Sacramento City Unified School District

CCSS-M Teacher Professional Learning

Session #1, October 2014

KINDERGARTEN

Packet Contents

(Selected pages relevant to session work)

K Kindergarten

Counting and Cardinality K.CC

Know number names and the count sequence.

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).

Count to tell the number of objects.

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
   a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
   b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
   c. Understand that each successive number name refers to a quantity that is one larger.
5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Compare numbers.

6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1]
7. Compare two numbers between 1 and 10 presented as written numerals.

Operations and Algebraic Thinking K.OA

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction with objects, fingers, mental images, drawings,[2] sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

1. Includes groups with up to ten objects.
2. Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)

Common Core State Standards - Mathematics
Standards for Mathematical Practices - Kindergarten

Standard for Mathematical Practice	Kindergarten
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 Kindergarten, students begin to build the understanding 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? or they may try another strategy.
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 begin to recognize that a number represents a specific quantity. Then, 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.	Younger students construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like -How did you get that? and -Why is that true? They explain their thinking to others and respond to others' thinking.
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	Younger students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, kindergarteners may decide that it might be advantageous to use linking cubes to represent two quantities and then compare the two representations side-by-side.
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 kindergarteners begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in 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.	Younger students begin to discern a number pattern or structure. For instance, students recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated. They also recognize that 3 + 2 = 5 and 2 + 3 = 5.
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. For example, they may notice that the next number in a counting sequence is one more. When counting by tens, the next number in the sequence is -ten more (or one more group of ten). In addition, students continually check their work by asking themselves, -Does this make sense?

They understand 0 represents a count of no objects. Students need multiple opportunities to count objects and recognize that a number represents a specific quantity. As this understanding develops, students begin to read and write numerals. The emphasis should first be on quantity and then on connecting quantities to the written symbols.

Example: A Learning Sequence for Understanding Numbers.
A specific learning sequence might include: 1. Count up to 20 objects in many settings and situations over several weeks. 2. Start to recognize, identify, and read the written numerals, and match the numerals to given sets of objects. 3. Write the numerals to represent counted objects.

As students connect quantities and written numerals they also develop mathematical practices such as using precise vocabulary (**MP.6**) and noticing patterns in counting strategies (**MP.7**) (Adapted from Arizona 2010).

Common Misconceptions:

- Some students might not see zero as a number. Ask students to write 0 and say "zero" to represent the number of items left when all items have been taken away. Avoid using the word none to represent this situation.
- Teen numbers can also be confusing for young students. To help avoid confusion, these numbers should be taught as a bundle of ten ones and some extra ones. This approach supports a foundation for understanding both the place value concept and symbols that represent each teen number. Layered place value cards, described below, can help students understand the difficult teen numbers.

Adapted from (KATM K FlipBook 2012).

Counting and Cardinality K.CC

Count to tell the number of objects.

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
   a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
   b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

c. Understand that each successive number name refers to a quantity that is one larger.
5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

In kindergarten students develop an understanding of the relationship between numbers and quantities and connect counting to cardinality. (**K.CC.4▲**). Learning to count is a complex mental and physical activity that requires relating objects distributed in space (or in time) to words said over time. Kindergarten students use their understanding of the relationship between numbers and quantities to count a set of objects and see sets and numerals in relationship to one another, rather than as isolated concepts.

[Note: Sidebar]

The Five Major Principles of the Development of Students' Understanding of "How to Count" and "What to Count"

1. **One-to-One Correspondence Principle**: Students assign one, and only one, distinct counting word to each of the items to be counted. To follow this principle, students partition and re-partition the collection of objects to be counted into two categories: those that have been allocated a number name and those that have not. Students model numbers with objects and each object is assigned a unique number-name, based on one-to-one correspondence between each object and the number-name. If an item is not assigned a number name or is assigned more than one number name, the resulting count will be incorrect. (Refer to standard **K.CC.4a**)
2. **Standard-Order (of number-names) Principle**: Students recite a number-name list in a fixed order (e.g. students count "one, two, three" for a collection of three objects). In other words, students can rote-count. (Refer to standard **K.CC.4a**)
3. **Cardinal Principle**: Students understand that the last number-name used for the final object in a collection represents the number of items in that collection. This rule connects counting with "how many." (Refer to standard **K.CC.4b**)
4. **Order-Irrelevance Principle**: Students understand that the order in which objects are counted has no effect on the total number of objects and the quantity of a group of objects remains constant even when the objects are rearranged. (Refer to standard **K.CC.4b**)
5. **Abstraction Principle**: Students realize that the above four principles of counting apply to any collection of objects, whether tangible (e.g., marbles or blocks) or not (e.g., sounds or actions). Also objects can have similar attributes (e.g., yellow squares or red marbles) or different attributes (e.g., buttons of different colors, or toys of different types or sizes). (Refer to standard **K.CC.4**)

Many and varied opportunities for students to manipulate concrete objects or visual representations (e.g., dot cards, tens frames) and connect number-names with their quantities can help students master the concept of counting. (Adapted from N. Carolina 2013).

As students learn to count a group of objects, they pair each word said with one object (**K.CC.4a▲)**. This is usually facilitated by an indicating act (such as touching, pointing to objects, or moving them) that keeps each word said paired to one and only one object (one-to-one correspondence principle). Students learn that the last number named tells the number of objects counted (cardinality principle) and the number of objects is the same regardless of their arrangement or the order in which they were counted (order-irrelevance principle). They also understand that each successive number name refers to a quantity that is one larger. (**K.CC.4.b-c▲)** (Adapted from Progressions, K-5 CC and OA 2011).

To develop their understanding of the relationship between numbers and quantities, students might count objects, placing one more object in the group at a time.

Example:
Using cubes, students count an existing group, and then they place another cube in the set and continue counting. Students continue placing one more cube in the set at a time and then identify the new total number of cubes. Students see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. Students may need to re-count from one, but the goal is for students to count on from the existing number of cubes—a conceptual start for the grade one skill of counting to 120, starting at any number less than 120.

To count accurately, students rely on:

- Knowing patterns and arbitrary parts of the number word sequence
- Assigning one number word to one object (one-to one-correspondence)
- Keeping track of objects that have already been counted

(Adapted from Arizona 2010 and Georgia 2011)

Students answer questions such as “How many are there?” by counting objects in a set and understanding that the last number stated represents the total amount of objects (cardinality) (**K.CC.5▲).** Over time students realize the same set counted several different times will be the same amount each time. Counting objects arranged in a line is easiest; with more practice, students learn to count objects in more difficult arrangements, such as rectangular arrays, circles, and scattered configurations.

Scattered arrangements are the most challenging for students, thus kindergarten students only count up to 10 objects if arranged this way. Given a number from 1-20, kindergarten students also count out that many objects. This is also more difficult for students than simply counting the total number of objects, because they need to remember the number of objects to be counted out as they count. (Adapted from Progressions, K-5 CC and OA 2011, and N. Carolina 2013).

Examples of Counting Strategies
Students might use various counting strategies depending on how objects are arranged, such as: • Move objects as they count each; • Line-up objects to count; • Touch objects in a scattered arrangement as they count each; and • Count objects in a scattered arrangement by visually scanning each object without touching.

(Adapted from KATM K FlipBook 2012).

Focus, Coherence, and Rigor:

As students use various counting strategies when they participate in counting activities they reinforce their understanding of the relationship between numbers and quantities and support mathematical practices such as modeling with mathematics (**MP.4**), the use of precise language (**MP.6**), and repeated reasoning to find a solution (**MP.8**).

Students come to quickly perceive the number of items in small groups—such as recognizing dot arrangements in different patterns, without counting the objects. This is a fundamental skill in the development of students' understanding of numbers called *perceptual subitizing*. Perceptual subitizing develops into *conceptual subitizing*—recognizing a collection of objects as a composite of subparts and as a whole (e.g., seeing a five-dot domino and thinking 1 and 4 or seeing a set with two subsets of 2 and saying 4) (Adapted from Progressions, K-5 CC and OA 2011). Particularly important is the 5-group pattern in which one row of 5 circles has 1, 2, 3, 4, or 5 dots below to show 6, 7, 8, 9, and 10. These rows are separated more than the individual dots to ensure seeing the group of 5 and the extra dots.

Subitizing supports the development of addition and subtraction strategies such as counting on and composing and decomposing of numbers. Students need practice to develop competency in perceptual subitizing.

Example :
The teacher might place different amounts of beans on a mat (beginning with amounts of 4 or less) and then ask students to say how many they see. As students become proficient, dot cards can also be utilized to develop fluency. For example, the teacher can show a large dot card to students, and students then take the number counters they think they need to cover the dots on the card. Then one child places his/her counters on the dots while the rest of the class counts and checks. Eventually, the teacher briefly shows one large dot card and puts it down quickly. Then students try to recognize the number of dots without counting.

Counting and Cardinality	K.CC
Compare numbers. 6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[2] 7. Compare two numbers between 1 and 10 presented as written numerals.	

In kindergarten, students compare the number of objects in one group (with up to ten objects) to the number of objects in another group (**K.CC.6▲**). Students need a strong sense of the relationship between quantities and numerals to accurately compare groups and answer related questions. They can use matching strategies or counting

[2] Includes groups with up to ten objects.

Domain: **Counting and Cardinality (CC)**

Cluster: Count to tell the number of objects.

Standard: **K.CC.4**

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
   a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
   b) Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
   c) Understand that each successive number name refers to a quantity that is one larger.

Standards for Mathematical Practice (SMP) to be emphasized:

MP.2 Reason abstractly and quantitatively.
MP.6 Attend to precision
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 Kindergarten Critical Area of Focus #1, **Representing and comparing whole numbers, initially with sets of objects**. This cluster is connected to the other clusters in the Counting and Cardinality Domain and to *Classify objects and count the number of objects in each category* in Kindergarten, and to *Add and subtract within 20* in Grade 1.

Explanations and Examples:

K.CC.4 asks students to count a set of objects and see sets and numerals in relationship to one another, rather than as isolated numbers or sets. These connections are higher-level skills that require students to analyze, to reason about, and to explain relationships between numbers and sets of objects. This standard should first be addressed using numbers 1-5 with teachers building to the numbers 1-10 later in the year. The expectation is that students are comfortable with these skills with the numbers 1-10 by the end of Kindergarten.

K.CC.4a reflects the ideas that students implement correct counting procedures by pointing to one object at a time (one-to-one correspondence) using one counting word for each object (one-to-one touching/synchrony), while keeping track of objects that have and have not been counted.. This is the foundation of counting.

K.CC.4b calls for students to answer the question "How many are there?" by counting objects in a set and understanding that the last number stated when counting a set (…8, 9, **10**) represents the total amount of objects: "There are **10** bears in this pile." (*cardinality*). It also requires students to understand that the same set counted three different times will end up being the same amount each time. The idea is to develop a purpose for counting as keeping track of objects is developed. Therefore, a student who moves each object as it is counted recognizes that there is a need to keep track in order to figure out the amount of objects present. Conservation of number, (regardless of the arrangement of objects, the quantity remains the same), conservation of number is a developmental milestone which some Kindergarten children will not have mastered. The goal of this objective is for students to be able to count a set of objects; regardless of the formation those objects are placed.

K.CC.4c represents the concept of "one more" while counting a set of objects. Students are to make the connection that if a set of objects was increased by one more object then the number name for that set is to be increased by one as well. Students are asked to understand this concept with and without objects. For example, after counting a set of 8 objects, students should be able to answer the question, "How many would there be if we added one more object?"; and answer a similar question when not using objects, by asking hypothetically, "What if we have 5 cubes and added one more. How many cubes would there be then?" This concept should be first taught with numbers 1-5 before building to numbers 1-10. Students should be expected to be comfortable with this skill with numbers to 10 by the end of Kindergarten.

Domain: **Counting and Cardinality (CC)**

Cluster: Count to tell the number of objects.

Standard: **K.CC.5**
Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Standards for Mathematical Practice (SMP) to be emphasized:

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 K.CC.4 above

Explanations and Examples:

K.CC.5 addresses various counting strategies. From the research in early childhood mathematics, (Kathy Richardson), students go through a progression of four general ways to count. These counting strategies progress from least difficult to most difficult: 1) students move objects and count them as they move them, 2) students line up the objects and count them, 3) students have a scattered arrangement and they touch each object as they count and 4) students have a scattered arrangement and count them by visually scanning without touching them. Since the scattered arrangements are the most challenging for students, K.CC.5 calls for students to only count 10 objects in a scattered arrangement, and count up to 20 objects in a line, rectangular array, or circle. Out of these 3 representations, a line is the easiest type of arrangement to count.

Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects.

Examples:

- If items are placed in a circle, the student may mark or identify the starting object.
- If items are in a scattered configuration, the student may move the objects into an organized pattern.
- Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation).
- Counting up to 20 objects should be reinforced when collecting data to create charts and graphs.
  (A student may use a clicker (electronic response system) to communicate his/her count to the teacher).

Arizona & NC DOE

Common Misconceptions:

Some students might think that the count word used to tag an item is permanently connected to that item. So when the item is used again for counting and should be tagged with a different count word, the student uses the original count word. For example, a student counts four geometric figures: triangle, square, circle and rectangle with the count words: one, two, three, four. If these items are rearranged as rectangle, triangle, circle and square and counted, the student says these count words: four, one, three, two.

Also, Number lines are not appropriate for pre-K, Kindergarten, or grade 1. See explanation and research in Flip Book 1st grade, pages 8 and 9. (NCTM, 2011)

K.CC.5

SCUSD Kindergarten **Curriculum Map**

Unit 1: Counting and Cardinality Up to 20
Sequence of Learning Outcomes **K.CC.4, K.CC.5**
1. Count aloud by ones from 0 to 10, using manipulatives (for example counting geometric shapes: **circles, squares, triangles** in addition to number lines, five/ten frames). When counting, the order of direction does not matter (for example, counting objects from right to left, left to right, top to bottom, bottom to top, etc.).
2. Recognize a group of numbers (0-5) as a quantity without having to count by ones, regardless of position of objects.
3. Understand that the next number in the sequence is one more than the previous number.
5. Using a five frame and a ten frame, recognize a group of numbers (0-10) as a quantity of five ones and some more ones.
6. Count objects in a set, where the last number said is the total number of objects.
9. Count aloud by ones from 0 -20, using manipulatives (for example counting geometric shapes: **rectangles and hexagons**, in addition to number lines, ten frames).
10. Given any quantity between 0-20, use the strategy of counting on up to 20 orally and with objects to answer, “How many?”
11. Using two ten frames, recognize a group of numbers (11-20) as a quantity of ten ones and some more ones.

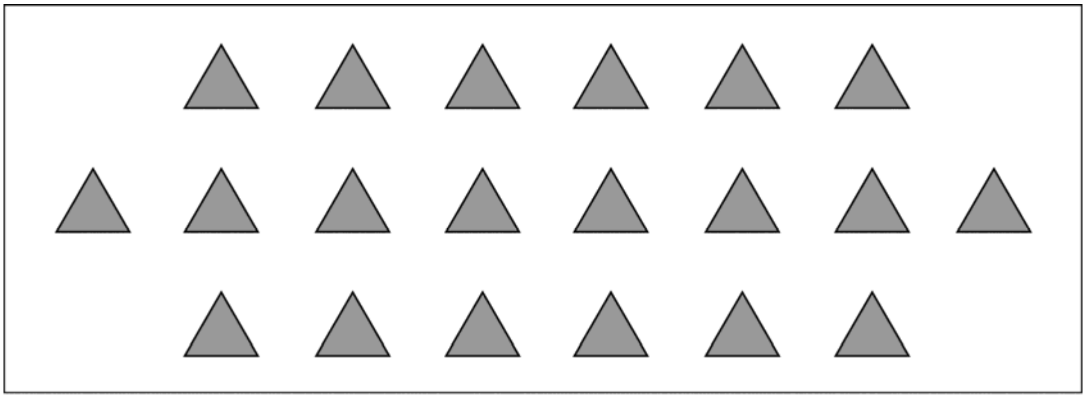
Kindergarten **enVision** Math Topics

Topics 1-5
Sequence of Learning Objectives
Topic 1: One to Five **Lesson 1-1: Counting 1, 2, and 3** In this lesson, you will • **count the quantities of objects using the number names 1, 2, and 3 in standard order**
Topic 1: One to Five **Lesson 1-2: Counting 1, 2, and 3 in Different Arrangements** In this lesson, you will • **identify whether a particular set includes 1, 2, or 3 objects, regardless of how the objects are arranged**
Topic 1: One to Five **Lesson 1-4: Counting 4 and 5** In this lesson, you will • **use objects to represent and count the quantities 4 and 5**
Topic 1: One to Five **Lesson 1-7: Problem Solving: Use Objects** In this lesson, you will • **solve problems by using objects**
Topic 2: Comparing and Order 0 to 5 **Lesson 2-6: The Number 0** In this lesson, you will • **understand that *zero* means *none***
Topic 3: Six to Ten **Lesson 3-1: Counting 6 and 7** In this lesson, you will • **use objects to represent and count the quantities of 6 and 7 and understand that the last number said tells the number of objects counted**
Topic 3: Six to Ten **Lesson 3-3: Counting 8 and 9** In this lesson, you will • **use objects to represent and count the quantities of 8 and 9 and understand that the last number counted said tells the number of objects counted**
Topic 3: Six to Ten **Lesson 3-5: Counting 10** In this lesson, you will • **use objects to represent and count the quantity 10 and understand that the last number counted tells the number of objects counted**

Topic 3: Six to Ten **Lesson 3-7: Problem Solving: Look for a Pattern** In this lesson, you will • **solve problems by identifying the growing patterns and predicting what comes next**
Topic 4: Comparing and Ordering Numbers 0 to 10 **Lesson 4-8: Ordering Numbers Through 10** In this lesson, you will • **order numbers from 0 through 10 in sequence**
Topic 4: Comparing and Ordering Numbers 0 to 10 **Lesson 4-9: Ordering Numbers on a Number Line** In this lesson, you will • **use a number line to count numbers 0 to 10 in order**
Topic 5: Numbers to 20 **Lesson 5.5: How Many?** In this lesson, you will • **recognize that the number does not change when the objects are arranged or counted in another order**

Name ____________________________________

Teacher says: *Count the items in each box and write the number on the line that tells how many.*



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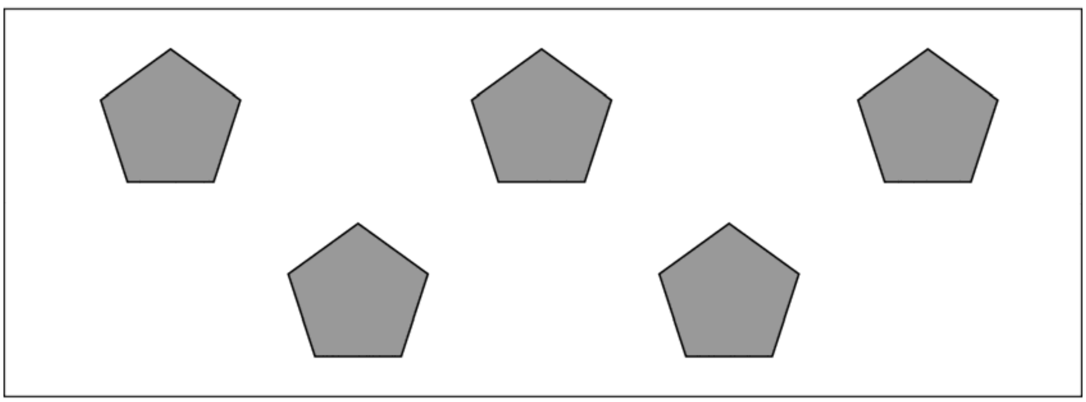

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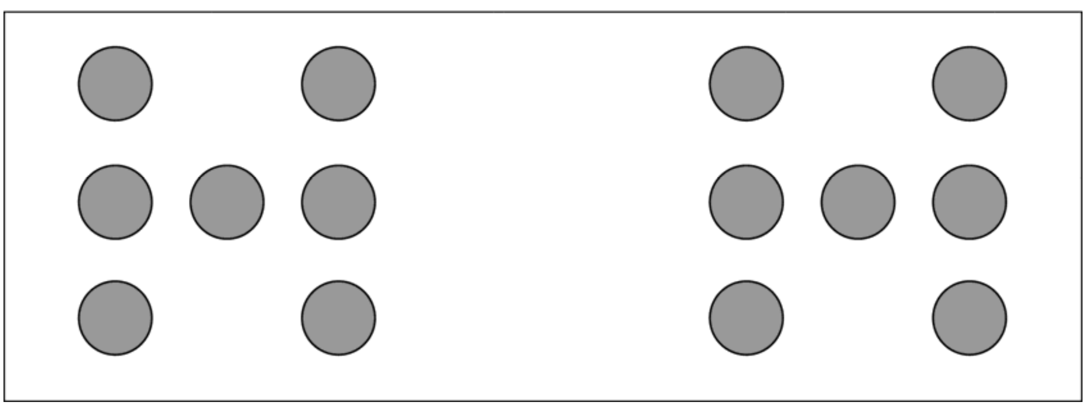

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Name ___________________________________

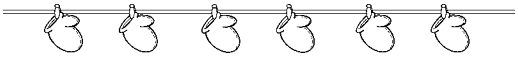
Teacher says:

Look at the number and count out (or draw or use stickers or stamps) *to show the number you see*.

13

Name ______________________________

1



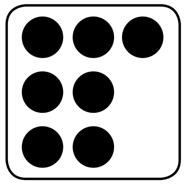
Ⓐ 8

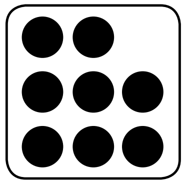
Ⓑ 7

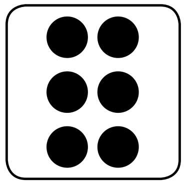
Ⓒ 6

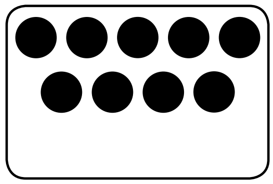
Ⓓ 5

2

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

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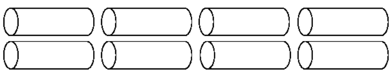


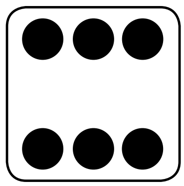
Ⓐ 10

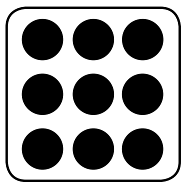
Ⓑ 9

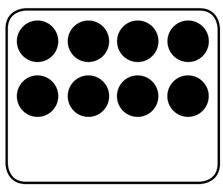
Ⓒ 8

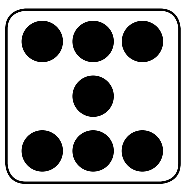
Ⓓ 7

4

Ⓐ 

Ⓑ 

Ⓒ 

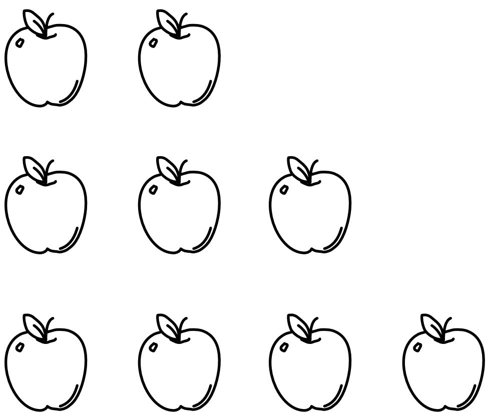
Ⓓ 

Multiple-Choice Directions Have children mark the best answer. **1** How many mittens are hanging on the line? **2** Which shows the number 9? **3** How many pegs are there? **4** Which shows the number 8?

Name ______________________________

5

6



Constructed-Response Directions Have children: 5 write the number eight and draw eight counters; 6 draw one more row of apples to show what comes next in the pattern.