Sacramento City Unified School District

CCSS-M Teacher Professional Learning

Session #1, October 2014

Grade 1

Packet Contents

(Selected pages relevant to session work)

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Grade 1

Operations and Algebraic Thinking — 1.OA

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.[2]
2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

3. Apply properties of operations as strategies to add and subtract.[3] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*
4. Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*

Add and subtract within 20.

5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
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).

Work with addition and subtraction equations.

7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*
8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.*

Number and Operations in Base Ten — 1.NBT

Extend the counting sequence.

1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
   a. 10 can be thought of as a bundle of ten ones — called a “ten.”

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[2] See Glossary, Table 1.
[3] Students need not use formal terms for these properties.

Common Core State Standards - Mathematics
Standards for Mathematical Practices – 1st Grade

Standard for Mathematical Practice	1st Grade
1: Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, - Does this make sense? They are willing to try other approaches.
2: Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*-to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents-and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities.

3: Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and-if there is a flaw in an argument-explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	First graders construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also practice their mathematical communication skills as they participate in mathematical discussions involving questions like -How did you get that? -Explain your thinking, and -Why is that true? They not only explain their own thinking, but listen to others' explanations. They decide if the explanations make sense and ask questions.
4: Model with mathematics. Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.

5: Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose	In first grade, students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, first graders decide it might be best to use colored chips to model an addition problem.
6: Attend to precision. Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	As young children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.

7: Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7 × 8 equals the well remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the expression $x2 + 9x + 14$, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.	First graders begin to discern a number pattern or structure. For instance, if students recognize *12 + 3 = 15,* then they also know *3 + 12 = 15. (Commutative property of addition.)* To add *4 + 6 + 4, the first two numbers can be added to make a ten, so 4 + 6 + 4 = 10 + 4 = 14.*
8: Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x2 + x + 1)$, and $(x – 1)(x3 + x2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	In the early grades, students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract -ten and multiples of -ten they notice the pattern and gain a better understanding of place value. Students continually check their work by asking themselves, -Does this make sense?

Common Misconceptions.

- Some students misunderstand the meaning of the equal sign. The equal sign means “is the same as,” but many primary students think the equal sign means “the answer is coming up” to the right of the equal sign. When students see only examples of number sentences with the operation to the left of the equal sign and the answer to the right, they overgeneralize the meaning of the equal sign, which creates this misconception. First graders should see equations written multiple ways, for example 5 + 7 = 12 and 12 = 5 + 7. The Put Together/Take Apart Both (with addends unknown) problems—such as “Robbie puts 12 balls in a basket. 4 are white and the rest are black. How many are black?”—are particularly helpful for eliciting equations such as 12 = 5 + 7. These equations can begin in kindergarten with small numbers (5 = 4 + 1) and they should be used throughout grade one for such problems.
- Many students assume key words or phrases in a problem suggest the same operation every time. For example, students might assume the word “left” always means subtract to find a solution. To help students avoid this misconception include problems in which key words represent different operations. For example, Joe took 8 stickers he no longer wanted and gave them to Anna. Now Joe has 11 stickers “left”. How many stickers did Joe have to begin with? Facilitate students’ understanding of scenarios represented in word problems. Students should analyze word problems (**MP.1, MP.2**) and not rely on key words.

Students can collaborate in small groups to develop problem solving strategies. Grade one students use a variety of strategies and models, such as drawings, words, and equations with symbols for the unknown numbers, to find the solutions. Students explain, write, and reflect on their problem solving strategies. **(MP.1, MP.2, MP.3, MP.4, MP.6)** For example, each student could write or draw a problem in which three whole things are to be combined. Students might exchange their problems with other students, solve them individually, and then discuss their models and solution strategies. The students work together to solve each problem using a different strategy. The level of difficulty for these problems can also be differentiated by using smaller numbers (up to 10) or larger numbers (up to 20).

Operations and Algebraic Thinking 1.OA

Understand and apply properties of operations and the relationship between addition and

subtraction.

3. Apply properties of operations as strategies to add and subtract.[3] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*
4. Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*

First grade students build their understanding of the relationship between addition and subtraction. Instruction should include opportunities for students to investigate, identify and then apply a pattern or structure in mathematics. For example, pose a string of addition and subtraction problems involving the same three numbers chosen from the numbers 0 to 20 (e.g., 4 + 6 = 10 and 6 + 4 = 10, 10 – 6 = 4 and 10 – 4 = 6). These are related facts—a set of three numbers that can be expressed with an addition or subtraction equation. Related facts help develop an understanding of the relationship between addition and subtraction and the commutative and associative properties.

Students apply properties of operations as strategies to add and subtract **(1.OA.3▲)**. Although it is not necessary for grade one students to learn the names of the properties, students need to understand the important ideas of the following properties:

- Identity property of addition (e.g., 6 = 6 + 0). "Adding 0 to a number results in the same number."
- Identity property of subtraction (e.g., 9 – 0 = 9). "Subtracting 0 from a number results in the same number."
- Commutative property of addition (e.g., 4 + 5 = 5 + 4). "The order in which you add numbers doesn't matter."
- Associative property of addition (e.g., 3 + (9 + 1) = (3 + 9) +1 = 12 + 1 =13). "When adding more than two numbers, it doesn't matter which numbers you add together first."

Example.
Students build a tower of 8 green cubes and 3 yellow cubes, and another tower of 3 yellow and 8 green

[3] Students need not use formal terms for these properties.

cubes to show that order does not change the result in the operation of addition. Students can also use cubes of 3 different colors to demonstrate that (2 + 6) + 4 is equivalent to 2 + (6 + 4) and then to prove 2 + (6 + 4) = 2 + 10.

[Note; Sidebar]

Focus, Coherence, and Rigor

Students apply the commutative and associative properties as strategies to solve addition problems **(1.OA.3▲)** (these properties do not apply to subtraction). They use mathematical tools, such as cubes and counters, and visual models (e.g., drawings and a 100 chart) to model and explain their thinking. Students can share, discuss, and compare their strategies as a class. (**MP.2, MP.7, and MP.8**)

Students understand subtraction as an unknown-addend problem. **(1.OA.4▲).** Word problems such as Put Together/Take Apart (with addend unknown) afford students a context to see subtraction as the opposite of addition by finding an unknown addend. Understanding subtraction as an unknown-addend addition problem is one of the essential understandings students will need in middle school to extend arithmetic to negative rational numbers (Adapted from Arizona 2010 and Progressions, K-5 CC and OA 2011).

Common Misconceptions.

Students may assume that the commutative property applies to subtraction. After students have discovered and applied the commutative property of addition, ask them to investigate whether this property works for subtraction. Have students share and discuss their reasoning and guide them to conclude that the commutative property does not apply to subtraction (Adapted from KATM 1st FlipBook 2012).

This can be challenging because students might think they can switch the addends in subtraction equations because of their work with related fact equations using the commutative property for addition, but students need to understand they cannot switch the total and an addend.

Operations and Algebraic Thinking 1.OA

Add and subtract within 20.

5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
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

Domain: **Operations and Algebraic Thinking (OA)**

Cluster: Understand and apply properties of operations and the relationship between addition and subtraction.

Standard: **1.OA.3**

Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) (*Students need not use formal terms for these properties.)

Standards for Mathematical Practice (MP):

MP.2. Reason abstractly and quantitatively.

MP.7. Look for and make use of structure.

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

Connections:

This cluster is connected to the First Grade Critical Area of Focus #1**, Developing understanding of addition, subtraction, and strategies for addition and subtraction within 20**.

This cluster is connected to *Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from* in Kindergarten, to *Add and subtract within 20* and *Use place value understanding and properties of operations to add and subtract* in Grade 1 and to *Use place value understanding and properties of operations to add and subtract* in Grade 2.

Explanations and Examples:

1.OA.3 calls for students to apply properties of operations as strategies to **add** and **subtract**. Students do not need to use formal terms for these properties. Students should use mathematical tools, such as cubes and counters, and representations such as the number line and a 100 chart to model these ideas.

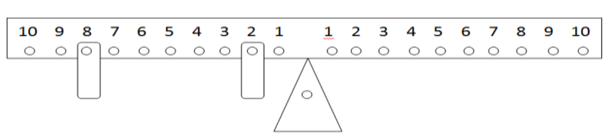
Example:

Student can build a tower of 8 green cubes and 3 yellow cubes and another tower of 3 yellow and 8 green cubes to show that order does not change the result in the operation of addition. Students can also use cubes of 3 different colors to prove that (2 + 6) + 4 is equivalent to 2 + (6 + 4) and then to prove 2 + 6 + 4 = 2 + 10. Students should understand the important ideas of the following properties:

- Identity property of addition (e.g., 6 = 6 + 0)
- Identity property of subtraction (e.g., 9 – 0 = 9)
- Commutative property of addition--Order does not matter when you add numbers. e.g. 4 + 5 = 5 + 4)
- Associative property of addition--When adding a string of numbers you can add any two numbers first. (e.g., 3 + 9 + 1 = 3 + 10 = 13)

Student 1

Using a number balance to investigate the commutative property. If I put a weight on 8 *first* and *then* 2, I think that it will balance if I put a weight on 2 *first* this time *then* on 8.



Students need several experiences investigating whether the commutative property works with subtraction. The intent is not for students to experiment with negative numbers but only to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should recognize that they will be working with numbers later on that will allow them to subtract larger numbers from smaller numbers. However, in first grade we do not work with negative numbers.

Instructional Strategies (1.AO. 3-4)

Instruction needs to focus on lessons that help students to discover and apply the commutative and associative properties as strategies for solving addition problems. It is not necessary for students to learn the names for these properties. It is important for students to share, discuss and compare their strategies as a class. The second focus is using the relationship between addition and subtraction as a strategy to solve unknown-addend problems. Students naturally connect counting on to solving subtraction problems. For the problem "15 – 7 = ?" they think about the number they have to add to 7 to get to 15. First graders should be working with sums and differences less than or equal to 20 using the numbers 0 to 20.

Provide investigations that require students to identify and then apply a pattern or structure in mathematics. For example, pose a string of addition and subtraction problems involving the same three numbers chosen from the numbers 0 to 20, like 4 + 13 = 17 and 13 + 4 = 17. Students analyze number patterns and create conjectures or guesses. Have students choose other combinations of three numbers and explore to see if the patterns work for all numbers 0 to 20. Students then share and discuss their reasoning. Be sure to highlight students' uses of the commutative and associative properties and the relationship between addition and subtraction.

Expand the student work to three or more addends to provide the opportunities to change the order and/or groupings to make tens. This will allow the connections between place-value models and the properties of operations for addition to be seen. Understanding the commutative and associative properties builds flexibility for computation and estimation, a key element of number sense.

Provide multiple opportunities for students to study the relationship between addition and subtraction in a variety of ways, including games, modeling and real-world situations. Students need to understand that addition and subtraction are related, and that subtraction can be used to solve problems where the addend is unknown.

Common Misconceptions:

A common misconception is that the commutative property applies to subtraction. After students have discovered and applied the commutative property for addition, ask them to investigate whether this property works for subtraction. Have students share and discuss their reasoning and guide them to conclude that the commutative property does not apply to subtraction.

First graders might have informally encountered negative numbers in their lives, so they think they can take away more than the number of items in a given set, resulting in a negative number below zero. Provide many problems situations where students take away all objects from a set, e.g. 19 - 19 = 0 and focus on the meaning of 0 objects and 0 as a number. Ask students to discuss whether they can take away more objects than what they have.

Domain: **Operations and Algebraic Thinking (OA)**

Cluster: Understand and apply properties of operations and the relationship between addition and subtraction.

Standard: **1.OA.4** Understand subtraction as an unknown-addend problem.
For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.

Standards for Mathematical Practice (MP):

MP.2. Reason abstractly and quantitatively.
MP.7. Look for and make use of structure.
MP.8. Look for and express regularity in repeated reasoning.

Connections:

See 1.0A.3

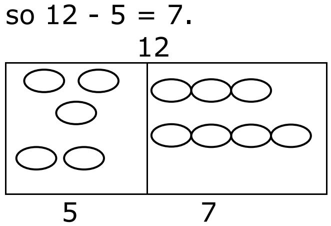
Explanations and Examples:

1.OA.4 asks for students to use subtraction in the context of unknown addend problems.
When determining the answer to a subtraction problem, 12 - 5, students think, “If I have 5, how many more do I need to make 12?” Encouraging students to record this symbolically, 5 + ? = 12, will develop their understanding of the relationship between addition and subtraction. Some strategies they may use are counting objects, creating drawings, counting up, using number lines or 10 frames to determine an answer. Refer to Table 1 to consider the level of difficulty of this standard.

Example:
12 – 5 = __ could be expressed as 5 + __ = 12. Students should use cubes and counters, and representations such as the number line and the100 chart, to model and solve problems involving the inverse relationship between addition and subtraction.

Student 1
I used a ten frame. I started with 5 counters. I now that I had to have 12, which is one full ten fram and two left overs. I needed 7 counters, so 12 – 5 = 7

Student 2
I used a part-part-whole diagram. I put 5 counters on one side. I wrote 12 above the diagram. I put counters into the other side until there were 12 in all. I know I put 7 counters into the other side, so 12 - 5 = 7.



Student 3
Draw a number line
I started at 5 and counted up until I reached 12. I counted 7 numbers, so I knew that 12 – 5 = 7.

Instructional Strategies:

See 1.OA.3

Common Misconceptions:

See 1.OA.3

Unit 1: Adding & Subtracting Within 20 **Domain: Operations and Algebraic Thinking** **Cluster: Understand and apply properties of operations and the relationship between addition and subtraction**
Sequence of Learning Outcomes **1.OA.3 – 1.OA.4**
3. Identify properties of addition and subtraction such as adding or subtracting zero to or from a number resulting in the same number (e.g., 6 = 6 + 0; 6 – 0 = 6).
4. Apply and understand commutative (e.g., 4 + 5 = 5 + 4) and associate (e.g., 3 + (9 + 1) = (3 + 9) + 1; (3 + 9) + 1= 12 + 1 = 13) properties of addition.
5. Investigate, identify, and apply a pattern or structure in addition and subtraction (e.g., the relationship between numbers 4, 6, and 10).
6. Understand and solve subtraction problems as unknown-addend (e.g., 10 minus 8 can be solved by asking 8 plus what equals 10).

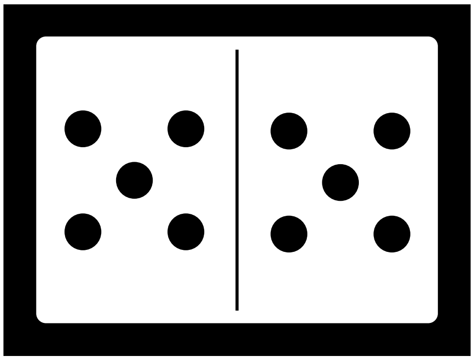
SCUSD 1st Grade Textbook

Sequence of Learning Outcomes 1.OA.3-4
1-7 Children will learn to add in any order.
2-1 Children will solve problems by finding the missing part.
2-2 Children will find a missing part of 8 when one part is known.
2-3 Children will use subtraction to find the missing part of 9 when one part is known.
3-4 Children will use counters and a part-part-whole mat to find missing parts of 10.
4-1 Children will count on to add, starting with the greater number.
4-7 Children will learn to use doubles addition facts to master related subtraction facts.
4-8 Children will understand how addition facts to 8 relate to subtraction facts to 8.
4-9 Children will write related addition and subtraction facts to 12.
5-8 Children will use the associative and commutative properties to add three numbers.
6-3 Find subtraction facts to 18 and learn the relationship between addition and subtraction.
6-4 Use a part-part-whole model to find the subtraction facts and addition facts in a fact family.

Name ________________________________

Mark the best answer.

1. Which number does the picture show?



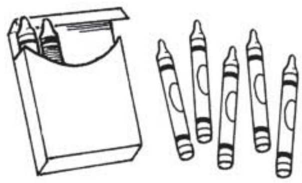
Ⓐ 5

Ⓑ 9

Ⓒ 10

Ⓓ 11

2. 2 crayons are inside the box.
5 crayons are outside the box.
How many crayons are there in all?



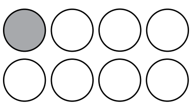
Ⓐ 2

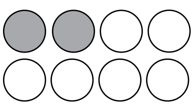
Ⓑ 3

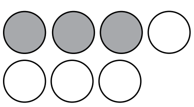
Ⓒ 5

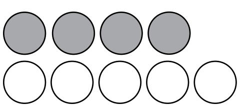
Ⓓ 7

3. Do the choices below show parts of 8? Mark *Yes* or *No.*

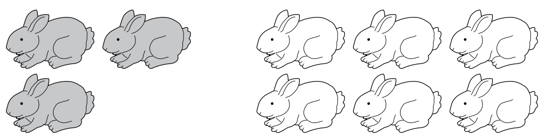
 Ⓐ Yes Ⓑ No

 Ⓐ Yes Ⓑ No

 Ⓐ Yes Ⓑ No

 Ⓐ Yes Ⓑ No

4. How many rabbits are there in all?



Ⓐ 10

Ⓑ 9

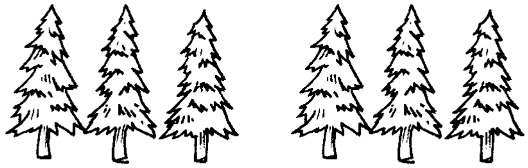
Ⓒ 6

Ⓓ 3

Name ____________________

Use the picture to solve. Write the parts.
Then write an addition sentence.

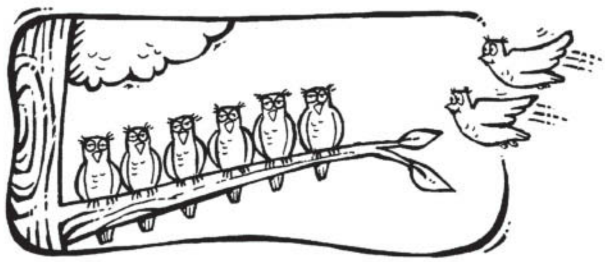
5. Ted drew 3 trees.
Then he drew 3 more.
How many trees did he draw in all? Write an addition sentence.



___ + ___

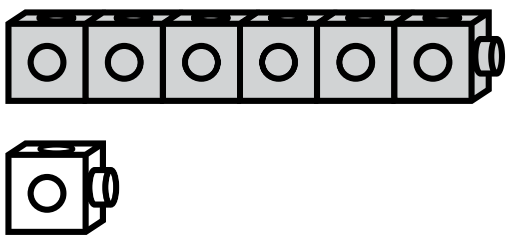
___ + ___ = ___

6. 6 birds are in a tree.
Some more birds join them.
Now there are 8 birds in all.
How many birds came to join? Write an addition sentence.



___ + ___ = ___

7. Use counters to solve.
Write the missing addend to complete each addition sentence.

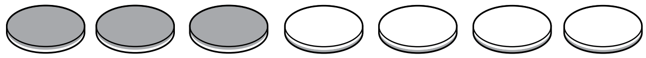


___ + 1 = 7

1 + ___ = 7

Name ______________________________

1. Which number sentences tell about the counters?



Ⓐ 3 + 3 = 6 4 + 2 = 6

Ⓑ 3 + 4 = 7 4 + 3 = 7

Ⓒ 4 + 4 = 8 5 + 3 = 8

Ⓓ 7 + 2 = 9 6 + 3 = 9

2. Kevin has 4 pennies in his left pocket.
He has the same number of pennies in his right pocket.
How many pennies are in Kevin's pockets in all?

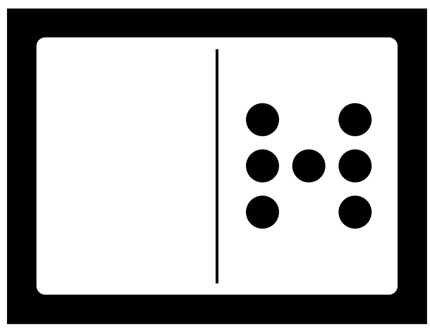
Ⓐ 10

Ⓑ 8

Ⓒ 6

Ⓓ 4

3. Complete the picture to solve.
Write the number sentences.



Marni has some hair ribbons.
She has 7 pink ribbons.
The rest are purple ribbons.
She has 10 hair ribbons in all.

_____ + _____ = _____

_____ + _____ = _____

