



SOARING HEIGHTS
CHARTER SCHOOL
DEVELOPING CHARACTER • BUILDING COMMUNITY • GROWING LEADERS

Soaring Heights Charter School

Revised August 2024

Kindergarten - Big Ideas Math

Chapter 1 - Count and Write Numbers 0-5

STANDARDS

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

CC.A.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).

CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality.

CC.B.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.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Show and count the numbers 1 and 2.
- Understand and write the numbers 1 and 2.
- Show and count the numbers 3 and 4.
- Understand and write the numbers 3 and 4.
- Show and count the number 5.
- Understand and write the number 5.
- Understand, name, and write the number 0.
- Count and order numbers to 5.

Activities:

Ready, Set, Action!: Have the students repeat as you say and show a vocabulary word and model the action provided below. To demonstrate the count card, hold up one hand and act like you are counting on your fingers to five. The number card can be acted out by pointing to a sign in the room that has a number on it. Stomp or clap to act out the numbers 1 through 5. Use a closed hand for 0. For the five frame card, draw and then point to a five frame on the board. Have students get in line to act out the order card.

Extend the lesson by having the class play a game in which students form groups of three or four depending on how many fingers you hold up.

Reason Abstractly and Quantitatively: If there is a leftover group of students, ask, "How can you make this group have three or four students?" Put the teacher into that group; put students from another class into that group. This type of thinking is expanded upon in later lessons when students learn to add.

Use masking tape to outline five squares on the floor. Have students work with partners. One student holds up one to five fingers on one hand. The other student hops that number of squares. Students take turns showing a number and hopping.

Extend the lesson by having students make their own number book using the numbers 0 through 5. Have them make their numbers on six sheets of paper. Tell them to draw the corresponding amount of dots or pictures for each number. Another option is to have students cut out pictures from a magazine to glue on the pages. As students write each number on the page, be sure to review its verbal pathway. Ask, "What will we see on the 0 page?" Consider

putting the books together with a ring so students can easily flip through them and add more numbers.

Gifted and Talented:

Have students use two manipulatives to tell and act out a story that includes the words one and two. Have them share the story with a partner or the class.

Make several copies of the subitizing cards and number cards for 1 and 2. Put them in a stack. Students draw a card, say the number and verbal pathway as they trace the number in the air, and find a group of one or two in the room.

Show students different amounts of dots (1 to 4) or other objects on paper. Have them count the objects. Take the paper away and have students close their eyes. Ask students, “How many objects were on the paper? Can you imagine the dots?” Go deeper by having them visualize three or four specific objects without showing the amount on paper. Use familiar objects such as crayons or balls.

Provide number and subitizing cards for students to place in forward and reverse order. One student orders the numbers and the other student orders the subitizing cards. Students trade shuffled cards and order the new set. Next, students take turns closing their eyes as partners remove a card from the order. Students open their eyes and identify the missing number, and then take a turn removing a number from the newly ordered set for their partners.

Chapter 2 - Compare Numbers 0-5

STANDARDS

CC.B.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.

CC.C.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.

(Clarification: Include groups with up to ten objects.)

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

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Show and tell whether two small groups are equal in number.
- Show and tell whether one group has a greater number of objects than another group.
- Show and tell whether one group has a lesser number of objects than another group.
- Use counting to compare the number of objects in two groups.
- Compare two numbers.

Activities:

Show and Tell: Students lay their vocabulary cards in front of them with the picture side facing up. Show students a vocabulary card, say the word, and describe the picture definition. Students find the corresponding card. Students tell their partners how they know the picture is a match to the vocabulary word.

Math Musicals can be used with current topics, to review previous topics, or to preview upcoming topics. There are many Math Musicals to choose from!

Use your hand puppets to act out new stories and have students sing the songs several times to take full advantage of the power of music to learn math!

Show sight words that students have learned so far. Compare the number of letters in each word. Tell which word has more letters.

Have students fold a piece of paper in half. On the left side of the paper, have students draw or write a story about something they can do alone. On the right side of the paper, have students draw or write a story about an activity that requires more than one person.

Gifted and Talented:

Give students number cards from 0 to 5 and 10 linking cubes. Have students pick a card and build a tower with the linking cubes, and then build a second tower that is equal to the first tower. Students can check each other's work for accuracy.

Roll two dice. Students tell which die has more dots on its face.

Have students pick one of the examples and tell their partners a story about what they see. The stories should include the vocabulary words from this chapter. They can use the Newton and Descartes puppets in their story telling.

Have students choose a number from 1–5 and draw that many objects on the paper. On the back, they can draw another group that has a fewer number of objects.

Play “Can You Guess My Number?” Put five or less small objects behind your back. Give students a series of comparison clues about the hidden number of objects. After hearing each clue, students should write their ideas on a whiteboard. For example, if your number is three, you could give clues, such as “My number is less than four. My number is greater than one. My number is not the same as two.” Once they feel they have the answer, they write their number.

Write the number 4 on the board. “What is a number greater than 4? less than 4? equal to 4?” Have students write or say each answer. Can be done with 1, 2, 3, 4, or 5.

Chapter 3 -Count and Write Numbers 6-10

STANDARDS

CC.B.4 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.

CC.B.4 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.

CC.B.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.

CC.A.2 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20.

CC.A.2 Count forward beginning from a given number within the known sequence.

CC.B.4 Understand that each successive number name refers to a quantity that is one larger.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Show and count the number 6.
- Understand and write the number 6.
- Show and count the number 7.
- Understand and write the number 7.
- Show and count the number 8.
- Understand and write the number 8.
- Show and count the number 9.
- Understand and write the number 9
- Show and count the number 10.
- Understand and write the number 10.
- Count and order numbers to 10.

Activities:

Word/Picture Toss: Lay out a set of vocabulary cards on the floor with the word side up. Students take turns gently tossing a counter onto a card. Read the word and have the student repeat the word. The student turns over the card to see the ten frame model and shows it to the class. Repeat this process until all of the cards show the ten frame model.

Math Musicals can be used with current topics, to review previous topics, or to preview upcoming topics. There are many Math Musicals to choose from!

Perhaps during quiet time today you could read a story about the seven dwarfs.

Have students count forward and backward from any given number within eight.\

Provide students with sets of number cards, whiteboards, and counters. One student draws a number card and places that number of counters on a desk. The other student writes the corresponding number on the whiteboard. Students should check each other's work and then switch roles.

Play "Hide and Search". Place an empty coffee can in the center of the room. Prepare nine pictures of seasonal fruit or plants. Clip a clothespin to each picture. Hide the clipped pictures in the room. Be sure part of the picture is visible so it is not too hard to find. Have students search the room for the clothespin pictures. Once they find a picture, students can take off the clothespin and drop the clothespin into the coffee can. Have students count out loud the number of times they hear a clothespin drop into the can. Have students hold on to their pictures until all are found. These students can hide their pictures for the next round.

Hand out number and subitizing cards, 0 through 9. Make sure to distribute matching sets, but only give one card to each student. Have students walk around the room to find a matching card. Each number card should match a subitizing card and vice versa. If you have fewer than 20 students, omit pairs of cards, beginning with 0, then 1, and so on. If you have more than 20 students, include additional dot patterns for selected numbers.

Play "Listen and Move". Have students stand in a circle or line. Give each student a number card to see and hold. Give the directions for a specific number to perform a task. Tell students they must listen closely so they know when to move. After each number is called, pass the number to the person to the right and play again. Try to move faster each time.

Gifted and Talented:

Provide students with six counters and ten frames. Tell students to put two counters on a ten frame. Have them count on from 2 until they reach 6. Repeat this process with different starting numbers that are less than 6. Increase critical thinking by asking questions such as, "How do you know?" and "Can you show me?"

To support students with counting on to 7, have students roll a die and fill in a ten frame with the corresponding number of counters. Have students use the opposite side of the two-color counter to fill in the rest of the frame to 7.

Have students place seven cubes on a piece of black paper to represent stars in the night sky. Students can use any arrangement. Talk with students about constellations or star patterns and have them design their own using seven cubes. The Big Dipper and Little Dipper are made up of seven stars each. The Big Dipper is a star pattern found in the constellation Ursa Major,

otherwise known as The Big Bear. The Little Dipper is a star pattern found in the constellation Ursa Minor, otherwise known as The Little Bear.

Demonstrate counting a group of eight objects without being able to see them all. Arrange eight counters so that students can see them. Use your hand to cover two counters. Can students still tell how many counters there are? Are they able to visualize the two that are covered?

Play Number Party. Have students walk around the room until you call out a number from 0 to 10. The students must put themselves into groups made up of the particular number that was called. Students who are left over get to do a fun type of action such as frog hopping or worm wiggling. The action should be stated by the teacher and for the same amount of times as the original number. Once the students complete the actions, play a new round with a new number.

Chapter 4 - Compare Numbers to 10

STANDARDS

CC.B.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.

CC.C.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.

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

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

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Use matching to compare the number of objects in two groups.
- Use counting to compare the number of objects in two groups.
- Compare two numbers.
- Tell whether objects belong or do not belong in a category.
- Compare the numbers of objects in two categories.

Activities:

Echo: Find a ball that can be easily and safely passed around by students. Designate this as the echo ball. Say a vocabulary word and then pass the echo ball to a student. The student echoes, or repeats the word, and then passes the echo ball back to you. Students need to listen carefully to repeat the word correctly. Consider challenging the students by having them define the words after they echo them.

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Have students work with partners. Give each student 10 counters and number cards 5–10. Each student draws a card from the pile and builds that number with counters. Partners use comparison vocabulary to compare their numbers.

Count The Monkeys by Mac Barnett and Kevin Cornell; Hide two or three sets of number cards 0–10 in the classroom. Tell students that the cards are hiding like the monkeys did in the story. Call on two students at a time to find one number card each. These students then compare the numbers on their cards using the vocabulary terms greater than, less than, or equal. Students then draw dots for each number on a whiteboard to show how they know they compared correctly.

Play “Number Freeze.” Give each student a number card from 0 to 10. Have students hold their cards and walk around the room until you say, “Freeze!” Students stop and partner with a student standing near them. Have partners compare their number cards using the words greater than, less than, or equal. Have students switch cards with their partners and begin walking around the room again to play a new round.

One Frog Sang by Shirley Parenteau; After the story, put number cards 0–10 in a pile. Have one student choose a number card and show it to the class. This student will say, “A number less than this number is _____” and call on another student to fill in the blank. Have the student who answers choose another number card from the pile and repeat the process. Replace less than with greater than and equal to.

Gifted and Talented:

Provide number cards 5-10 and place the cards in a pile. Hold up a number card for students to see. Without saying the number aloud, ask students to show the number they see using manipulatives. Have students place their manipulatives on top of whiteboards. Hold up another card and ask them to show that number underneath their first group of manipulatives. Have students count the manipulatives and write each number next to its group. Ask, "How many do you have in each group?" Then have students compare the two numbers. "Compare your groups. Use the words greater than, less than, or equal."

Provide students with 10 blue and 10 red linking cubes. Have students use the linking cubes to make their own comparison problems for their partners to solve. The partners use whiteboards to write the numbers, circle the number that is greater, or cross out the number that is less.

Have students brainstorm other ways to classify the objects into two categories, such as animals that live in water and animals that do not live in water, or those that have a tail and those that do not have a tail. Discuss how each step in the problem demonstrates their learning of each success criterion. "You described something that was the same about the group of objects when you gave them a category name." This was the first success criterion. Use similar statements that explicitly state when students demonstrated the second and third success criteria. Explaining this makes the learning visible to students.

Play "Erase a Number." Write the numbers 0 to 10 on the board in a scattered arrangement. Choose a number card 0 to 10 and call out, "Name a number that is greater than the number on this card." The student will then name and erase a number from the board that is greater than the number card. Replace greater than with less than and equal to. Make sure to use greater than or equal to for the number 0 and less than or equal to for the number 10.

Write 5 to 10 common consonant-vowel-consonant words on the wall. Make sure some of the words begin with the same letter. Have students categorize the words in a chart. For example, if the words are cat, can, cup, cap, hat, and fan, then you make a chart with words that start with C on one side and words that do not start with C on the other side. Have students read and classify the words according to the chart. Then have them compare the numbers of objects in each category.

Chapter 5 - Compose and Decompose Numbers to 10***STANDARDS***

OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (claps), acting out situations, verbal explanations, expressions, or equations.

OA.A.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 ($5 = 2 + 3$ and $5 = 4 + 1$).

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Use partner numbers to show numbers to 5.
- Use number bonds to show the parts and the whole for numbers to 5
- Use partner numbers to make and take apart the number 6.
- Use partner numbers to make and take apart the number 7.
- Use partner numbers to make and take apart the number 8.
- Use partner numbers to make and take apart the number 9.
- Use partner numbers to make and take apart the number 10.
- Use a group of 5 to put together and take apart numbers to 10.

Activities:

Show and Tell: Students lay their vocabulary cards in front of them with the picture side facing up. Show students a vocabulary card, say the word, and describe the picture definition. Students should find the corresponding card and then take turns showing the card and telling a partner about the word and its picture definition.

Math Musicals can be used with current topics, to review previous topics, or to preview upcoming topics. There are many Math Musicals to choose from!

Play “Counter Drop.” Have partners lay a sheet of paper on the floor. Have one student turn around while the other student drops five counters above the paper. This student announces the number of counters dropped and the number of counters that land on the paper. The other student must name the number of counters that did not land on the paper. Then have students look at the counters and say, “ and are partner numbers for five. Five is the whole.”

Fish Eyes: A Book You Can Count On by Lois Ehlert; Read the book to the students up to the page that says: “4 striped fish plus me makes 5.” (We will finish the book when we get to number 10 later in the chapter.) Students can now create their own “Fish Number Book.” Give each student 2 pieces of paper. Students should draw partner numbers for 2, 3, 4, and 5, one pair on each side of the papers. If desired, have students create a cover for their “Fish Number Book.”

Doggies by Sandra Boynton; Read the book up to the page where 5 dogs are barking. (We will finish the book when we get to number 10 later in the chapter.) After you read a page, students can make number bonds for that number of dogs on that page.

Play a game called “Snap” with the students. Show the students 5 linking cubes stacked together. Put the linking cube stack behind your back and ask the students to say, “Snap!” Quickly break your linking cube stack into two. Show the students one part of the stack and ask whether they can tell you the part that is still behind your back. If students can’t answer, then show them the stack is still behind your back and count the stack together. Try this activity again, still using the 5 stacked linking cubes but, choose a different combination of partner numbers.

Have students work with a partner to practice conceptual subitizing. Have one partner turn six counters to red. Have the other partner say the hidden partner numbers they see. Students can show the embedded numbers by separating the groups or using their finger to circle each group. Have students switch roles and repeat the process several times until students have a good understanding of partner numbers for 6.

The Very Hungry Caterpillar by Eric Carle; Read the book to the students. Talk about the butterfly cycle. Students can now make number 9 caterpillars. Have students draw a caterpillar head or provide them with a picture of a caterpillar head. Give students two colors of dot stickers. Students add dot stickers to the caterpillar head to make 9. Example: 6 red dots and 3 yellow dots. Students should then make the number bond that represents their caterpillar.

Gifted and Talented:

Make 5 Matching Game; Each pair of students needs a set of matching cards. (Create a card that has 1 object, such as 1 star. Create another card that has 4 stars. That makes one pair of matching cards. Make several of these pairs of cards that equal 5 objects.) Shuffle and place the cards face down in two equal rows. Partner A turns over two cards. If the total of the

objects on both cards is 5, Partner A collects both cards. If not, Partner A turns them back over. Repeat for Partner B.

Play Flash Five. Write the number 5 on the board. Tell students that 5 is the whole and that they will guess one of the partner numbers. Flash a subitizing card to the students. Say this number out loud and have students decide what partner number is missing to make 5.

Create “Rainbow Number Bonds.” Give each student a plain white paper plate. Across the bottom of the paper plate write the numbers 0 through 5, evenly spaced out. Students should make a rainbow that goes from 0 to 5; a rainbow that goes from 1 to 4; and a rainbow that goes from 2 to 3 using different colors of paint. This activity is a great way to introduce the Commutative Property.

Make Six: Have students roll a die and place that many counters in a part on a number bond. They will determine how many the other part needs to be to make the whole be 6. Have students write the corresponding numbers on the number bond.

Each pair of students need 12 linking cubes and a die. Partners take turns rolling the die and then make a tower according to the number on the die. Partners compare towers and decide how many more cubes are needed for each of their towers to make 6.

Play “You Pick Two.” Have students write down a list of three numbers, two that are partner numbers for the number 9. The other number can be considered a distraction. Have students trade their lists with a partner. Tell them to find and circle the partner numbers for 9.

Play “Sandwich Bonds.” Have students put their number cards 0–10 into a pile. Tell students a number 1–10 and have them find combinations of two cards that make that number. Repeat the process saying a different number.

Make a few large number bonds on the playground using chalk. Students will play “Outdoor Number Bonds.” Have 5 students stand in one of the part circles. Then ask 9 students to stand in the whole circle. Ask the students “How many students need to stand in the other part circle?” When there are 4 children in the other circle, ask a student to say the number bond. “5 and 4 are 9.” You can continue playing this game, always having 5 students in one of the circles.

Chapter 6 - Adding Numbers within 10

STANDARDS

OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (claps), acting out situations, verbal explanations, expressions, or equations.

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

OA.A.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 ($5=2+3$ and $5=4+1$).

CC.B.4 Understand that each successive number name refers to a quantity that is one larger.

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

OA.A.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.

MP1. Make sense of problems and persevere in solving

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Add to a group of objects and tell how many.
- Add to a group of objects and complete an addition sentence.
- Put two groups of objects together and complete an addition sentence.
- Find partner numbers for a number and write an addition sentence.
- Explain addition patterns with 0 and 1.
- Add partner numbers to 5.
- Use a group of 5 to write an addition sentence.
- Find partner numbers for 10 and write an addition sentence.

Activities:

Have students work with a partner. Provide each student with a random number of up to 5 linking cubes or counters. One student uses their counters to show how many are in a group to start, the other student uses their counters to show how many join the group. Partners work together to find how many there are in all.

Play “Drop Five.” One partner drops five two-color counters on a desk. The counters represent students. Their partner sorts the counters into two groups, say 2 red and 3 yellow. Tell or write the addition sentence for this story. “There are 2 students plus 3 more students. This equals 5 students.”

Ten Black Dots by Donald Crews; Provide each student with a number of black dots, up to 10. Read the book aloud to students. Have students hold up their dots when their number matches the number on the page. After finishing the book, choose two students to hold up their dots, and ask how many there are in all.

Provide students with number cards from 1 to 5. Students choose two cards and say an addition number sentence for the cards aloud. For example, if they choose a 3 and a 5, students would say $3 + 5$. Students will hop the number of times displayed on each card to find the sum. They will then repeat the number sentence: $3 + 5 = 8$.

Have a group of 2 to 10 students stand up in front of the class. Ask students to write an addition sentence for the group. Have students use categories to find numbers (for example, students wearing red and students not wearing red) or students can choose their own numbers. Repeat with different groups of students.

Chicka Chicka 1, 2, 3 by Bill Martin Jr. and Michael Sampson; Read the book aloud to students. On the first page, stop and make the connection to how when you add the number one to two it equals three. Continue making this connection as you read through the book by asking, “If I add one more to four, what will I get?” Provide students with the number sentences on the board showing the pattern when adding one.

Have students work in pairs. Provide each pair with a cup of 5 craft sticks numbered 1–5. Each student takes 1 craft stick and writes an addition sentence, without the sum, using partner numbers for the number chosen. For example, if a student chooses 4, they could write $3 + 1 =$. Students trade with their partner and complete the sentence.

Gifted and Talented:

Write +, =, and three numbers that form an addition sentence (for example, 3, 4, and 7) on different pieces of paper and give to five students. Have them line up to form an addition sentence.

Put two groups of objects in a bag, each group having 5 or fewer pieces. Example: use 5 triangles and 4 squares from a pattern block set. One partner pulls out a group of pieces. The other partner writes an addition sentence to show how many pattern block pieces in all.

Have students work with a partner to play the game “Beanbag Toss”. Place a toy hoop some distance away from a starting point. Students will stand at the starting point and try to toss bean bags inside of the toy hoop. Partners will work together to write number sentences on scratch paper for the number of bean bags inside the hoop and those that landed outside. Students will add both numbers together to come up with the sum.

Have students find different number bond pairs for the number 10. Write the associated addition sentence for each pair.

Explore the pattern for $0 + =$. When we write 0 first, the number 0 is added to does not change.

Chapter 7 - Subtract Numbers within 10**STANDARDS**

OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.

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

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

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Subtract a group of objects and tell how many are left.
- Take from a group of objects and write a subtraction sentence.
- Take apart a group of objects and write a subtraction sentence.
- Find and explain subtraction patterns.
- Subtract within 5.
- Use a group of 5 to write a subtraction sentence.
- Use related facts to add or subtract within 5.

Activities:

Echo: Find a ball that can be easily and safely passed around by students. Designate this as the echo ball. Say a vocabulary word and then pass the echo ball to a student. The student echoes, or repeats the word, and then passes the echo ball back to you. Students need to listen carefully to repeat the word correctly. Consider challenging the students by having them define the words after they echo them.

Bring a group of 6–10 students up to the front of the class, on one side of the room. Point to that group and ask the class to count how many students are in the group, and call out the number. Then, have some (but not all) of the students in the group cross to the other side of the room. Say, “How many students did I take away?” and point to the group of students who crossed. The class should call out the number of students in that group. Say, “That leaves how many?” and point to the students in front who remained in their original spots. The class should call out the number of students who remain. Review by saying, “How many students came up to the front of the room?” Then say the number sentence that was acted out (for example, “9 take away 3 leaves 6.”) Have the students in the group sit down and call a new group of students numbering between 6 and 10 up to the front of the class, and repeat the activity.

Teach students to chant “Ten Little Monkeys Jumping on the Bed.” Have students hold up fingers as they count down. You can also have them sing the chant, using the first two bars of the alphabet song:

10 little monkeys, jumping on the bed
1 fell off and bumped his head
Mama called the doctor and the doctor said:
“No more monkeys jumping on the bed!”
9 little monkeys, jumping on the bed
1 fell off and bumped his head
Mama called the doctor and the doctor said:

“No more monkeys jumping on the bed!”

Continue counting down. When you reach 0, use the words:

0 little monkeys jumping on the bed
Nobody fell off and bumped his head
Mama called the doctor and the doctor said: “Tell those monkeys it’s time for bed!”

Give pairs of students a set of number cards 6 to 10. One partner picks a card. Their partner uses their fingers to show the number using 5 fingers plus some more. Say, “___ subtract 5 equals ___.”

Read *Elevator Magic* by Stuart J. Murphy. Then have students draw a tall building with 10 stories. Use a whiteboard or overhead to draw an example for students to model. Have them label each story of the building, with 1 at the bottom and 10 at the top. Then tell them to put their finger on floor number 10. Say “Hop your finger down 5 times.” Using the building on your whiteboard or overhead, show them how to hop down. Ask, “What floor are we on?” Repeat multiple times, starting on different floors.

Gifted and Talented:

Play Drop Five. One partner drops five counters on a desk to represent five students. Their partner takes away the red counters. Tell or write the addition sentence for this story. “There are 5 students take away 3 students equals 2 students.”

Ask the class to name different games that kids play. Say, “Here is a math story about kids playing tag and soccer. There were 6 kids playing tag and 8 kids playing soccer. Then, 2 kids left the group playing tag and went to go play soccer. How many kids were left in the group playing tag?” Then ask each student to tell a story about two groups of kids playing two different games. Have students tell how many kids were in each group; then they tell how many kids left one group; then they say how many kids were left in that group.

Pair up students. Have one student in each pair hold up a number of fingers between 6 and 10 and say “I had _____ fingers.” (Where _____ is the number of fingers they’re holding up.) Then have the other student hold up a small number of fingers and say “And _____ went away” as they march their hand(s) away in the air. The first student should stop holding up however many fingers the second student marched away, and say “_____ were left on that fine day.” (Where _____ is the number of fingers they are still holding up.) Have students switch roles and repeat the activity.

Explore the pattern for subtracting 2.

Work with a partner. Write three subtraction problems that equal 2. ____ - ____ = 2

Prepare for the activity by dividing decks of cards into 4 equal stacks by suit, each pile having the cards ace through 5 in that suit. (6 through 10 and face cards will not be used in this activity.) Divide students into groups of 4. Give each student in each group a stack of cards of a different suit. Be sure to explain that the ace card stands for the number 1. Have students choose 2 of their cards to create a subtraction sentence with a missing value. The group will look at each subtraction sentence and find the correct number of the missing value.

Chapter 8 - Represent Numbers 11 to 19

STANDARDS

CC.B.4 When counting objects, say the number names in the standard order, pairing each object with the number name and each number name with the object.

CC.B.4 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.

CC.B.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.

NBT.A.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

CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Find a group of 10 objects and tell how many more objects there are.
- Count and write the numbers 11 and 12.
- Understand the numbers 11 and 12.
- Count and write the numbers 13 and 14.
- Understand the numbers 13 and 14.
- Count and write the number 15.
- Understand the number 15.
- Count and write the numbers 16 and 17.
- Understand the numbers 16 and 17.
- Count and write the numbers 18 and 19.
- Understand the numbers 18 and 19.

Activities:

Stringing Necklaces:

Provide students with a string long enough to make a necklace and items that can be used for stringing. Items could include beads, cereal, etc. Students should count a total of 11 or 12 items and use them to string onto the necklace provided. Encourage students to count the number of items added as they work on stringing.

Gifted and Talented:

Count On:

Use the Number Cards 1-15 Instructional Resource. Shuffle and place face down. One student selects a card. Their partner uses this number as the starting number and counts on to 15. Reverse roles. Use the dot side as well as the number side

Chapter 9 - Count and Compare Numbers to 20

STANDARDS

CC.B.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.

CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20.

CC.B.4 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.

CC.B.4 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.

CC.B.4 Understand that each successive number name refers to a quantity that is one larger.

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

CC.A.2 Count forward beginning from a given number within the known sequence.

CC.C.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.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools and strategies

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Show and count the number 20.
- Count and write the number 20.
- When told a number, count that many objects.
- Count forward from any number.
- Order numbers to 20.
- Use counting to compare the numbers of objects in two groups.

Activities:

Mouse Count - Read the book *Mouse Count* by Ellen Stoll Walsh aloud to students. As you read, ask them to keep track of the number of mice, using linking cubes or other counters. Pause periodically while reading and ask students to use their fingers to show how many mice are on the page. After reading, ask students how they think the snake feels.

Gifted and Talented:

20 Piles - Give students a bag of paper clips, coins, or other small items. Have students work on their own to arrange their objects in 20 piles, with 1 object in pile 1, 2 objects in pile 2, and so on. Piles should be arranged in counting order, from 1 to 20. Students will need 210 items to make all 20 piles. When students are done, instruct them to write the numbers from 1 to 20 in their notebook. Ask students what they notice about their piles. Students should reflect on the small size of the 1 pile and the large size of the 20 pile.

Chapter 10 - Count to 100

STANDARDS

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

CC.A.2 Count forward beginning from a given number within the known sequence.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools and strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Count to 30 by ones.
- Count to 50 by ones.
- Count to 100 by ones.
- Count to 100 by tens.
- Count by tens and ones within 100.
- Count by tens from a given number within 100.

Activities:

Jump in a Line - Use tape to make squares on the classroom floor. Label each square with a multiple of 10, up to 100. The numbered squares should be laid out so that students can jump from square to square in numerical sequence. Students can jump from one multiple of 10 to another, counting aloud as they jump, until reaching 100.

Gifted and Talented:

Roll to 100 - Students play “Roll to 100” with a partner using 2 hundred charts and 2 dice. Students roll the dice and move that number of times on their hundred chart. Students must say the number they land on aloud, and if they do, they get to cross it out and the game continues. If not, students lose a turn, meaning their partner gets two turns in a row. First partner to reach 100, wins.

Give Me 10 More - Have students complete a journal entry about what ten more than a given number is. Ask them to show two ways to add 10 on a hundred chart. Also ask for 5 numbers that show counting by 10.

Chapter 11 - Identify Two Dimensional Shapes

STANDARDS

G.B.4 1. 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).

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

G.B.5 Model shapes in the world by building shapes from components and drawing shapes.

G.B.6 1. Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Describe two dimensional shapes.
- Identify and describe triangles.
- Identify and describe rectangles.
- Identify and describe squares.
- Identify and describe hexagons and circles.
- Join two-dimensional shapes to form a larger two dimensional shape.
- Build and explore two-dimensional shapes.

Activities:

Rectangle Kid - Read the poem aloud to students. Provide cut-out rectangles for students to create the rectangle kid as you read.

*Rectangle Kid, Rectangle Kid, Have you seen the Rectangle Kid?
A rectangle head and cheeks of red
A rectangle shirt looks very pert.
Rectangle hands like to play in sand.
Rectangle pants like to dance.
Rectangle shoes come in twos.
A rectangle hat. Imagine that!
Rectangle Kid, Rectangle Kid,
Yes, we can see the Rectangle Kid.*

Gifted and Talented:

Shape Shift - Have students work with a partner or small group. Ask them to see if they can find ways to make triangles with their bodies. For example, 2 or 3 students could use their arms to form triangle, or 3 students could line their bodies up on the floor to make a triangle. Try other shapes. Take pictures with an iPad and create a digital book.

Chapter 12 - Identify Three Dimensional Shapes and Positions

STANDARDS

G.A.3 1. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

G.B.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).

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

G.B.5 Model shapes in the world by building shapes from components and drawing shapes.

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

G.A.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.

MP1. Make sense of problems and persevere in solving them

MP2. Reason abstractly and quantitatively

MP3. Construct viable arguments and critique the reasoning of others

MP4. Model with mathematics

MP5. Use appropriate tools strategically

MP6. Attend to precision

MP7. Look for and make use of structure

MP8. Look for and express regularity in repeated reasoning

Objectives:

- Identify and describe two-dimensional and three-dimensional shapes.
- Describe three dimensional shapes.
- Identify and describe cubes and spheres.
- Identify and describe cones and cylinders.
- Build and explore three-dimensional shapes.
- Describe positions of solid shapes based on other objects.

Activities:

Clay - Provide students with clay and models of solids. Have students press a flat side of a solid into the clay to create a two dimensional shape. Discuss the different shapes and solids and have students describe the shapes they make in the clay

Real World Shapes - Provide old magazines, newspapers, and books for students to search :through and cut shapes out of. Place a large square piece of paper at one end of the room and a large circular piece of paper at the other end of the room. Have students search through the magazines, newspapers, and books for images of spheres and cubes, making sure students are not cutting out squares and circles. Students then glue images of cubes onto the square paper and images of spheres onto the circular paper.

Gifted and Talented:

Rolls and Stacks - Provide students with images of real-world objects and have them sort the objects into different descriptive categories around the room. For example, set up three different areas in the room with signs that say “Rolls,” “Rolls and Stacks,” and “Stacks and Slides.” Provide students with images of basketballs, funnels, and dice, and have them take each card to the area with the correct description. Repeat with different shapes and/or categories.

Chapter 13 - Measure and Compare Objects

STANDARDS

M.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

M.A.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.

Objectives:

- Compare the heights of two objects.
- Compare the lengths of two objects.
- Compare the lengths of two objects using numbers.
- Compare the weights of two objects.
- Compare the weights of two objects using numbers.
- Compare the capacities of two objects.
- Identify the measurable attributes of an object.

Activities:

Comparing Heights - Measure each student's height with a string. Cut the string so it is the same height as the student and attach it to a picture of the student or a cut out with their name on it. Then tape it on the wall. Point to two students' strings on the wall and have students compare their heights. Alternatively, have students trace their bodies on long paper. They can decorate their outlines. Then have students compare the height of their outlined bodies with a partner.

Heavy or Light? - Have students walk around the room holding an object (a story book, a shoe). They are looking for 3 items that are heavier/ lighter than their object.

Gifted and Talented:

Comparing Weights - Create six groups of objects, where the objects in each group have approximately the same weight. Set each group in a box or container and label them 1 through 6. Have two students roll one die each and choose an object from the corresponding box. Students compare the weights of their objects and decide which is heavier and which is lighter, or that the weights are the same. This can be done as a class or in small groups.

Dare to Compare - Have each student find a small object in the classroom or provide students with objects. Student use a balance scale and linking cubes (or other small weights) to find the weight of their object. Ask pairs of students to compare the weights of the objects based on the number of linking cubes.

Supplemental Chapter - Money

STANDARDS

K.M.B.3 Understand that certain objects are coins and dollar bills, and that coins and dollar bills represent money. Identify the values of all U.S. coins and the one-dollar bill.

K.DL.1 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Clarification: Limit category counts to be less than or equal to 10)

Objectives:

- Understand that certain objects are coins and dollar bills, and that coins and dollar bills represent money.
- Identify the values of all U.S. coins and the one-dollar bill.

Activities:

Anchor Charts-Ask the students to bring in 1-3 coins from home. All students share their coins with the class and look at them. Discuss the shape, size, images, and color of each coin. The teacher will create an anchor chart with the class based on these observations. (one anchor charter for each coin- penny, nickel, dime, quarter) The charts will also indicate the value of each coin.

Money Sort- The teacher will give each table of 4-6 students a pile of plastic coins. The students will sort the coins onto 4 papers. Then students will count how many coins they have in each group.

Video: <https://www.youtube.com/watch?v=MbtmucV-U2c>

Gifted and Talented:

Adding Coins- Students will add up the values of a random assortment of coins (up to \$1.00) using plastic coins to join like coins together first. Write an equation for each set of coins.

Shopping Time - Students will be given images of toys and books with price tags on them (up to \$1.00). The students will have to use plastic coins to show the amount needed (exact amount) for the given object to purchase. A second student will act as the shopkeeper and count up the amount to make sure it is correct.

