD.C.8

Standard Explanation

Students solve word problems involving dollars or cents (2.MD.8). Students identify, count, recognize, and use coins and bills in and out of context. They should have opportunities to make equivalent amounts using both coins and bills. "Dollar bills" should include denominations up to one hundred ($1, $5, $10, $20, $100). Note that students in second grade do not express money amounts using decimal points.

Just as students learn that a number (38) can be represented different ways (3 tens and 8 ones; 2 tens and 18 ones) and still remain the same amount (38), students can apply this understanding to money. For example, 25 cents could be represented as a quarter, two dimes and a nickel, or 25 pennies, all of which have the same value. Building the concept of equivalent worth takes time and students will need numerous opportunities to create and count different sets of coins and to recognize the "purchase power" of coins (a nickel can buy the same things as 5 pennies).

As teachers provide students with opportunities to explore coin values (25 cents), actual coins (2 dimes, 1 nickel), and drawings of circles that have values indicated, students gradually learn to mentally give each coin in a set a value, place a random set of coins in order, use mental math, add on to find differences, and skip count to determine the total amount (California Mathematics Framework, November 6, 2013).

2.MD.8 Illustrative Tasks:

- Jamir's Penny Jar, https://www.illustrativemathematics.org/illustrations/1071

Jamir has collected some pennies in a jar. Recently, he added coins other than pennies to his jar. Jamir reached his hand into the jar and pulled out this combination:

a. Jamir wants to count the total value of these coins. What coin do you suggest he start with? Why would Jamir want to start counting with this coin?

b. What is the total value of these coins? Write a number sentence that represents the total value of the coins.

c. Jamir reached into the jar again and was surprised to pull out a different combination of coins with the same total value as before. Draw a collection of coins that Jamir could have pulled from the jar. Write a number sentence that represents the total value of the coins.

- Visiting the Arcade, https://www.illustrativemathematics.org/illustrations/1296

Amy went to the arcade. At the arcade, people can buy tokens to use for the games.

a. Amy paid $5 to get some tokens. Show two different ways she could have paid using some bills and some coins.

b. Amy finished playing games. She has 4 tokens left over. Can she use these at the grocery store to buy some food? Why or why not?

c. The arcade trades tokens for 15 cents. How much money could Amy trade for her 4 tokens? Can she use these at the grocery store to buy some food? Why or why not?

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.D Represent and interpret data.

2.MD.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.

Essential Skills and Concepts:

- ☐ Generate data by measuring lengths of objects
- ☐ Create a line plot
- ☐ Represent data on a line plot

Question Stems and Prompts:

- ✓ Measure the items in your pencil box. Create a line plot to illustrate your data.
- ✓ Measure these 5 different books. Draw the data points on this line plot.
- ✓ How many objects have the same measurement?
- ✓ How many objects measure 2inches?

Vocabulary	**Spanish Cognates**
Tier 2	
• generate	generar
• object	objeto
• scale	escala
• horizontal	horizontal
Tier 3	
• line plot	
• data	datos
• unit	unidad
• measure	

Standards Connections

2.MD.9 – 2.MD.6

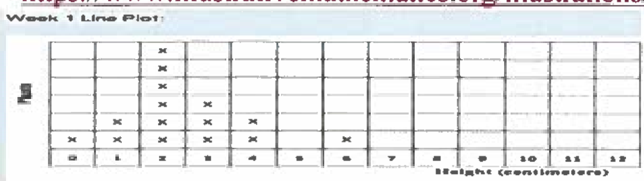
2.MD.9 Illustrative Tasks:

- The Longest Walk, https://www.illustrativemathematics.org/illustrations/486

a. Pick two points on the outside borders of the United States map (excluding Hawaii and Alaska) so that the line between them stays within the borders. Draw the line. How far apart are the points? Measure the length of the line to find out. Do this 10 times and make a line-plot of your data.

b. Starting anywhere on the map of the United States and drawing in a straight line until hitting a border, what is the longest line you can draw? It might help to ask your classmates what lengths they found as well.

- Growing Bean Plants, https://www.illustrativemathematics.org/illustrations/493



2nd Grade – CCSS for Mathematics

2.MD.D Represent and interpret data.

2.MD.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.

Essential Skills and Concepts:
☐ Generate data by measuring lengths of objects
☐ Create a line plot
☐ Represent data on a line plot

Question Stems and Prompts:
✓ Measure the items in your pencil box. Create a line plot to illustrate your data.
✓ Measure these 5 different books. Draw the data points on this line plot.
✓ How many objects have the same measurement?
✓ How many objects measure 2inches?

Vocabulary / Spanish Cognates
Tier 2
• generate generar
• object objeto
• scale escala
• horizontal horizontal
Tier 3
• line plot
• data datos
• unit unidad
• measure

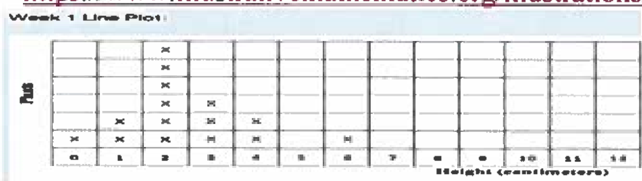
Standards Connections
2.MD.9 – 2.MD.6

2.MD.9 Illustrative Tasks:
• The Longest Walk, https://www.illustrativemathematics.org/illustrations/486

a. Pick two points on the outside borders of the United States map (excluding Hawaii and Alaska) so that the line between them stays within the borders. Draw the line. How far apart are the points? Measure the length of the line to find out. Do this 10 times and make a line-plot of your data.

b. Starting anywhere on the map of the United States and drawing in a straight line until hitting a border, what is the longest line you can draw? It might help to ask your classmates what lengths they found as well.

• Growing Bean Plants, https://www.illustrativemathematics.org/illustrations/493

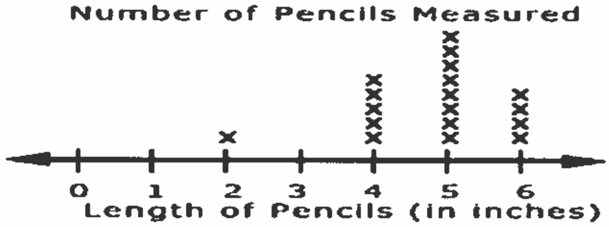


Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.D.9

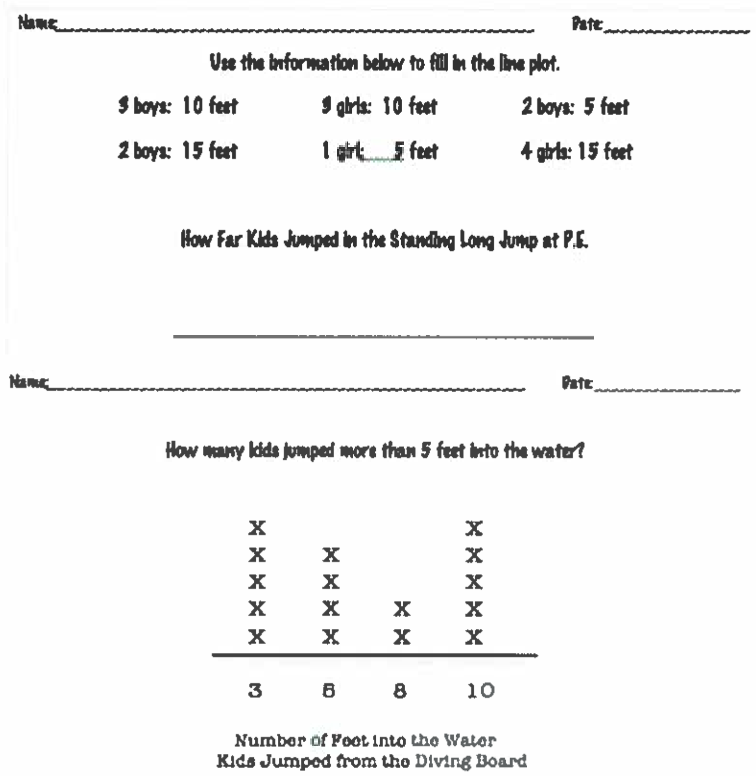
Standard Explanation

Students use the measurement skills learned in earlier standards to measure objects and create measurement data (2.MD.9). For example they measure objects in their desk to the nearest inch, display the data collected on a line plot, and answer related questions. Line plots are first introduced in this grade level. A line plot can be thought of as plotting data on a number line. For example:



Representing and interpreting data to solve problems also develops mathematical practices such making sense of problems (MP.1), reasoning quantitatively (MP.2), justifying conclusions (MP.3), appropriate use of tools (MP.5), attention to precision (MP.6), and evaluating the reasonableness of results (MP. 8) (California *Mathematics Framework*, November 6, 2013).

2.MD.9 Examples:


Name____________________ Date__________

Use the information below to fill in the line plot.

3 boys: 10 feet   3 girls: 10 feet   2 boys: 5 feet

2 boys: 15 feet   1 girl: 5 feet   4 girls: 15 feet

How Far Kids Jumped in the Standing Long Jump at P.E.

Name____________________ Date__________

How many kids jumped more than 5 feet into the water?

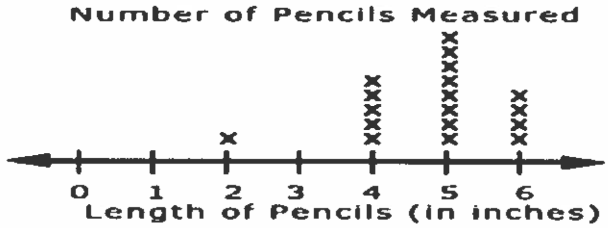
Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.9

2nd Grade – CCSS for Mathematics

2.MD.D.9

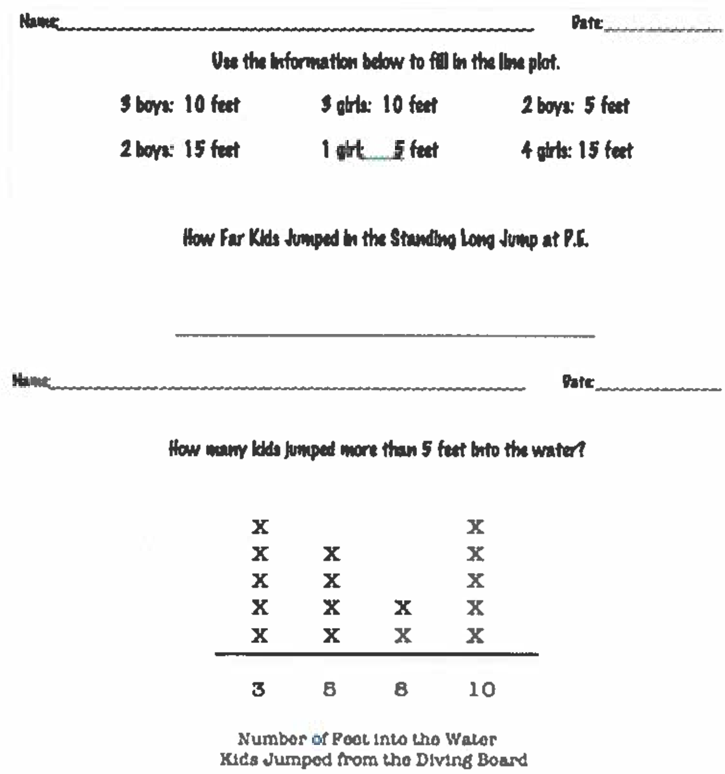
Standard Explanation

Students use the measurement skills learned in earlier standards to measure objects and create measurement data (2.MD.9). For example they measure objects in their desk to the nearest inch, display the data collected on a line plot, and answer related questions. Line plots are first introduced in this grade level. A line plot can be thought of as plotting data on a number line. For example:



Representing and interpreting data to solve problems also develops mathematical practices such making sense of problems (MP.1), reasoning quantitatively (MP.2), justifying conclusions (MP.3), appropriate use of tools (MP.5), attention to precision (MP.6), and evaluating the reasonableness of results (MP. 8) (California Mathematics Framework, November 6, 2013).

2.MD.9 Examples:



Howard County Public School System,
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.9

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.D Represent and interpret data

2.MD.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[4] using information presented in a bar graph.

Essential Skills and Concepts:

- ☐ Draw and label a bar graph
- ☐ Draw and label a picture graph
- ☐ Solve problems using the data on the graphs

Question Stems and Prompts:

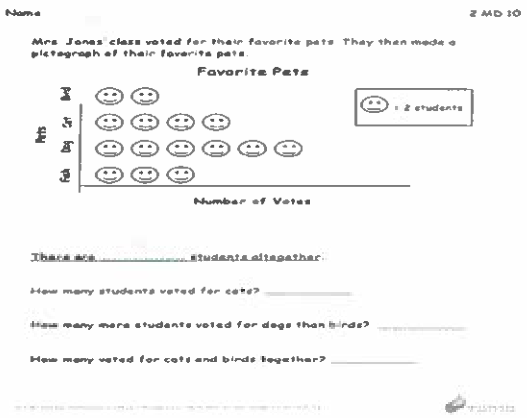
- ✓ How many more __ is there then ___?
- ✓ How many __ and __ are there together?
- ✓ Which category received the least amount of votes?
- ✓ Which category received the greatest amount of votes?

Vocabulary	**Spanish Cognates**
Tier 2	
• category	categoría
• compare	comprarar
• information	información
• key	
Tier 3	
• bar graph	
• picture graph	
• data	datos
• unit	unidad

Standards Connections

2.MD.10 – 2.OA.1

2.MD.10 Examples:



Use the following data to make a picture graph.

Favorite Fruit	
Grapes	5
Plums	9
Peaches	3

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.10

[4] See Glossary, Table 1.

2nd Grade – CCSS for Mathematics

2.MD.D Represent and interpret data

2.MD.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[4] using information presented in a bar graph.

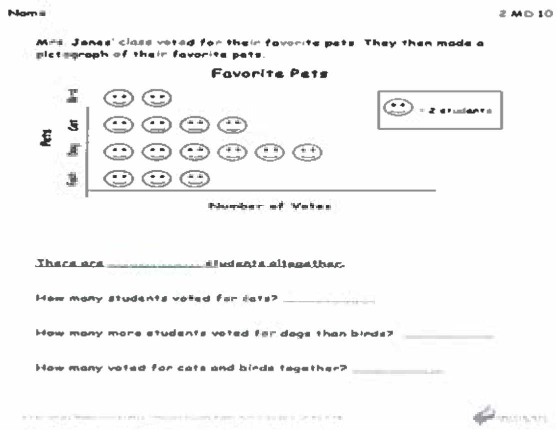
Essential Skills and Concepts:
☐ Draw and label a bar graph
☐ Draw and label a picture graph
☐ Solve problems using the data on the graphs

Question Stems and Prompts:
✓ How many more __ is there then ___?
✓ How many __ and __ are there together?
✓ Which category received the least amount of votes?
✓ Which category received the greatest amount of votes?

Vocabulary / Spanish Cognates
Tier 2
• category — categoría
• compare — comprarar
• information — información
• key
Tier 3
• bar graph
• picture graph
• data — datos
• unit — unidad

Standards Connections
2.MD.10 – 2.OA.1

2.MD.10 Examples:



Use the following data to make a picture graph.

Favorite Fruit: Grapes 5; Plums 9; Peaches 3

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.10

[4] See Glossary, Table 1.

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.MD.D.10

Standard Explanation

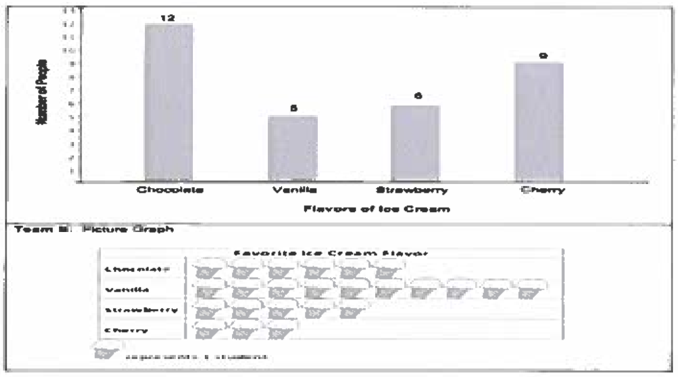
Students draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. They solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

In first grade, students worked with three categories of data. In second grade, students represent data on a picture graph or bar graph (with single-unit scale) and interpret the results. Students organize, represent, and interpret data with up to four categories. In second grade, picture graphs (pictographs) use symbols that represent single units. Pictographs should include a title, categories, category label, key, and data.

Students use data to pose and solve simple one-step addition and subtraction problems. The use of picture graphs and bar graphs to represent a data set (2.MD.D.10) reinforces major work at the grade in the cluster "Represent and solve problems involving addition and subtraction" and provides a context for students to solve related addition and subtraction problems (2.OA.A.1▲).

Representing and interpreting data to solve problems also develops mathematical practices such making sense of problems (MP.1), reasoning quantitatively (MP.2), justifying conclusions (MP.3), appropriate use of tools (MP.5), attention to precision (MP.6), and evaluating the reasonableness of results (MP. 8) (California *Mathematics Framework,* November 6, 2013).

2.MD.10 Example: Students are responsible for purchasing ice cream for an event at school. They decide to collect data to determine which flavors to buy for the event. Students decide on the question, "What is your favorite flavor of ice cream?" and four likely responses, chocolate, vanilla, strawberry, and cherry. Students form two teams and collect information from different classes in their school. Each team decides how to keep track of the data (e.g., tally marks, in a table, check marks). Each team selects either a picture graph or a bar graph to display their data. They create the graph using paper or a computer. Examples of graphs are provided below.



2nd Grade – CCSS for Mathematics

2.MD.D.10

Standard Explanation

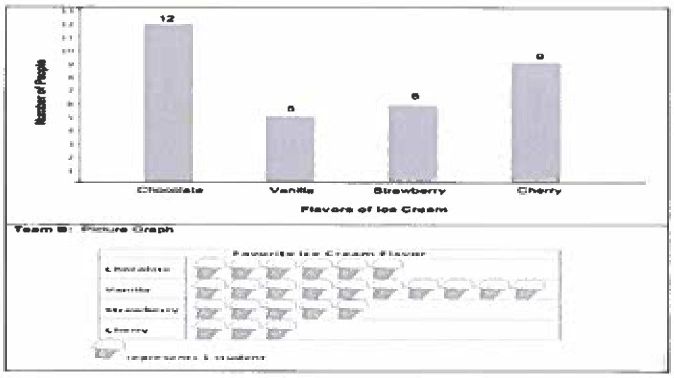
Students draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. They solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

In first grade, students worked with three categories of data. In second grade, students represent data on a picture graph or bar graph (with single-unit scale) and interpret the results. Students organize, represent, and interpret data with up to four categories. In second grade, picture graphs (pictographs) use symbols that represent single units. Pictographs should include a title, categories, category label, key, and data.

Students use data to pose and solve simple one-step addition and subtraction problems. The use of picture graphs and bar graphs to represent a data set (2.MD.D.10) reinforces major work at the grade in the cluster "Represent and solve problems involving addition and subtraction" and provides a context for students to solve related addition and subtraction problems (2.OA.A.1▲).

Representing and interpreting data to solve problems also develops mathematical practices such making sense of problems (MP.1), reasoning quantitatively (MP.2), justifying conclusions (MP.3), appropriate use of tools (MP.5), attention to precision (MP.6), and evaluating the reasonableness of results (MP. 8) (California Mathematics Framework, November 6, 2013).

2.MD.10 Example: Students are responsible for purchasing ice cream for an event at school. They decide to collect data to determine which flavors to buy for the event. Students decide on the question, "What is your favorite flavor of ice cream?" and four likely responses, chocolate, vanilla, strawberry, and cherry. Students form two teams and collect information from different classes in their school. Each team decides how to keep track of the data (e.g., tally marks, in a table, check marks). Each team selects either a picture graph or a bar graph to display their data. They create the graph using paper or a computer. Examples of graphs are provided below.



Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.G.A Reason with shapes and their attributes.

2.G.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.

Essential Skills and Concepts:
- ☐ Recognize that shapes have specified attributes
- ☐ Draw shapes with given attributes
- ☐ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes

Question Stems and Prompts:
- ✓ What shape is this? How do you know?
- ✓ Draw a shape that has __ faces? ___ sides? Or ____ vertices?
- ✓ How many faces does a ___ have?
- ✓ If a shape has no angles, what is it?
- ✓ Draw a shape then describe its attributes.

Vocabulary	**Spanish Cognates**
Tier 2	
• attribute	atributo
• angles	ángulos
• equal	igual
• draw	
Tier 3	
• triangle	triángulo
• quadrilateral	cuadrilátεral
• pentagon	pentágono
• hexagon	hexágono
• cube	cubo

Standards Connections
2.G.1 → 3.G.1

2.G.1 Example:

Name 2.G.1

Look at the chart. Fill in the missing boxes.

Name of Shape	Picture	Number of Sides	Number of Corners
Hexagon			
		3	
			4
			
Rhombus			

[5] Sizes are compared directly or visually, not compared by measuring.

2nd Grade – CCSS for Mathematics

2.G.A Reason with shapes and their attributes.

2.G.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.

Essential Skills and Concepts:
- ☐ Recognize that shapes have specified attributes
- ☐ Draw shapes with given attributes
- ☐ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes

Question Stems and Prompts:
- ✓ What shape is this? How do you know?
- ✓ Draw a shape that has __ faces? ___ sides? Or ____ vertices?
- ✓ How many faces does a ___ have?
- ✓ If a shape has no angles, what is it?
- ✓ Draw a shape then describe its attributes.

Vocabulary	**Spanish Cognates**
Tier 2	
• attribute	atributo
• angles	ángulos
• equal	igual
• draw	
Tier 3	
• triangle	triángulo
• quadrilateral	cuadrilátεral
• pentagon	pentágono
• hexagon	hexágono
• cube	cubo

Standards Connections
2.G.1 → 3.G.1

2.G.1 Example:

Name 2.G.1

Look at the chart. Fill in the missing boxes.

Name of Shape	Picture	Number of Sides	Number of Corners
Hexagon			
		3	
			4
			
Rhombus			

[5] Sizes are compared directly or visually, not compared by measuring.

Tulare County Office of Education
http://commoncore.tcoe.org/licensir
2nd edition 6/19

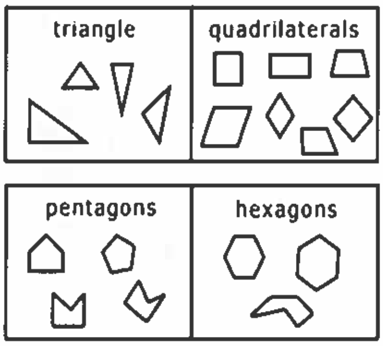
2.G.A.1

Standard Explanation

Grade one students reasoned about attributes of geometric shapes. A critical area of instruction in second grade is for students to describe and analyze shapes by examining their sides and angles. This work will develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Students identify, describe, and draw triangles, quadrilaterals (squares, rectangles and parallelograms, and trapezoids), pentagons, hexagons, and cubes (2.G.1). Pentagons, triangles, and hexagons should appear as both regular (equal sides and equal angles) and irregular. Students recognize all four sided shapes as quadrilaterals. Students use the vocabulary word "angle" in place of "corner," but they do not need to name angle types (e.g. right, acute, obtuse). Shapes should be presented in a variety of orientations and configurations.

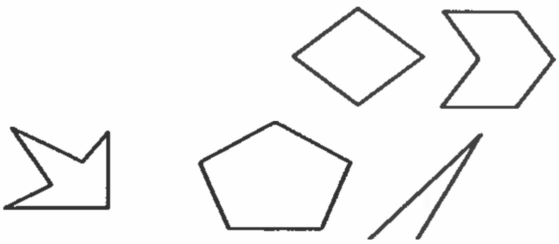
As students use attributes to identify and describe shapes they also develop mathematical practices such as analyzing givens and constraints (MP.1), justifying conclusions (MP.3), modeling with mathematics (MP.4) appropriate use of tools (MP.5), attention to precision (MP.6), and looking for a pattern or structure (MP. 7) (California *Mathematics Framework*, November 6, 2013).



2.G.1 Illustrative Task:

- Polygons, https://www.illustrativemathematics.org/illustrations/1506

- Color the inside of all the triangles blue.
- Color the inside of all the quadrilaterals red.
- Color the inside of all the pentagons orange.
- Color the inside of all the hexagons green.
- Circle all the shapes that have sides that are equal.



2^{nd} Grade – CCSS for Mathematics

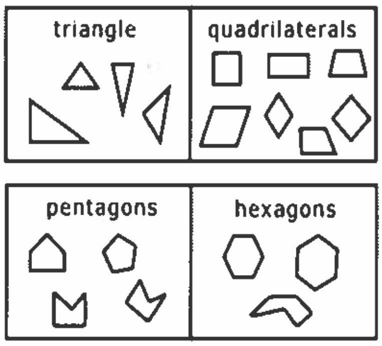
2.G.A.1

Standard Explanation

Grade one students reasoned about attributes of geometric shapes. A critical area of instruction in second grade is for students to describe and analyze shapes by examining their sides and angles. This work will develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Students identify, describe, and draw triangles, quadrilaterals (squares, rectangles and parallelograms, and trapezoids), pentagons, hexagons, and cubes (2.G.1). Pentagons, triangles, and hexagons should appear as both regular (equal sides and equal angles) and irregular. Students recognize all four sided shapes as quadrilaterals. Students use the vocabulary word "angle" in place of "corner," but they do not need to name angle types (e.g. right, acute, obtuse). Shapes should be presented in a variety of orientations and configurations.

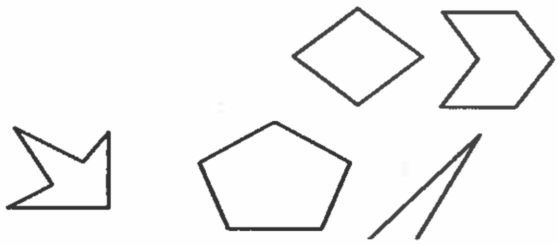
As students use attributes to identify and describe shapes they also develop mathematical practices such as analyzing givens and constraints (MP.1), justifying conclusions (MP.3), modeling with mathematics (MP.4) appropriate use of tools (MP.5), attention to precision (MP.6), and looking for a pattern or structure (MP. 7) (California *Mathematics Framework*, November 6, 2013).



2.G.1 Illustrative Task:

- Polygons, https://www.illustrativemathematics.org/illustrations/1506

- Color the inside of all the triangles blue.
- Color the inside of all the quadrilaterals red.
- Color the inside of all the pentagons orange.
- Color the inside of all the hexagons green.
- Circle all the shapes that have sides that are equal.



Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2^{nd} edition 6/19

2.G.A Reason with shapes and their attributes.

2.G. 2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

Essential Skills and Concepts:
- ☐ Divide a rectangle into rows and columns
- ☐ Count the number of squares in the array

Question Stems and Prompts:
- ✓ What is the total number of squares in this rectangle?
- ✓ Break this rectangle into ___ rows and ____ columns. How many same size squares did you create?

Vocabulary	**Spanish Cognates**
Tier 2	
• partition	partición
• row	
• columns	columnas
Tier 3	
• array	
• rectangle	rectángulo
• square	

Standards Connections
2.G.2 → 2.G.3

2.G.2 Example:

Name:________________________________
2.G.2

1. How many different rectangles can you make using 12 squares? Draw them below:

2. Label how many squares are in each row and column in each rectangle.

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.G.2

2nd Grade – CCSS for Mathematics

2.G.A Reason with shapes and their attributes.

2.G. 2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

Essential Skills and Concepts:
- ☐ Divide a rectangle into rows and columns
- ☐ Count the number of squares in the array

Question Stems and Prompts:
- ✓ What is the total number of squares in this rectangle?
- ✓ Break this rectangle into ___ rows and ____ columns. How many same size squares did you create?

Vocabulary	**Spanish Cognates**
Tier 2	
• partition	partición
• row	
• columns	columnas
Tier 3	
• array	
• rectangle	rectángulo
• square	

Standards Connections
2.G.2 → 2.G.3

2.G.2 Example:

Name:________________________________
2.G.2

1. How many different rectangles can you make using 12 squares? Draw them below:

2. Label how many squares are in each row and column in each rectangle.

Howard County Public School System, https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.G.2

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.G.A Reason with shapes and their attributes.

2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

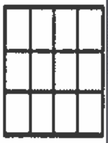
Standard Explanation

Students partition a rectangle into rows and columns of same-size squares and count to find the total number of squares. (2.G.2) As students partition rectangles into rows and columns they build a foundation for learning about the area of a rectangle and using arrays for multiplication.

An interactive whiteboard or manipulatives such as square tiles, cubes, or other square-shaped objects can be used to help students partition rectangles (MP.5) (California *Mathematics Framework,* November 6, 2013).

Example: Partition the rectangle into 3 equal rows and 4 equal columns. How can you partition into 3 equal rows? Then into 4 equal columns? Can you do it in the other order? How many small squares did you make?

Student: "I counted 12 squares in this rectangle. This is a lot like when we counted arrays by counting 4+4+4=12."



2nd Grade – CCSS for Mathematics

2.G.A Reason with shapes and their attributes.

2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

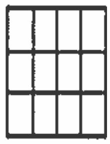
Standard Explanation

Students partition a rectangle into rows and columns of same-size squares and count to find the total number of squares. (2.G.2) As students partition rectangles into rows and columns they build a foundation for learning about the area of a rectangle and using arrays for multiplication.

An interactive whiteboard or manipulatives such as square tiles, cubes, or other square-shaped objects can be used to help students partition rectangles (MP.5) (California Mathematics Framework, November 6, 2013).

Example: Partition the rectangle into 3 equal rows and 4 equal columns. How can you partition into 3 equal rows? Then into 4 equal columns? Can you do it in the other order? How many small squares did you make?

Student: "I counted 12 squares in this rectangle. This is a lot like when we counted arrays by counting 4+4+4=12."



Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.G.A Reason with shapes and their attributes.

2.G.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.

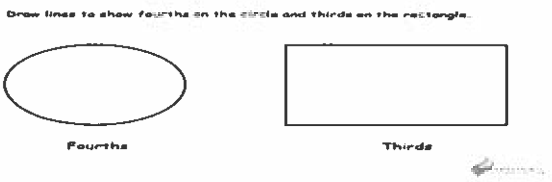
Essential Skills and Concepts:
- ☐ Partition/cut circles and rectangles into equal shares of two, three, or four
- ☐ Identify the shares of the shapes using academic language such as halves, thirds, half of, a third of, etc.

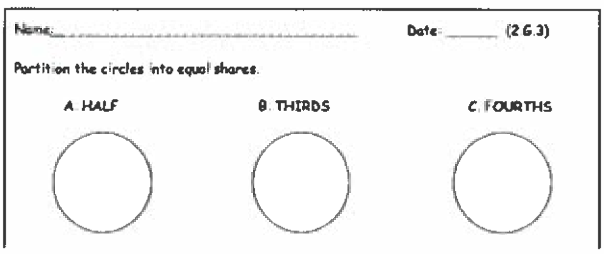
Question Stems and Prompts:
- ✓ Partition/cut the circle into ___ equal parts?
- ✓ What is this one equal part called?
- ✓ How many equal parts make a whole?

Vocabulary	Spanish Cognates
Tier 2	
• Partition	partición
• equal	igual
• identical	idéntico
• whole	
• part	parte
Tier 3	
• half/half of	
• third/a third of	
• fourth/a fourth of	
• quarter/a quarter of	
• circle	círculo
• rectangle	rectángulo

Standards Connections
2.G.3 → 3.NF.1

2.G.3 Example:





2nd Grade – CCSS for Mathematics

2.G.A Reason with shapes and their attributes.

2.G.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.

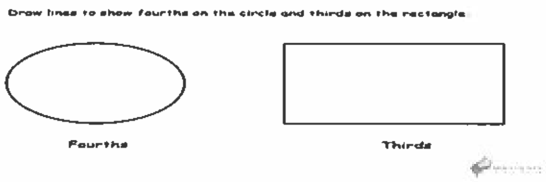
Essential Skills and Concepts:
☐ Partition/cut circles and rectangles into equal shares of two, three, or four
☐ Identify the shares of the shapes using academic language such as halves, thirds, half of, a third of, etc.

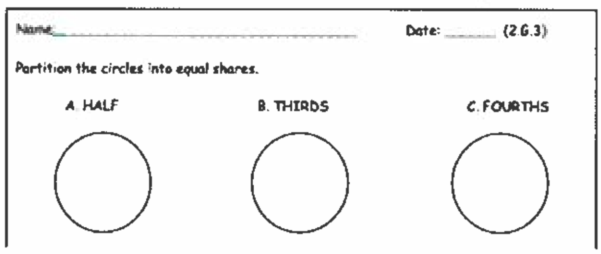
Question Stems and Prompts:
✓ Partition/cut the circle into ___ equal parts?
✓ What is this one equal part called?
✓ How many equal parts make a whole?

Vocabulary / Spanish Cognates
Tier 2
• Partition partición
• equal igual
• identical idéntico
• whole
• part parte
Tier 3
• half/half of
• third/a third of
• fourth/a fourth of
• quarter/a quarter of
• circle círculo
• rectangle rectángulo

Standards Connections
2.G.3 → 3.NF.1

2.G.3 Example:





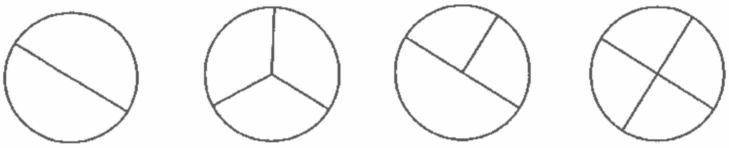
Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

2.G.A Reason with shapes and their attributes.

2.G.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.

Standard Explanation

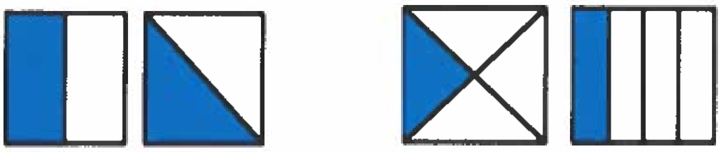
In first grade students partitioned shapes into halves, fourth and quarters. Second grade students partition circles and rectangles into 2, 3 or 4 equal shares (regions). Students explore this concept with paper strips and pictorial representations and work with the vocabulary terms halves, thirds, halves, and fourths. (2.G.3) Students recognize that when they cut a circle into three equal pieces, each piece will equal one third of its original whole and students describe the whole as three thirds. If a circle is cut into four equal pieces, each piece will equal one fourth of its original whole and the whole is described as four fourths.



Circle cut into halves | Circle cut into thirds | Circle NOT cut into thirds | Circle cut into fourths

Students should see circles and rectangles partitioned in multiple ways so they learn to recognize that equal shares can be different shapes within the same whole.

halves | fourths



As students partition circles and squares and explain their thinking they develop mathematical practices such as making sense of quantities (MP.2), justifying conclusions (MP.3), attending to precision (MP.6), and evaluating the reasonableness of their results (MP. 7). They also develop understandings that will support major work at grade three in the cluster "Develop understanding of fractions as numbers". (Adapted from Arizona 2012 and N. Carolina 2013)

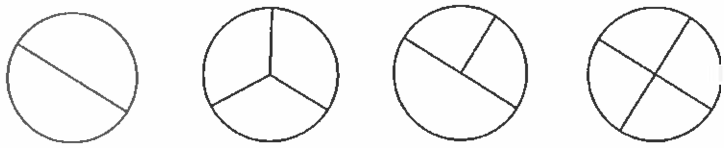
2nd Grade – CCSS for Mathematics

2.G.A Reason with shapes and their attributes.

2.G.3 Partition circles and rectangles into two, three, or fou 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.

Standard Explanation

In first grade students partitioned shapes into halves, fourth and quarters. Second grade students partition circles and rectangles into 2, 3 or 4 equal shares (regions). Students explore this concept with paper strips and pictorial representations and work with the vocabulary terms halves, thirds, halves, and fourths. (2.G.3) Students recognize that when they cut a circle into three equal pieces, each piece will equal one third of its original whole and students describe the whole as three thirds. If a circle is cut into four equal pieces, each piece will equal one fourth of its original whole and the whole is described as four fourths.



Circle cut into halves | Circle cut into thirds | Circle NOT cut into thirds | Circle cut into fourths

Students should see circles and rectangles partitioned in multiple ways so they learn to recognize that equal shares can be different shapes within the same whole.

halves | fourths

As students partition circles and squares and explain their thinking they develop mathematical practices such as making sense of quantities (MP.2), justifying conclusions (MP.3), attending to precision (MP.6), and evaluating the reasonableness of their results (MP. 7). They also develop understandings that will support major work at grade three in the cluster "Develop understanding of fractions as numbers". (Adapted from Arizona 2012 and N. Carolina 2013)

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

Resources for the CCSS 2nd Grade Bookmarks

California *Mathematics Framework*, adopted by the California State Board of Education November 6, 2013, http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp

Student Achievement Partners, Achieve the Core http://achievethecore.org/, Focus by Grade Level, http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/774/focus-by-grade-level

Common Core Standards Writing Team. Progressions for the Common Core State Standards in Mathematics Tucson, AZ: Institute for Mathematics and Education, University of Arizona (Drafts)

- K, Counting and Cardinality; K – 5 Operations and Algebraic Thinking (2011, May 29)
- K – 5, Number and Operations in Base Ten (2012, April 21)
- K – 3, Categorical Data; Grades 2 – 5, Measurement Data* (2011, June 20)
- K – 5, Geometric Measurement (2012, June 23)
- K – 6, Geometry (2012, June 23)
- Number and Operations – Fractions, 3 – 5 (2013, September 19)

Illustrative Mathematics™ was originally developed at the University of Arizona (2011), nonprofit corporation (2013), Illustrative Tasks, http://www.illustrativemathematics.org/

Student Achievement Partners, Achieve the Core http://achievethecore.org/, Focus by Grade Level, http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/774/focus-by-grade-level

North Carolina Department of Public Instruction, Instructional Support Tools for Achieving New Standards, Math Unpacking Standards 2012, http://www.ncpublicschools.org/acre/standards/common-core-tools/ - unmath

Common Core Flipbooks 2012, Kansas Association of Teachers of Mathematics (KATM) http://www.katm.org/baker/pages/common-core-resources.php

2nd Grade – CCSS for Mathematics

Resources for the CCSS 2nd Grade Bookmarks

California *Mathematics Framework*, adopted by the California State Board of Education November 6, 2013, http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp

Student Achievement Partners, Achieve the Core http://achievethecore.org/, Focus by Grade Level, http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/774/focus-by-grade-level

Common Core Standards Writing Team. Progressions for the Common Core State Standards in Mathematics Tucson, AZ: Institute for Mathematics and Education, University of Arizona (Drafts)

- K, Counting and Cardinality; K – 5 Operations and Algebraic Thinking (2011, May 29)
- K – 5, Number and Operations in Base Ten (2012, April 21)
- K – 3, Categorical Data; Grades 2 – 5, Measurement Data* (2011, June 20)
- K – 5, Geometric Measurement (2012, June 23)
- K – 6, Geometry (2012, June 23)
- Number and Operations – Fractions, 3 – 5 (2013, September 19)

Illustrative Mathematics™ was originally developed at the University of Arizona (2011), nonprofit corporation (2013), Illustrative Tasks, http://www.illustrativemathematics.org/

Student Achievement Partners, Achieve the Core http://achievethecore.org/, Focus by Grade Level, http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/774/focus-by-grade-level

North Carolina Department of Public Instruction, Instructional Support Tools for Achieving New Standards, Math Unpacking Standards 2012, http://www.ncpublicschools.org/acre/standards/common-core-tools/ - unmath

Common Core Flipbooks 2012, Kansas Association of Teachers of Mathematics (KATM) http://www.katm.org/baker/pages/common-core-resources.php

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19

Arizona's College and Career Ready Standards – Mathematics – Kindergarten, Arizona Department of Education – High Academic Standards for Students Arizona's College and Career Ready Standards – Mathematics, State Board Approved June 2010 October 2013 Publication, http://www.azed.gov/azccrs/mathstandards/

Howard County Public School System, Elementary Mathematics Office, Standards for Mathematical Practice for Parents, Draft 2011, https://grade3commoncoremath.wikispaces.hcpss.org/file/view/SFMP for Parents.docx/286906254/SFMP for Parents.docx

Howard County Public School System, Elementary and Secondary Mathematics Offices, Wiki Content and Resources, Elementary by grade level https://grade5commoncoremath.wikispaces.hcpss.org/home, and Secondary https://secondarymathcommoncore.wikispaces.hcpss.org

Long Beach Unified School District, Math Cognates, retrieved on 7/14/14, http://www.lbschools.net/Main_Offices/Curriculum/Areas/Mathematics/XCD/ListOfMathCognates.pdf

A Graph of the Content Standards, Jason Zimba, June 7, 2012, http://tinyurl.com/ccssmgraph

2nd Grade – CCSS for Mathematics

Arizona's College and Career Ready Standards – Mathematics – Kindergarten, Arizona Department of Education – High Academic Standards for Students Arizona's College and Career Ready Standards – Mathematics, State Board Approved June 2010 October 2013 Publication, http://www.azed.gov/azccrs/mathstandards/

Howard County Public School System, Elementary Mathematics Office, Standards for Mathematical Practice for Parents, Draft 2011, https://grade3commoncoremath.wikispaces.hcpss.org/file/view/SFMP for Parents.docx/286906254/SFMP for Parents.docx

Howard County Public School System, Elementary and Secondary Mathematics Offices, Wiki Content and Resources, Elementary by grade level https://grade5commoncoremath.wikispaces.hcpss.org/home, and Secondary https://secondarymathcommoncore.wikispaces.hcpss.org

Long Beach Unified School District, Math Cognates, retrieved on 7/14/14, http://www.lbschools.net/Main_Offices/Curriculum/Areas/Mathematics/XCD/ListOfMathCognates.pdf

A Graph of the Content Standards, Jason Zimba, June 7, 2012, http://tinyurl.com/ccssmgraph

Tulare County Office of Education
http://commoncore.tcoe.org/licensing
2nd edition 6/19