Grade K Overview

Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

Operations and Algebraic Thinking

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

Number and Operations in Base Ten

- Work with numbers 11–19 to gain foundations for place value.

Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

Geometry

- Identify and describe shapes.
- Analyze, compare, create, and compare shapes

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CCSS Where to Focus Kindergarten 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 KINDERGARTEN

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

K.CC.A	■	Know number names and the count sequence.
K.CC.B	■	Count to tell the number of objects.
K.CC.C	■	Compare numbers.
K.OA.A	■	Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
K.NBT.A	■	Work with numbers 11–19 to gain foundations for place value.
K.MD.A	○	Describe and compare measureable attributes.
K.MD.B	□	Classify objects and count the number of objects in categories.
K.G.A	○	Identify and describe shapes.
K.G.B	○	Analyze, compare, create, and compose shapes.

REQUIRED FLUENCIES FOR KINDERGARTEN

K.OA.A.5	Add/subtract within 5

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

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K.CC.A Know number names and the count sequence.

K.CC.1 Count to 100 by ones and by tens.

Essential Skills and Concepts:
- ☐ Counting by ones
- ☐ Counting by tens
- ☐ Counting sequence/order

Question Stems and Prompts:
- ✓ Count forward beginning at 1.
- ✓ What number comes next? How do you know?
- ✓ Count by ones.
- ✓ Count by tens.

Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
• net	
• order	ordenar, orden
• counting	contar
Tier 3	
• ones	
• tens	

Standards Connections
K.CC.1 → K.CC.2, K.CC.4a

Counting and Cardinality Progression Information:
Students usually know or can learn to say the counting words up to a given number before they can use these numbers to count objects or to tell the number of objects. Students become fluent in saying the count sequence so that they have enough attention to focus on the pairings involved in counting objects.

K, Counting and Cardinality; K – 5 Operations and Algebraic Thinking (2011, May 29), http://ime.math.arizona.edu/progressions/

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K.CC.A Know number names and the count sequence.

K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Essential Skills and Concepts:

- ☐ Counting by one
- ☐ Counting on
- ☐ Counting sequence/order

Question Stems and Prompts:

- ✓ Count forward beginning at 7.
- ✓ Begin counting with 12 and stop at 31.
- ✓ Beginning with 24, count as high as you can.
- ✓ What number comes next? How do you know?

Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
• net	
• order	ordenar, orden
• counting	contar

Tier 3

- count on/count forward
- ones
- tens

Standards Connections

K.CC.2 → K.CC.4c

Counting and Cardinality Progression Information:

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 pointing to objects or moving them) that keeps each word said in time paired to one and only one object located in space. Counting objects arranged in a line is easiest; with more practice, students learn to count objects in more difficult arrangements, such as rectangular arrays (they need to ensure they reach every row or column and do not repeat rows or columns); circles (they need to stop just before the object they started with); and scattered configurations (they need to make a single path through all of the objects).K.CC.5 Later, students can count out a given number from 1–20, count out that many objects. of objects,K.CC.5 which is more difficult than just counting that many objects, because counting must be fluent enough for the student to have enough attention to remember the number of objects that is being counted out.

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- count on/count forward
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K.CC.A Know number names and the count sequence.

K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Standard Explanation
Students begin a rote forward counting sequence from a number other than 1. Thus, given the number 4, the student would count, "4, 5, 6, 7 …" This objective does not require recognition of numerals. It is focused on the rote number sequence 0-100.

Teaching Strategies:
- Counting circles
- Number lines
- Count the number of chairs of the students who are absent.
- Count the number of stairs, shoes, etc.
- Counting groups of ten such as "fingers in the classroom" (ten fingers per student). (MP.6, MP. 7, MP. 8)
- Reinforce counting throughout the day

Examples of counting sequences:
- The ones (1-10)
- The teens (10, 11, 12, 13, 14, 15, 16, 17, 18, 19)
- Numbers that "cross the decade" (15, 16, 17,18, 19, 20, 21, 22, 23, 24, or similarly 26-34, 35-44 etc.).
- *__Note:__* Students often have trouble with counting forward sequences that cross from one family into the next family, such as when crossing the decade. Focusing on short counting sequences can be helpful.

K.CC.2 Illustrative Tasks:
- Pick a Number, https://www.illustrativemathematics.org/content-standards/K/CC/A/2/tasks/927
- Number After Bingo, https://www.illustrativemathematics.org/content-standards/K/CC/A/2/tasks/373

Number AFTER Bingo 1-15

4	10	8	13	8
9	14	2	12	11
15	3	10	5	11
6	13	16	7	9
13	7	11	12	12

Begin whole group by discussing what "number after" means. Next have the students identify and point out on a large number line the number after various numbers selected by the teacher. Initially keep these numbers in the range of 1-15. After the group seems to have an understanding of what "number after" means and how to locate them on the number line, have students play Number After bingo on the 5x5 bingo board in pairs. Students will take turns drawing a number card, stating the number after and placing his/her counter on that number on the game board. The first student with 3 counters in a row on the grid is the winner. As students progress the practice range should be increased by changing the numbers on the grid and the corresponding numbers on the cards.

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K.CC.1 Count to 100 by ones and by tens.

Standard Explanation
Students count by starting at one and counting to 100. When students count by tens they are only expected to master counting on the decade (0, 10, 20, 30, 40 …). This objective does not require recognition of numerals. It is focused on the rote number sequence.

When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s.

Counting should be reinforced throughout the day, not in isolation.
Examples:
- Count the number of chairs of the students who are absent.
- Count the number of stairs, shoes, etc.
- Counting groups of ten such as “fingers in the classroom” (ten fingers per student).

Teaching Strategies:
- Hundreds chart
- Number lines
- Counting/number literature

K.CC.1 Illustrative Task(s):
- Choral Counting, https://www.illustrativemathematics.org/content-standards/K/CC/A/1/tasks/360
- The teacher will need a 100 chart or large number line and a pointer.
  - As a whole group, have students chant the counting sequence starting with one to thirty, using the pointer to follow the number sequence. Over time, increase the range to one to fifty and then one to one hundred. Eventually have a student take over the job of pointing out the numbers in the sequence. Highlight the multiples of ten using a marker or a colored screen and have students chant the counting sequence by 10s. This should be done daily.
- Counting by Tens, https://www.illustrativemathematics.org/content-standards/K/CC/A/1/tasks/754
  - Have students count by ones to 100 clapping in front of their chest for each number.
  - When they count by tens, have them clap over their head.

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K.CC.A Know number names and the count sequence.

K.CC.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).

Essential Skills and Concepts:
- ☐ Writing numbers
- ☐ Number recognition
- ☐ One-to-one correspondence
- ☐ Counting by ones
- ☐ Counting sequence/order

Question Stems and Prompts:
- ✓ Write numbers in order beginning with 0.
- ✓ Count the objects (up to 20). How many?
- ✓ Count objects and write the number.
- ✓ Match the written numeral to the correct number of objects.

Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
• net	
• order	ordenar, orden
• counting	contar
Tier 3	
• numerals	

Counting and Cardinality Progression Information:
Students come to quickly recognize the cardinalities of small groups without having to count the objects; this is called perceptual subitizing . Perceptual subitizing develops into conceptual subitizing —recognizing that a collection of objects is composed of two subcollections and quickly combining their cardinalities to find the cardinality of the collection (e.g., seeing a set as two subsets of cardinality 2 and saying "four"). Use of conceptual subitizing in adding and subtracting small numbers progresses to supporting steps of more advanced methods for adding, subtracting, multiplying, and dividing single-digit numbers (in several OA standards from Grade 1 to 3 that culminate in single-digit fluency).

K, Counting and Cardinality; K – 5 Operations and Algebraic Thinking (2011, May 29), http://ime.math.arizona.edu/progressions/

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K.CC.A.3

Standard Explanation
Students write the numerals 0-20 and use the written numerals 0-20 to represent the amount within a set. For example, if the student has counted 9 objects, then the written numeral "9" is recorded. Students can record the quantity of a set by selecting a number card/tile (numeral recognition) or writing the numeral. Students can also create a set of objects based on the numeral presented. For example, if a student picks up the number card "13", the student then creates a pile of 13 counters. While children may experiment with writing numbers beyond 20, this standard places emphasis on numbers 0-20.
Due to varied development of fine motor and visual development, reversal of numerals is anticipated. While reversals should be pointed out to students and correct formation modeled in instruction, the emphasis of this standard is on the use of numerals to represent quantities rather than the correct handwriting formation of the actual numeral itself.

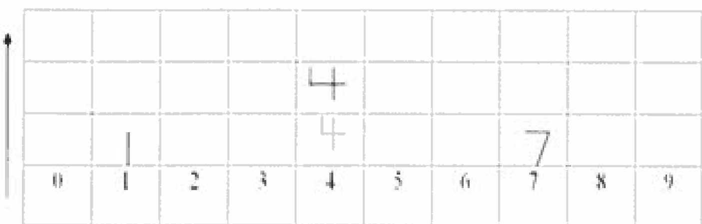
Example: A Learning Sequence for Understanding Numbers

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.

K.CC.3 Illustrative Task:

1 2 3 ...

- Race to the Top, https://www.illustrativemathematics.org/content-standards/K/CC/A/3/tasks/399
  The student rolls a number using the die or spinner and writes that number in the next box of the corresponding column. Students start at the bottom of the page and work to the top. Each time the student rolls/spins a number he/she will write the number on the paper in the next corresponding box. The winning number is the first to make it to the top of the paper. Students can also work in pairs.



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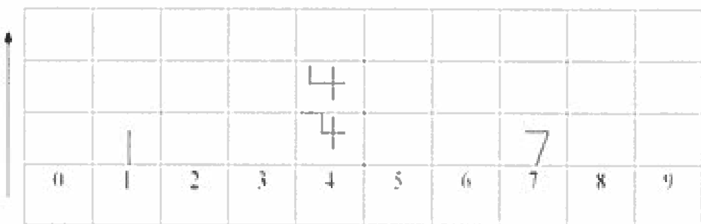

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K.CC.B Count to tell the number of objects.

K.CC.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.

Essential Skills and Concepts:
- ☐ Counting by ones
- ☐ One-to-one correspondence
- ☐ Counting sequence/order
- ☐ Greater discrimination

Question Stems and Prompts:
- ✓ Count objects in a random/scattered configuration, in a line, a rectangular or circular array, in ten frames, and in commonly recognized dot formations.
- ✓ Count the objects (up to 20). Say the number name for each object as it is counted.
- ✓ Count the objects (up to 20). Say the number name for each. How many are there?
- ✓ Count 7 objects. How many objects would you have if I gave you one more?

Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
• groups	grupos
• pairing	emparejamient
• larger	
Tier 3	
• counting	contar

Standards Connections
K.CC.4a → K.CC.4b
K.CC.4b → K.CC.5
K.CC.4c → K.CC.2

Counting and Cardinality Progression Information:
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).

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Kindergarten – CCSS FOR Mathematics

K.CC.B Count to tell the number of objects.

K.CC.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.
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Essential Skills and Concepts:
☐ Counting by ones
☐ One-to-one correspondence
☐ Counting sequence/order
☐ Greater discrimination

Question Stems and Prompts:
✓ Count objects in a random/scattered configuration, in a line, a rectangular or circular array, in ten frames, and in commonly recognized dot formations.
✓ Count the objects (up to 20). Say the number name for each object as it is counted.
✓ Count the objects (up to 20). Say the number name for each. How many are there?
✓ Count 7 objects. How many objects would you have if I gave you one more?

Vocabulary / Spanish Cognates
Tier 2
• number — número
• groups — grupos
• pairing — emparejamient
• larger
Tier 3
• counting — contar

Standards Connections
K.CC.4a → K.CC.4b
K.CC.4b → K.CC.5
K.CC.4c → K.CC.2

Counting and Cardinality Progression Information:
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).

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K.CC.B.4

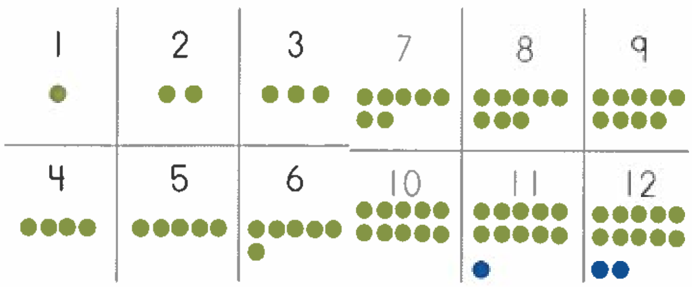
Standard Explanation

In kindergarten students develop an understanding of the relationship between numbers and quantities and connect counting to cardinality. 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. Students count a set of objects and see sets and numerals in relationship to one another. These connections are higher-level skills that require students to analyze, reason about, and explain relationships between numbers and sets of objects.

Students implement correct counting procedures by pointing to one object at a time (one-to-one correspondence), using one counting word for every object (synchrony/one-to-one tagging), while keeping track of objects that have and have not been counted. This is the foundation of counting.

K.CC.4 Illustrative Task(s):

- Counting Mat, https://www.illustrativemathematics.org/content-standards/K/CC/B/4/tasks/1209
- The teacher gives students the counting mat and many small objects to count with. Some students will automatically read the numbers and assemble the correct number of object then match them to the dots on the counting mat to verify they counted correctly. Other students who need more scaffolding will match each object to a dot. Students who do it this way should be guided to count the objects once they have assembled them on the dots. Once a student is done with each number they can move on to the next number. The teacher should do a quick check of a student's work before the student begins working on the larger numbers.



Kindergarten – CCSS FOR Mathematics

K.CC.B.4

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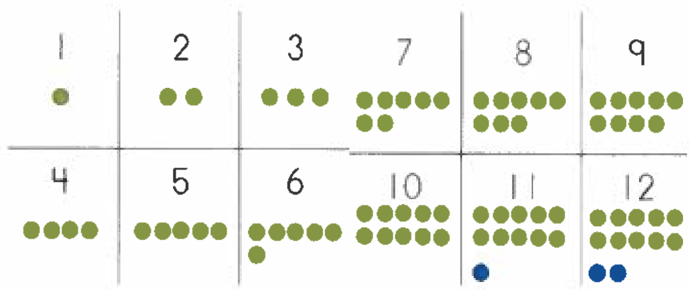

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K.CC.B Count to tell the number of objects.

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 1-20, count out that many objects.

Essential Skills and Concepts:
- ☐ Counting by ones
- ☐ One-to-one correspondence
- ☐ Number recognition

Question Stems and Prompts:
- ✓ Count objects in a random/scattered configuration, in a line, a rectangular or circular array, in ten frames, and in commonly recognized dot formations.
- ✓ Count the objects (up to 20). How many are there?
- ✓ State a number 0-20. Have the student count that many objects.
- ✓ Show a number 0-20. Have the student count that many objects.

Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
Tier 3	
• counting	contar

Standards Connections
K.CC.5 → K.CC.6

K.CC.5 Examples:

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Kindergarten – CCSS FOR Mathematics

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Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
Tier 3	
• counting	contar

Standards Connections
K.CC.5 → K.CC.6

K.CC.5 Examples:

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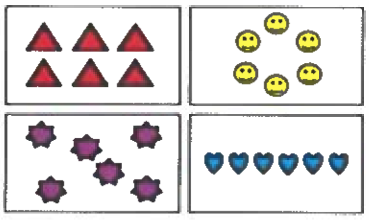
K.CC.B.5

Standard Explanation
In order to answer "how many?" students need to keep track of objects when counting. Keeping track is a method of counting that is used to count each item once and only once when determining how many. After numerous experiences with counting objects, along with the developmental understanding that a group of objects counted multiple times will remain the same amount, students recognize the need for keeping track in order to accurately determine "how many". Depending on the amount of objects to be counted, and the students' confidence with counting a set of objects, students may move the objects as they count each, point to each object as counted, look without touching when counting, or use a combination of these strategies. It is important that children develop a strategy that makes sense to them based on the realization that keeping track is important in order to get an accurate count, as opposed to following a rule, such as "Line them all up before you count", in order to get the right answer.
As children learn to count accurately, they may count a set correctly one time, but not another. Other times they may be able to keep track up to a certain amount, but then lose track from then on. Some arrangements, such as a line or rectangular array, are easier for them to get the correct answer but may limit their flexibility with developing meaningful tracking strategies, so providing multiple arrangements help children learn how to keep track. Since scattered arrangements are the most challenging for students, this standard specifies that students only count up to 10 objects in a scattered arrangement and count up to 20 objects in a line, rectangular array, or circle.

Teaching Strategies:
- Dot images
- Five/Ten Frames
- Number talks
- Subitizing



K.CC.5 Illustrative Task:
- Finding Equal Groups, https://www.illustrativemathematics.org/content-standards/K/CC/B/5/tasks/1420
- The teacher will give students a timer, and the students will race against the clock to sort the groups of objects into three separate groups (grouped by quantity) by the time the timer is finished. This can be played individually or in pairs.

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Kindergarten – CCSS FOR Mathematics

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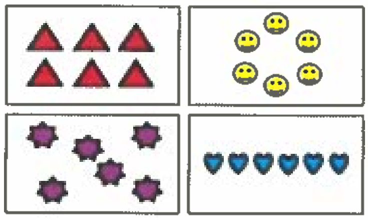

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K.CC.C Compare numbers.

K.CC.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]

[1] Include groups with up to ten objects.

Essential Skills and Concepts:
- ☐ Counting by ones
- ☐ Quantity discrimination
- ☐ Greater than/less than or equal groups

Question Stems and Prompts:
- ✓ Count the objects in each group (2 groups). How many are there? Compare the groups. Is it greater than, less than or equal to the other group?
- ✓ Make a group of 5 and a group of 7. Compare the groups. Is the first group greater than, less than or equal to the second group?
- ✓ Make a group of objects that is greater than the given group.
- ✓ Make a group of objects that is less than the given group.
- ✓ Make a group of objects that is equal to the given group.

Vocabulary	**Spanish Cognates**
Tier 2	
• number	número
• groups	grupos
• matching	
• construct/make	construir
• compare	*comparar*
Tier 3	
• greater than	
• less than	
• equal to	igual a

Standards Connections
K.CC.6 → K.CC.7, K.MD.3

K.CC.6 Examples:

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Kindergarten – CCSS FOR Mathematics

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Vocabulary / Spanish Cognates
Tier 2
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• groups — grupos
• matching
• construct/make — construir
• compare — comparar
Tier 3
• greater than
• less than
• equal to — igual a

Standards Connections
K.CC.6 → K.CC.7, K.MD.3

K.CC.6 Examples:

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K.CC.C.6

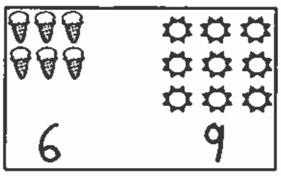
Standard Explanation

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 strategies to determine whether one group is greater than, less than, or equal to the number of objects in another group. Students use their counting ability to compare sets of objects (0-10). They may use matching strategies (Student1), counting strategies (Student 2) or equal shares (Student 3) to determine whether one group is greater than, less than, or equal to the number of objects in another group.

Example: (MP.1, MP.2)		
Student 1 I lined up one square to one triangle. Since there is one extra triangle, there are more triangles than squares.	Student 2 I counted the squares and I got 8. Then I counted the triangles and got 9. Since 9 is bigger than 8, there are more triangles than squares.	Student 3 I put them in a pile. I then took away objects. Every time I took a square. I also took a triangle. When I had taken almost all of the shapes away, there was still a triangle left. That means that there are more triangles than squares.

K.CC.6 Illustrative Task:

- Greater? Less? How do you know?, https://www.illustrativemathematics.org/content-standards/K/CC/C/6/tasks/1210
- The teacher will show the class two groups of objects or drawings of objects.
- The class will chorally count the two groups and record the number below the group.
- The teacher will then ask the class to chorally say which number is greater and which number is less.



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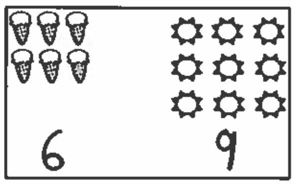

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K.CC.C Compare numbers.

K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.

Essential Skills and Concepts:
- ☐ Number recognition
- ☐ Quantity discrimination
- ☐ Greater than/less than/ equal to

Question Stems and Prompts:
- ✓ Show two numbers between 1 and 10. Are the numbers equal? Which number is greater than the other? Which number is less than the other?

Vocabulary	**Spanish Cognates**
Tier 2	
• compare	comparar
• numbers	numeros
• groups	grupos
Tier 3	
• greater than	
• less than	
• equal to	igual a
• numerals	
• number line	linea de número

Kindergarten – CCSS FOR Mathematics

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K.CC.C Compare numbers.

K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.

Standard Explanation
An important level of understanding is reached when students can compare two numbers from 1 to10 represented as written numerals, without counting. Students demonstrate their understanding of numbers when they can justify their answer (MP.3).

Students apply their understanding of numerals 1-10 to compare one numeral from another. Thus, looking at the numerals 8 and 10, a student is able to recognize that the numeral 10 represents a larger amount than the numeral 8. Students need ample experiences with actual sets of objects (K.CC.3 and K.CC.6) before completing this standard with only numerals.

Example:

- Students might justify an answer (e.g., 7 is greater than 5) by demonstrating a one to-one match, counting again, or other similar approaches that makes sense to explain or verify the answer. Teachers can ask probing questions, such as "How do you know?" to elicit student thinking and reasoning (MP.3, MP.8)

K.CC.7 Illustrative Task(s):

- Guess the Marbles in the Bag, https://www.illustrativemathematics.org/content-standards/K/CC/C/7/tasks/697

Materials: Paper bags and marbles (or some other counter, as long as it is relatively noisy).
(Whole-class version) The teacher secretly places between 1 and 10 marbles in a paper bag, then shows the bag to the class. After shaking it enough times for students to hear the marbles inside, and 4 or 5 students guess how many marbles are in the bag. The teacher writes the guesses on the board. Afterwards the contents of the bag are revealed and counted out. The teacher writes the number representing the total on the board, and the students then help sort their guesses into less than, greater than, or equal to the number of marbles in the bag. The game repeats until everyone has had a chance to guess at least once.

(Small group version) This works like the class version but one student in a group fill the bag with marbles themselves and the rest of the group tries to guess the number. With this variation it is practical to allow the students to both hear and feel the marbles inside the bag before they make their guess.

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

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

Essential Skills and Concepts:
- ☐ Addition
- ☐ Subtraction
- ☐ Counting on
- ☐ Symbol recognition (i.e. + - =)

Question Stems and Prompts:
- ✓ Using objects. You have two apples. You have two oranges. How much fruit do you have altogether?
- ✓ Using images. There are 5 apples on a tree. Three apples fall off. How many apples are left on the tree?
- ✓ Acting out. There are 2 girls at the yellow table. One more girl sits at the yellow table. How many girls are at the yellow table altogether?
- ✓ Written expression. ●+● ●●=●
- ✓ Written equation. 2+3 = __; 5-1= __

Vocabulary	**Spanish Cognates**
Tier 2	
• altogether	
• left	
• more	
• take away	
Tier 3	
• addition	adición
• subtraction	
• counting on	
• addition sign	
• subtraction sign	
• equal sign	
• equation	la ecuación

Standards Connections
K.OA.1 → K.OA.2

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Kindergarten – CCSS FOR Mathematics

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Vocabulary / Spanish Cognates
Tier 2
• altogether
• left
• more
• take away
Tier 3
• addition — adición
• subtraction
• counting on
• addition sign
• subtraction sign
• equal sign
• equation — la ecuación

Standards Connections
K.OA.1 → K.OA.2

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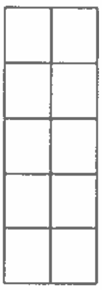
K.OA.A.1

Standard Explanation
Students demonstrate the understanding of how objects can be joined (addition) and separated (subtraction) by representing addition and subtraction situations in various ways. This objective is focused on understanding the concept of addition and subtraction, rather than reading and solving addition and subtraction number sentences (equations). Common Core State Standards for Mathematics states, "Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required." Please note that it is not until First Grade when "Understand the meaning of the equal sign" is an expectation. Therefore, before introducing symbols (+, -, =) and equations, kindergarteners require numerous experiences using joining (addition) and separating (subtraction) vocabulary in order to attach meaning to the various symbols. For example, when explaining a solution, kindergartens may state, "Three and two is the same amount as 5." While the meaning of the equal sign is not introduced as a standard until First Grade, if equations are going to be modeled and used in Kindergarten, students must connect the symbol (=) with its meaning (is the same amount/quantity as).

Teaching Strategies:
- Number talks
- Rekenreks
- Make Five *It Makes Sense* p. 92
- Collect Ten *It Makes Sense* p.100

K.OA.1 Illustrative Task(s):
- Ten Frame Addition, https://www.illustrativemathematics.org/content-standards/K/OA/A/1/tasks/1406
- Dice Addition 2,

https://www.illustrativemathematics.org/content-standards/K/OA/A/1/tasks/1405



Kindergarten – CCSS FOR Mathematics

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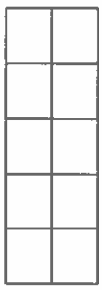
- Number talks
- Rekenreks
- Make Five *It Makes Sense* p. 92
- Collect Ten *It Makes Sense* p.100

K.OA.1 Illustrative Task(s):
- Ten Frame Addition, https://www.illustrativemathematics.org/content-standards/K/OA/A/1/tasks/1406
- Dice Addition 2,

https://www.illustrativemathematics.org/content-standards/K/OA/A/1/tasks/1405



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

K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Essential Skills and Concepts:
- ☐ Adding within 10
- ☐ Subtracting within 10

Question Stems and Prompts:
- ✓ Using objects. You have four pencils. Your number gives you four more pencils. How many pencils do you have altogether?
- ✓ Using drawings. You have 3 circles. You draw 4 more circles. How many circles have you drawn altogether?
- ✓ Using drawings. You have 7 lines. Then you erase 5 lines. How many lines are left?

Vocabulary	**Spanish Cognates**
Tier 2	
• numbers	número
• altogether	
• left	
• more	
• take away	
Tier 3	
• addition	adición
• subtraction	
• counting on	
• addition sign	
• subtraction sign	
• equal sign	
• equation	la ecuación

Standards Connections
K.OA.2 → K.OA.3

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Kindergarten – CCSS FOR Mathematics

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• addition sign	
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• equal sign	
• equation	la ecuación

Standards Connections
K.OA.2 → K.OA.3

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K.OA.A.2

Standard Explanation

Word problems with real-life applications provide students with a context to develop their understanding of addition and subtraction. In kindergarten, students learn addition is putting together and adding to, and subtraction is taking apart and taking from. Kindergarteners use objects or math drawings (with simple shapes like circles) to model word problems.

Kindergarten students solve four types of problems within 10: Result Unknown/Add To; Result Unknown/Take From; Total Unknown/Put Together-Take Apart; and Addend Unknown/Put Together-Take Apart. Kindergarteners use counting to solve the four problem types by acting out the situation and/or with objects, fingers, and drawings. The main addition and subtraction situations in kindergarten are the dark shaded problem types in the following table. Students add and subtract within 10 to solve these problems types.

TABLE 1. Common addition and subtraction situations.

	Result Unknown	Change Unknown	Start Unknown
Add to	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? 2 + 3 = ?	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? 2 + ? = 5	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? ? + 3 = 5
Take from	Five apples were on the table. I ate two apples. How many apples are on the table now? 5 – 2 = ?	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 – ? = 3	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? ? – 2 = 3
	Total Unknown	Addend Unknown	Both Addends Unknown127
Put Together/ Take Apart	Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?	Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5, 5 – 3 = ?	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = 0 + 5, 5 = 5 + 0 5 = 1 + 4, 5 = 4 + 1 5 = 2 + 3, 5 = 3 + 2

K.OA.2 Illustrative Task(s):

- What's Missing? https://www.illustrativemathematics.org/content-standards/K/OA/A/2/tasks/70
- Show the student 6 counters (small, flat objects). Ask the student to close his/her eyes. Hide some of the counters under a sheet of heavy paper. When the student opens his/her eyes, s/he determines how many were hidden based on the number of counters still showing.

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Kindergarten – CCSS FOR Mathematics

K.OA.A.2

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

K.OA.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 equations (e.g., 5 = 2 + 3 and 5 = 4 + 1).

Essential Skills and Concepts:
- ☐ Decomposing numbers
- ☐ Recording compositions
- ☐ Variety of number pairs

Question Stems and Prompts:
- ✓ Using objects. There are seven blocks. Using these blocks make two groups. How many is in the first group? How many is in the second group? Record that. Now can you make two different groups?
- ✓ Using drawings. Using two different colored crayons (i.e. green and yellow), draw 9 circles. How many green circles did you make? How many yellow? Record that. Now can you make two different groups?

Vocabulary	**Spanish Cognates**
Tier 2	
• numbers	número
• pairs	pares
• groups	grupos
• recording	
• different	diferente
Tier 3	
• decompose	descomponer
• equation	la ecuación

Standards Connections
K.OA.3 → K.OA.4, K.OA.5, K.NBT.1

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Kindergarten – CCSS FOR Mathematics

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Standards Connections
K.OA.3 → K.OA.4, K.OA.5, K.NBT.1

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K.OA.A.3

Standard Explanation

Students experience a variety of addition situations that involve putting together and adding to and a variety of subtraction situations that involve taking apart and taking from. Students use objects (such as two-color counters, clothespins on hangers, connecting cubes, five-frames and stickers), fingers, mental images, drawing, sounds, acting out situations, and verbal explanations to represent these operations (MP. 1, MP.2, MP.4, MP.5)

Students develop an understanding of part -whole relationships as they recognize that a set of objects (5) can be broken into smaller sub-sets(3 and 2) and still remain the total amount (5). In addition, this objective asks students to realize that a set of objects (5) can be broken in multiple ways (3 and 2; 4 and 1). Thus, when breaking apart a set (decompose), students use the understanding that a smaller set of objects exists within that larger set (inclusion).

In Kindergarten, students need ample experiences breaking apart numbers and using the vocabulary "and" & "same amount as" before symbols (+, =) and equations (5= 3 + 2) are introduced. If equations are used, a mathematical representation (picture, objects) needs to be present as well.

Teaching Strategies:

- Number bonds/Tape diagrams with counters
- Rekenreks
- Shake and Spill
- Number families

K.OA.3 Illustrative Tasks:

- Shake and Spill, https://www.illustrativemathematics.org/content-standards/K/OA/A/3/tasks/165
- For each student: you'll need 5 two-color counters (e.g., red on one side and yellow on the other) & a cup (optional).
- The students put the counters in the cup, shake it, and spill them onto the table. Alternatively, they can use their hands. The students determine how many of each color is showing and record the sum using drawings or equations. The students should "shake and spill" several times to show different pairs of numbers that sum to 5.
- My Book of Five,

https://www.illustrativemathematics.org/content-standards/K/OA/A/3/tasks/1408

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Kindergarten – CCSS FOR Mathematics

K.OA.A.3

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

K.OA.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.

Essential Skills and Concepts:
- ☐ Addition to 10
- ☐ Number pairs
- ☐ Recording compositions

Question Stems and Prompts:
- ✓ Using objects. Count 4 objects. How many more objects are needed to make 10? Record the answer.
- ✓ Using objects. Place 6 objects onto an empty ten frame. How many more objects are needed to make 10? Record the answer.
- ✓ Using drawings. Draw 2 circles. How many more circles are needed to make 10? Record the answer.
- ✓ Using drawings. Color in 7 squares on an empty ten frame. How many more are needed to make 10? Record the answer.

Vocabulary	**Spanish Cognates**
Tier 2	
• numbers	número
• pairs	pares
• groups	grupos
• recording	
• different	diferente
• more	
Tier 3	
• compose	componer
• decompose	descomponer
• equation	la ecuación

Standards Connections
K.OA.4 ← K.OA.3

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Kindergarten – CCSS FOR Mathematics

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Standards Connections
K.OA.4 ← K.OA.3

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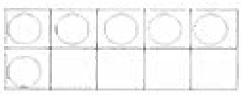
Standard Explanation
Students build upon the understanding that a number (less than or equal to 10) can be decomposed into parts (K.OA.3) to find a missing part of 10. Through numerous concrete experiences, kindergarteners model the various sub-parts of ten and find the missing part of 10.

Example:
When working with 2-color beans, a student determines that 4 more beans are needed to make a total of 10. In addition, Kindergarteners use various materials to solve tasks that involve decomposing and composing 10.
Example: "A full case of juice boxes has 10 boxes. There are only 6 boxes in this case. How many juice boxes are missing?"

Student A:
Using a Ten-Frame
"I used a ten frame for the case. Then, I put on 6 counters for juice still in the case. There's no juice in these 4 spaces. So, 4 are missing."



Student B:
Think Addition
"I counted out 10 counters because I knew there needed to be ten. I pushed these 6 over here because they were in the container. These are left over. So there's 4 missing."

Student C:
Fluently add/subtract
"I know that it's 4 because 6 and 4 is the same amount as 10."

Teaching Strategies:
- Tape diagram
- Shake and Spill
- <u>Collect Ten</u> *It Makes Sense!* p.100
- Ten frames

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Kindergarten – CCSS FOR Mathematics

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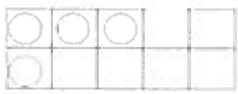

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K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

K.OA.5 Fluently add and subtract within 5.

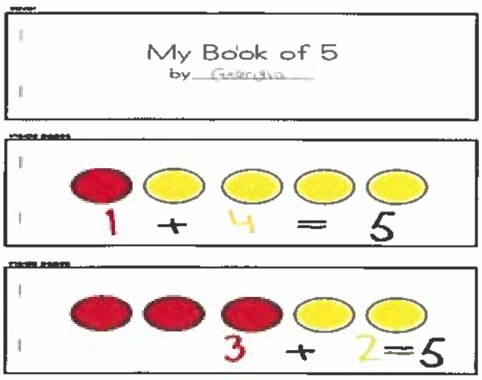
Essential Skills and Concepts:
- ☐ Fluently add within 5
- ☐ Fluently subtract within 5
- ☐ Symbol recognition (i.e. + - =)

Question Stems and Prompts:
- ✓ Solve a set of given equations within a given amount of time.

Vocabulary	**Spanish Cognates**
Tier 2	
• numbers	número
• altogether	
• left	
• more	
• take away	
Tier 3	
• addition	adición
• subtraction	
• counting on	
• addition sign	
• subtraction sign	
• equal sign	
• equation	la acuación

Standards Connections
K.OA.5 ← K.OA.3

K.OA.5 Illustrative Tasks:
- My Book of Five, https://www.illustrativemathematics.org/content-standards/K/OA/A/5/tasks/1408
- Many Ways to Do Addition1, https://www.illustrativemathematics.org/content-standards/K/OA/A/5/tasks/1409



Kindergarten – CCSS FOR Mathematics

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

K.OA.5 Fluently add and subtract within 5.

Essential Skills and Concepts:
- ☐ Fluently add within 5
- ☐ Fluently subtract within 5
- ☐ Symbol recognition (i.e. + - =)

Question Stems and Prompts:
- ✓ Solve a set of given equations within a given amount of time.

Vocabulary	**Spanish Cognates**
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Standards Connections
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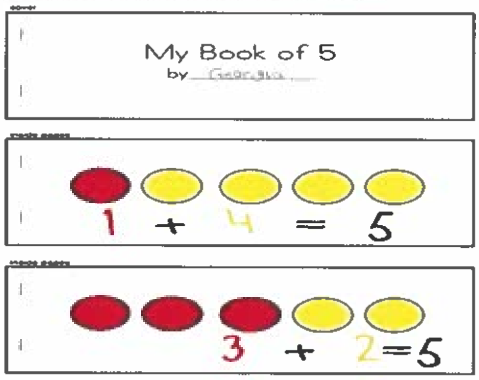

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K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

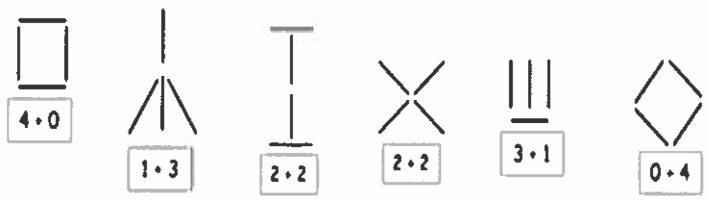
K.OA.5 Fluently add and subtract within 5.

Standard Explanation

Students are fluent when they display accuracy (correct answer), efficiency (a reasonable amount of steps without resorting to counting), and flexibility (using strategies such as the distributive property).

Students develop fluency by understanding and internalizing the relationships that exist between and among numbers. Oftentimes, when children think of each "fact" as an individual item that does not relate to any other "fact", they are attempting to memorize separate bits of information that can be easily forgotten. Instead, in order to fluently add and subtract, children must first be able to see sub-parts within a number (inclusion, K.CC.4.c).

Once they have reached this milestone, children need repeated experiences with many different types of concrete materials (such as cubes, chips, and buttons) over an extended amount of time in order to recognize that there are only particular sub-parts for each number. Therefore, children will realize that if 3 and 2 is a combination of 5, then 3 and 2cannot be a combination of 6.For example, after making various arrangements with toothpicks, students learn that only a certain number of sub-parts exist within the number 4:



Then, after numerous opportunities to explore, represent and discuss "4", a student becomes able to fluently answer problems such as, "One bird was on the tree. Three more birds came. How many are on the tree now?"; and "There was one bird on the tree. Some more came. There are now 4 birds on the tree. How many birds came?"

Traditional flash cards or timed tests have not been proven as effective instructional strategies for developing fluency.** Rather, numerous experiences with breaking apart actual sets of objects and developing relationships between numbers help children internalize parts of number and develop efficient strategies for fact retrieval.

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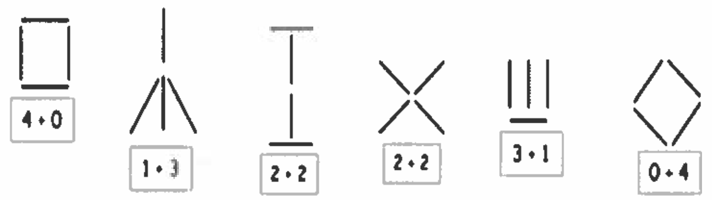

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K.NBT.A Work with numbers 11-19 to gain foundation for place value.

K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Essential Skills and Concepts:
- ☐ Composing larger numbers from smaller numbers
- ☐ Decomposing larger numbers into smaller numbers
- ☐ Ten ones and some more ones
- ☐ Recording compositions and decompositions

Question Stems and Prompts:
- ✓ Using objects. Compose numbers. If you have ten ones and then you add 4 more ones, how many will you have? Record. (10 + 4 = 14)
- ✓ Using drawings. Compose numbers. If you have ten circles and you want to have 15 circles, how many more circles will you need to draw? Record. (10 + __ = 15)
- ✓ Using objects. Decompose numbers. If you have 19 objects, and you place ten in the first group, how many objects will be in the second group? Record. (19= 10 + __)
- ✓ Using drawings. Decompose numbers. If you have 11 lines, and you place ten in the first group, how many objects will be in the second group? Record. (11= 10+__).

Vocabulary	**Spanish Cognates**
Tier 2	
• numbers	número
• altogether	
• left	
• more	
• take away	
• recording	
Tier 3	
• compose	componer
• ten ones	
• addition	adición
• subtraction	

Standards Connections
K.NBT.1 ← K.OA.3

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Kindergarten – CCSS FOR Mathematics

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- ✓ Using drawings. Compose numbers. If you have ten circles and you want to have 15 circles, how many more circles will you need to draw? Record. (10 + __ = 15)
- ✓ Using objects. Decompose numbers. If you have 19 objects, and you place ten in the first group, how many objects will be in the second group? Record. (19= 10 + _)
- ✓ Using drawings. Decompose numbers. If you have 11 lines, and you place ten in the first group, how many objects will be in the second group? Record. (11= 10+__).

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Standards Connections
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K.NBT.A.1

Standard Explanation

Students explore numbers 11-19 using representations, such as manipulatives or drawings. Keeping each count as a single unit, kindergarteners use 10 objects to represent "10" rather than creating a unit called a ten (unitizing) as indicated in the First Grade CCSS standard 1.NBT.1a:10 can be thought of as a bundle of ten ones — called a "ten." Example:

Teacher: "I have some chips here. Do you think they will fit on our ten frame? Why? Why Not?"
Students: Share thoughts with one another.
Teacher: "Use your ten frame to investigate."
Students: "Look. There's too many to fit on the ten frame. Only ten chips will fit on it."
Teacher: "So you have some leftovers?"
Students: "Yes. I'll put them over here next to the ten frame."
Teacher: "So, how many do you have in all?"
Student A: "One, two, three, four, five... ten, eleven, twelve, thirteen, fourteen. I have fourteen. Ten fit on and four didn't."
Student B: Pointing to the ten frame, "See them-that's 10... 11, 12, 13, 14. There's fourteen."
Teacher: Use your recording sheet (or number sentence cards) to show what you found out.

Student Recording Sheets Examples:

Teaching Strategies:

- Tape diagram
- Ten frames

K.NBT.1 Illustrative Task:

- What Makes a Teen Number?, https://www.illustrativemathematics.org/content-standards/K/NBT/A/1/tasks/1404

13 = 10 + 3

Kindergarten – CCSS FOR Mathematics

K.NBT.A.1

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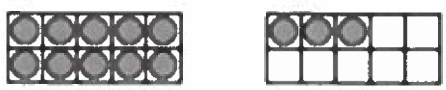

13 = 10 + 3

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K.MD.A Describe and compare measureable attributes.

K.MD.1 Describe measureable attributes of objects, such as length or weight. Describe several measureable attributes of a single object.

Essential Skills and Concepts:
- ☐ Describe objects in terms of length, height, or weight
- ☐ Describe several features of an object
- ☐ Understand measurable and non-measurable attributes

Question Stems and Prompts:
- ✓ Describe a pencil. Is it long or short? Is it heavy or light?
- ✓ Describe a student. Are they tall or short? Are they heavy or light?

Vocabulary Tier 2	Spanish Cognates
• describe	describir
• long	
• tall	
• short	
• heavy	
• light	
• attributes	atribuir

Standards Connections
K.MD.1 → K.MD.2

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Kindergarten – CCSS FOR Mathematics

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K.MD.1 → K.MD.2

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Kindergarten – CCSS FOR Mathematics

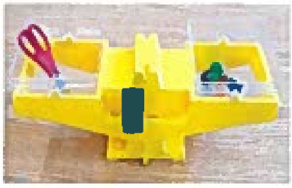
K.MD.A.1

Standard Explanation
Students describe measurable attributes of objects, such as length, weight, size, and color. For example, a student may describe a shoe with one attribute, "Look! My shoe is blue, too!", or more than one attribute, "This shoe is heavy! It's also really long."

Students often initially hold undifferentiated views of measurable attributes, saying that one object is "bigger" than another whether it is longer, or greater in area, or greater in volume, and so forth. For example, two students might both claim their block building is "the biggest." Conversations about how they are comparing-one building may be taller (greater in length) and another may have a larger base (greater in area)-help students learn to discriminate and name these measureable attributes. As they discuss these situations and compare objects using different attributes, they learn to distinguish, label, and describe several measureable attributes of a single object. Thus, teachers listen for and extend conversations about things that are "big", or "small," as well as "long," "tall," or "high," and name, discuss, and demonstrate with gestures the attribute being discussed.

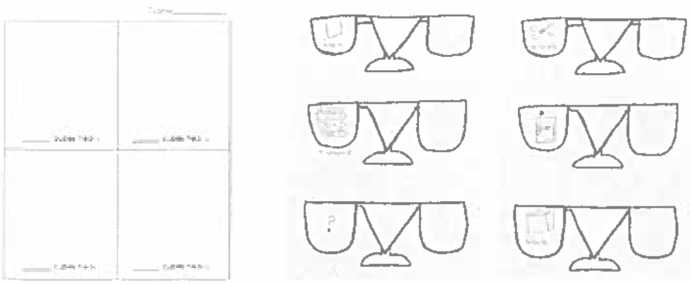
K.MD.1 Illustrative Task:

- How Heavy?, https://www.illustrativemathematics.org/content-standards/K/MD/A/1/tasks/798



You will need various items to measure and weigh, a balance scale, a large set of cubes such as unifix or snap cubes, and a recording sheet with 4 sections. In each section would be the words: _______ cubes heavy, with enough space for a small drawing.

The students work in pairs. They choose an item to measure. Using the balance scale, they put the item on one side of the balance scale. They then put enough cubes on the other side of the scale to make it balance. They remove the cubes, count them, and record the number. They draw a picture of the item they measured. They continue same routine 3 more times with different items.



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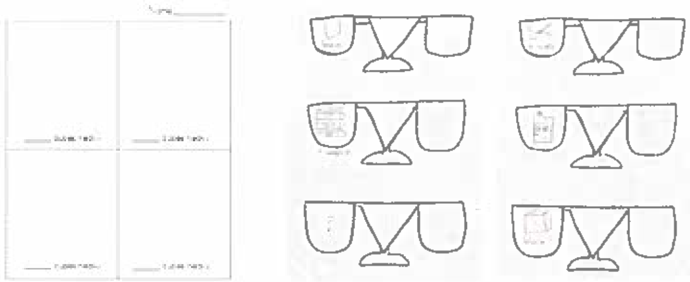

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K.MD.A Describe and compare measurable attributes.

K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Essential Skills and Concepts:
- ☐ Compare length, height, and weight
- ☐ Identify an attribute that an object has more of/less of
- ☐ Describe how to objects compare

Question Stems and Prompts:
- ✓ Compare the length of two like objects or two different objects. Which is longer? Which is shorter?
- ✓ Compare the height of two like objects or two different objects.. Which is taller? Which is shorter?
- ✓ Compare the weight of two like objects or two different objects. Which is heavier? Which is lighter?

Vocabulary Tier 2	**Spanish Cognates**
• describe	describir
• long	
• tall	
• short	
• heavy	
• light	
• attributes	atribuir

Standards Connections
K.MD.2 → K.MD.3

Kindergarten – CCSS FOR Mathematics

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K.MD.A.2

Standard Explanation
Direct comparisons are made when objects are put next to each other, such as two children, two books, two pencils. For example, a student may line up two blocks and say, "The blue block is a lot longer than the white one." Students are not comparing objects that cannot be moved and lined up next to each other.

K.MD.2 Illustrative Tasks:

- Size Shuffle, https://www.illustrativemathematics.org/content-standards/K/MD/A/2/tasks/455
- Material: one pair of "taller"/ "shorter" cards for each student.
- The students stand in a circle with the cards in their hands.
- The teacher says "GO." The students find a partner and stand face-to-face. The taller student holds up the "taller" card and the shorter student holds up the "shorter" card.
- When the teacher calls out a student's name, they respond in a complete sentence:

  I am shorter (taller) than __________.

taller | shorter

- The teacher calls on three or four students each round. The teacher says "GO" and calls on three or four different students each time until all the students have had a turn to respond.
- Which Weighs More? Which Weighs Less?, https://www.illustrativemathematics.org/content-standards/K/MD/A/2/tasks/456
- Materials:
- Sheets of paper for each student that are folded in half with the words "Heavier" and "Lighter" written at the top of each side.
- A box of large blocks.
- A box of different objects with different weights to compare with a block from the first box. Some should be lighter than a single block and some should be heavier. The weight differences should be fairly pronounced.

The students begin by choosing a block that they will use to compare with other objects.

Students will then choose an item from the second box and compare its weight to their block. They then draw a picture of it under "Heavier" or "Lighter" depending on which applies. They continue to choose objects from the box to measure against their block until they have two or three drawings on each side of their sheet.

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K.MD.B Classify objects and count the number of objects in each category.

K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count[3].

Essential Skills and Concepts:
- ☐ Classify objects based upon a variety of measureable attributes
- ☐ Counting by ones
- ☐ Sort groups by number of objects

Question Stems and Prompts:
- ✓ Sort a given set of objects. How did you sort these? Why did you put this object into this group? Why didn't you put it into this group?

Vocabulary	**Spanish Cognates**
Tier 2	
• classify	clasificar
• sort	
• group	grupo
Tier 3	
• counting	contar

Standards Connections
K.MD.3 ← K.MD.2, K.CC.6

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Kindergarten – CCSS FOR Mathematics

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Essential Skills and Concepts:
- ☐ Classify objects based upon a variety of measureable attributes
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Question Stems and Prompts:
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Vocabulary	**Spanish Cognates**
Tier 2	
• classify	clasificar
• sort	
• group	grupo
Tier 3	
• counting	contar

Standards Connections
K.MD.3 ← K.MD.2, K.CC.6

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K.MD.B.3

Standard Explanation
Kindergarten students connect counting and ordering skills and understandings to help them classify objects or people into given categories, count the number of objects in each category, and sort the categories by count (K.MD.3).

Students identify similarities and differences between objects (e.g., size, color, shape) and use these attributes to sort a collection of objects (MP.2, MP.6, MP.7).

When the objects are sorted, students count the objects in each set and then order each of the sets by the amount in each set.

K.MD.3 Illustrative Task(s):

- Sort and Count I, https://www.illustrativemathematics.org/content-standards/K/MD/B/3/tasks/799
- You will need sorting cards or items, for example: colors, shapes, animals, foods, etc. Cards should be able to be sorted multiple ways (example, foods could be sorted by color, then sorted by fruit vs. veggie vs. grain). Another example is animals could first be sorted by pet vs. wild animal vs. farm animal and next be sorted by number of legs and finally be sorted by furry animals/skin animals/scale animals. First have students look at the cards and decide two or three different ways to sort. Next each student can randomly choose a card or item. Then when all class has one, they sort themselves into categories according to color, shape, and type of animal or food they have. Then the teacher can ask the questions:
    - "Which group has the most?"
    - "Which group has the least?"
    - "Do any groups have the same number?"

The students count the groups and answer the teacher's questions.

- Sort and Count II, https://www.illustrativemathematics.org/content-standards/K/MD/B/3/tasks/990
- Students get a bag of small objects. Each bag should contain objects that can be sorted in multiple ways. For example, if the bag contains round buttons, students can sort by color, size, or the number of holes in each button. If the bag contains different shapes in different colors, they can sort by color or shape.
    - Students take their bag and spill it onto a large sheet of paper or a tray. Students then sort them according to one attribute such as color, shape, size, or some other attribute.
    - When they have sorted all of the objects, students then count the number of objects in each group.

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Kindergarten – CCSS FOR Mathematics

K.MD.B.3

Standard Explanation
Kindergarten students connect counting and ordering skills and understandings to help them classify objects or people in given categories, count the number of objects in each categor and sort the categories by count (K.MD.3).

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K.G.A Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

K.G.1 Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind, and next to.*

Essential Skills and Concepts:

- ☐ Describe the position of an object
- ☐ Names shapes
- ☐ Find shapes in the environment and describe their positions

Question Stems and Prompts:

Students need opportunities to identify and name two- and three-dimensional shapes in and outside of the classroom and describe relative positions.

- ✓ Ask students to find rectangles in the classroom and describe the relative positions of the rectangles they see [(Possible answer: The rectangle (a poster) is over the sphere (globe)].
- ✓ The teacher holds up objects such as an ice cream cone, a number cube or ball, and asks students to identify each shape.
- ✓ The teacher places an object next to, behind, above, below, beside, or in front of another object and asks positional questions--Where is the object?
    - o Which way?
    - o How far?
    - o Where?
    - o What type of objects?

Vocabulary	**Spanish Cognates**
Tier 2	
• position	posicion
• shape	
Tier 3	
• square	
• circle	círculo
• triangle	triángulo
• rectangle	rectángulo
• hexagon	hexagono
• cube	cubo
• cone	cono
• cylinder	cilindro
• sphere	esfera

Standards Connections

K.G.1 and K.G.2 → K.G.3 and K.G.4

Kindergarten – CCSS FOR Mathematics

K.G.A Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, an spheres).

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• cone	cono
• cylinder	cilindro
• sphere	esfera

Standards Connections

K.G.1 and K.G.2 → K.G.3 and K.G.4

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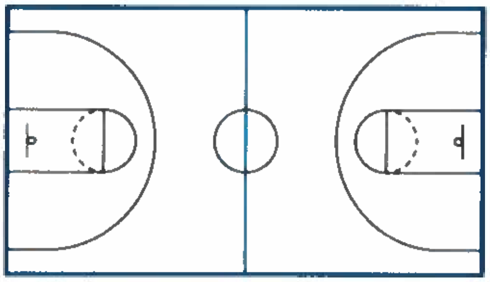
K.G.A.1

Standard Explanation

Students use positional words to describe objects in the environment (K.G.1). Examples of positional words include in and out, inside and outside, down and up, above and below, over and under, before and after, top and bottom, front and back, right and left, on and off, begin and end, and near and far.

Students develop spatial sense by connecting geometric shapes to their everyday lives. Students need opportunities to identify and name two- and three-dimensional shapes in and outside of the classroom and describe relative positions by answering questions such as these:

- Which way is the cafeteria? (The cafeteria is to the right.) Which shape is near the rectangle? (The circle is near the rectangle.)
- Where is the green ball? (The green ball is on top of the cupboard.)
- What types of shapes do you see on the floor of the basketball court? (I see a rectangle and a circle on the basketball court.)



Students begin to name and describe three-dimensional shapes with mathematical vocabulary, using words such as sphere, cube, cylinder, and cone, and answer related questions (MP.6, MP.7). Examples for standard K.G.1 include the following:

- Ask students to find rectangles in the classroom and describe the relative positions of the rectangles they see. (Possible answer: The rectangle [a poster] is over the sphere [globe]).
- The teacher holds up objects—such as an ice-cream cone, a number cube, or a ball—and asks students to identify each shape.
- The teacher places an object next to, behind, above, below, beside, or in front of another object and asks positional questions such as "Where is the object?" (adapted from ADE 2010; KATM 2012, Kindergarten Flipbook; and UA Progressions Documents 2012c).

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

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Kindergarten – CCSS FOR Mathematics

K.G.A.1

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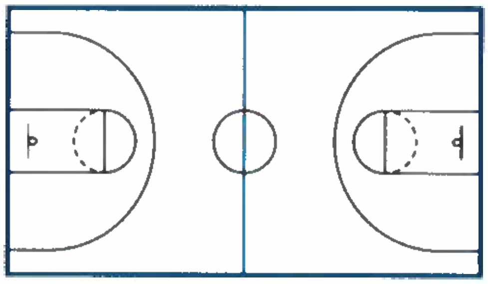

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K.G.A Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

K.G.2 Correctly name shapes regardless of their orientations or overall size.

Essential Skills and Concepts:
- ☐ Recognize shapes in different orientations or of different sizes
- ☐ Name two-dimensional and three-dimensional shapes

Question Stems and Prompts:
- ✓ What shape is this? How do you know? What if I turn it upside down? What shape is it now? How do you know?
- ✓ What is this little shape? What is that larger shape? Are they the same shape? How do you know?
- ✓ Present a series of shapes of varied sizes and orientations. Is there a circle? How many triangles do you see?

Vocabulary	**Spanish Cognates**
Tier 2	
• shape	
• size	
Tier 3	
• square	
• circle	círculo
• triangle	triángulo
• rectangle	rectángulo
• hexagon	hexagono
• cube	cubo
• cone	cono
• cylinder	cilindro
• sphere	esfera

Standards Connections
K.G.1 and K.G.2 → K.G.3 and K.G.4
K.G.2 → K.G.6, 1.G.1

Kindergarten – CCSS FOR Mathematics

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Standards Connections
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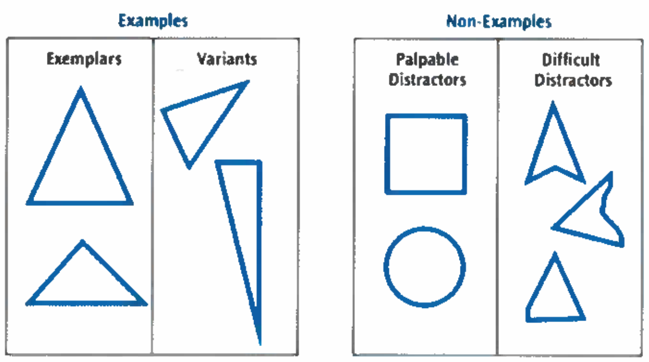
K.G.A.2

Standard Explanation
Kindergarten students work with a variety of shapes that have different sizes. They learn to match two-dimensional shapes even when the shapes have different orientations (K.G.2). Students name shapes that occur in everyday situations, such as circles, triangles, and squares, and distinguish them from non-examples of these categories.

Students develop an intuitive image of each shape category. Figure K-3 includes examples and non-examples of triangles, as described below:

- Examples
  - Exemplars—typical visual prototypes of the shape category
  - Variants—other examples of the shape category
- Non-Examples
  - Palpable distractors—non-examples with little or no overall resemblance to the exemplars
  - Difficult distractors—visually similar to examples, but lack at least one defining attribute

Figure K-3. Examples and Non-Examples of Triangles



Adapted from UA Progressions Documents 2012c.

K.G.2 Examples:
1. Teacher makes pairs of paper shapes that are different sizes. Each student is given one shape and the objective is to find the partner who has the same shape.

2. Teacher brings in a variety of spheres (tennis ball, basketball, globe, ping pong ball, etc.) to demonstrate that size doesn't change the name of a shape.

Arizona's College and Career Ready Standards – Mathematics – Kindergarten, Arizona Department of Education, http://www.azed.gov/azccrs/mathstandards/

Kindergarten – CCSS FOR Mathematics

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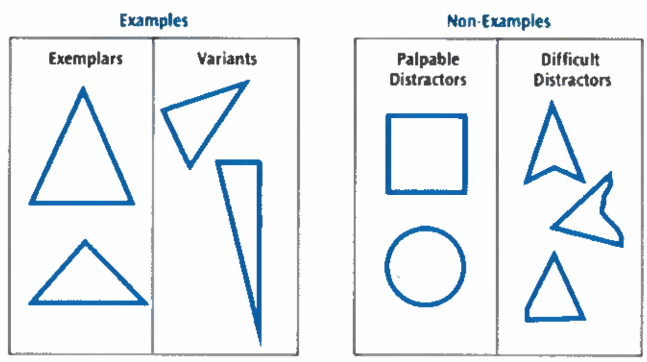

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K.G.A Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

K.G.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Essential Skills and Concepts:
- ☐ Identify two-dimensional shapes
- ☐ Identify three-dimensional shapes

Question Stems and Prompts:
- ✓ Present a number of shapes in various sizes and orientations. Determine which of the objects are two-dimensional and which are three-dimensional.
- ✓ Present images of shapes in various sizes and orientations. Determine which of the objects are two- dimensional and which are three-dimensional.
- ✓ This is a square. Is it two or three dimensional? How do you know?
- ✓ This is a sphere. It is three-dimensional. Yes or no? How do you know?
- ✓ This is a circle. It is three-dimensional. Yes or no? How do you know?

Vocabulary	**Spanish Cognates**
Tier 2	
• identify	
Tier 3	
• two-dimensional	
• three-dimensional	
• square	
• circle	círcular
• triangle	triángulo
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Standards Connections

K.G.3 and K.G.4 → K.G.2

K.G.3 and K.G.4 → 1.G.1

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Kindergarten – CCSS FOR Mathematics

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K.G.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Standard Explanation
Students identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid") [K.G.3] and differentiate between two-dimensional and three-dimensional shapes (MP.6, MP.7). For example:

- Students name a picture of a shape as two-dimensional because it is flat and can be measured in only two ways (by its length and width).
- Students name an object as three-dimensional because it is not flat (it is a solid object or shape) and can be measured by length, width, and height (or depth) [adapted from ADE 2010].

Kindergarten students connect their work with identifying and classifying simple shapes (refer to standards K.G.1–3) to help them compare shapes and manipulate two or more shapes to create a new shape. This understanding also builds foundations for students to "reason with shapes and their attributes" in grade one (refer to standards 1.G.1–3).

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

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Kindergarten – CCSS FOR Mathematics

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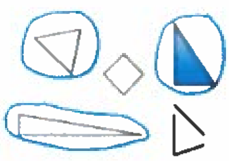
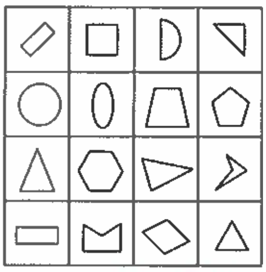
K.G.B Analyze, compare, create, and compose shapes.

K.G.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

Standard Explanation
Students describe similarities and differences between and among shapes using informal language (K.G.4). These experiences help young students begin to understand how three-dimensional shapes are composed of two-dimensional shapes—for example, the base and the top of a cylinder is a circle, the face of a cube is a square, a circle is formed in the shadow of a sphere. In early explorations of geometric properties, students discover how categories of shapes are subsumed within other categories.

Students work with various triangles, rectangles, and hexagons with sides that are not all congruent. Initially, students describe shapes using everyday language and then expand their vocabulary to include geometric terms such as sides and vertices (or corners). Opportunities to work with pictorial representations and concrete objects, as well as technology, will help students develop their understanding and descriptive vocabulary for both two- and three-dimensional shapes (MP.4, MP.6, MP.7). California *Mathematics Framework*, November 6, 2013,
http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp





K.G.4 Illustrative Task:
- Alike and Different Game, https://www.illustrativemathematics.org/content-standards/K/G/B/4/tasks/515
- Students in pairs take turns drawing two cards. They should name something that is the ALIKE or DIFFERENT between the two cards. Then the next two cards are drawn and the process repeats until no cards remain.
- In a cooperative game, the students work together to name a property for each pair.
- In a competitive game, the student who can name a property first gets to keep the cards and the student with the most cards at the end of the game wins.

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K.G.B Analyze, compare, create, and compose shapes.

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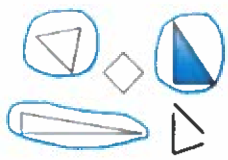

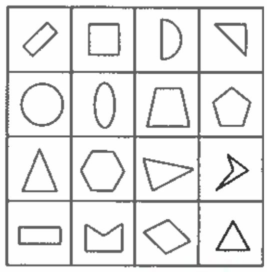

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K.G.B Analyze, compare, create, and compose shapes.

K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

Essential Skills and Concepts:
- ☐ Build shapes in the environment
- ☐ Draw shapes in the environment

Question Stems and Prompts:
- ✓ Draw a circle.
- ✓ Draw a cube.
- ✓ Using clay, make a sphere.
- ✓ Using toothpicks make a square.

Vocabulary	**Spanish Cognates**
Tier 2	
• build	
• same	
• different	diferente
• corner	
• sides	
Tier 3	
• two-dimensional	
• three-dimensional	
• vertices	vértices
• edges	
• faces	

Kindergarten – CCSS FOR Mathematics

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K.G.B Analyze, compare, create, and compose shapes.

K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

Standard Explanation
In kindergarten, students model shapes they observe in everyday life by building shapes from various components (e.g., clay, glue, tape, sticks, paper, straws) and by drawing shapes (K.G.5). Two-dimensional shapes are flat, and three-dimensional shapes are not flat (and can be "solid"), so students should draw or create two-dimensional shapes and build three-dimensional shapes (MP.1, MP.4, MP.7).

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

Kindergarten – CCSS FOR Mathematics

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K.G.B Analyze, compare, create, and compose shapes.

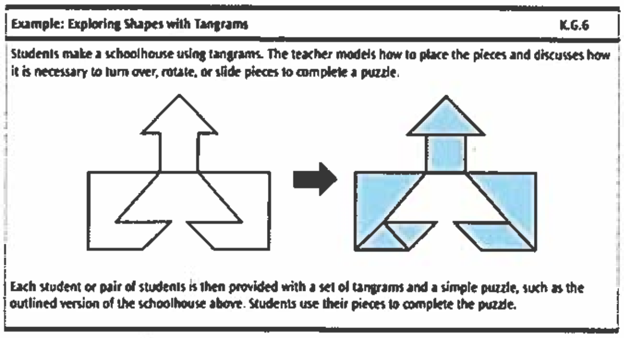
K.G.6 Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

Standard Explanation
Students compose simple shapes to form larger shapes and answer questions such as, "Can you join these two triangles with full sides touching to make a rectangle?" (K.G.6). Composing shapes is an important concept in kindergarten. Students move from identifying and classifying simple shapes to manipulating two or more shapes to create a new shape. Students rotate, flip, and arrange puzzle pieces, and they move shapes to make a design or picture. Finally, students manipulate simple shapes to make a new shape (MP.1, MP.3, MP.4, MP.7) [adapted from KATM 2012, Kindergarten Flipbook].

Puzzles provide opportunities for students to apply spatial relationships and develop problem-solving skills in an entertaining and meaningful way. Pattern blocks and tangrams are often utilized when students work with two-dimensional shapes.

Composing and decomposing shapes with right angles (squares, rectangles, and right triangles that also make isosceles triangles) provides important foundations for central geometric concepts (such as transformations) in later grades.

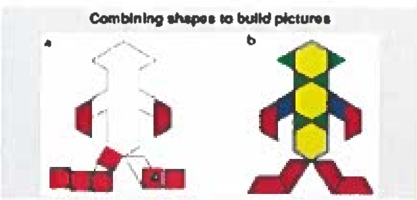
Examples of interactive tangram puzzles are available at the National Council of Teachers of Mathematics Web site (http://www.nctm.org/standards/content.aspx?id=25012 [accessed July 31, 2014]).


Example: Exploring Shapes with Tangrams K.G.6

Students make a schoolhouse using tangrams. The teacher models how to place the pieces and discusses how it is necessary to turn over, rotate, or slide pieces to complete a puzzle.

Each student or pair of students is then provided with a set of tangrams and a simple puzzle, such as the outlined version of the schoolhouse above. Students use their pieces to complete the puzzle.

Adapted from National Council of Teachers of Mathematics Illuminations 2013d.



K – 6, Geometry (2012, June 23), http://ime.math.arizona.edu/progressions/

Kindergarten – CCSS FOR Mathematics

K.G.B Analyze, compare, create, and compose shapes.

K.G.6 Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

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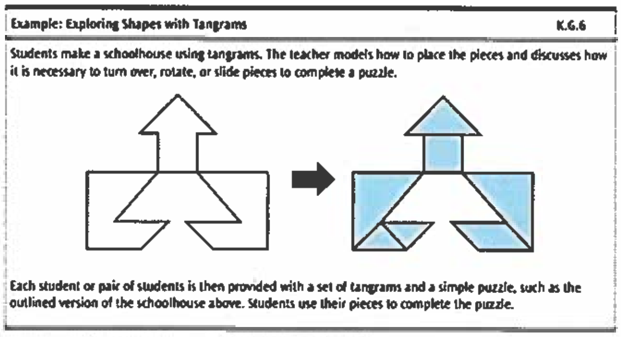
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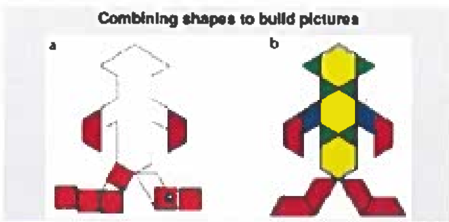
Adapted from National Council of Teachers of Mathematics Illuminations 2013d.



K – 6, Geometr (2012, June 23) http://ime.math.arizona.edu/progressions/

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Resources for the CCSS Kindergarten 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), http://ime.math.arizona.edu/progressions/

- 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

http://commoncore.tcoe.org/licensing

Kindergarten – CCSS FOR Mathematics

Resources for the CCSS Kindergarten Bookmarks

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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

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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

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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

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Kindergarten – 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/le/view/SFMP for Parents.docx/286906254/SFMP for Parents.docx

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