CCK-37  Equal To

Pages 134–139

Standards: K.CC.A.1, K.CC.B.4, K.CC.C.6

Goals:
Students show whether the number of objects in two groups is equal or not equal by matching and by counting. (Numbers must be within 10.)

Prior Knowledge Required:
Can count to 40
Can draw lines to show matching
Can count up to 10 objects or pictures of objects arranged in different ways
Can count to answer “how many?” questions for groups of up to 10 objects or pictures of objects
Can assign numerals to groups of up to 10 objects
Knows that the equal sign (=) means that two quantities or two numbers are the same

Vocabulary: count, equal (=), how many, match, same

Materials:
BLM Bicycles and Wheels (p. G-31)
bins (see Activity Centers 1, 2)
BLM Light and Dark Circles and Half Circles (p. G-32, see Activity Centers 1, 2)
glue (see Activity Centers 1, 2, 4)
construction paper (see Activity Centers 1, 2)
BLM Picture Cards (6) to (10) (pp. I-24–28, see Activity Centers 3, 4)
BLM Number Cards (6) to (10) (pp. I-13–17, see Activity Centers 3, 4)
opaque bags (see Activity Center 4)
identical connecting cubes (see Extensions 1–3)
blocks (see Extension 4)
triangles and squares from BLM Pattern Blocks (p. I-58, see Extensions 5, 6)

Counting practice. Practice counting to 50 as a class. Play I Start, You Finish (see introduction to Unit 1, p. C-1) as a class for the numbers from 30 to 40.

NOTE: In advance, cut out the bicycles and front wheels from BLM Bicycles and Wheels. Since you will use the pictures again in the next lesson, you may wish to laminate the cutouts.
Review showing equal by drawing matching lines. Hold up a bicycle from BLM Bicycles and Wheels. ASK: What is missing? (a front wheel) Affix four bicycles and four front wheels to the board, as shown below:

![Bicycles and Wheels Diagram]

SAY: Let’s draw lines to find out if the numbers of bicycles and front wheels are equal. Starting on the left, have a volunteer draw the first line. Point to the first bicycle and ASK: Is this bicycle matched with one wheel? (yes) Repeat for the remaining bicycles. ASK: Is every bicycle matched with a wheel? (yes) Point to the wheels and ASK: Is every front wheel matched with a bicycle? (yes) Are the numbers of bicycles and front wheels equal? (yes) Affix a fifth wheel to the board. ASK: Is there a bicycle for this wheel? (no) Are the numbers of bicycles and front wheels equal? (no)

Repeat with six bicycles and seven wheels if needed.

Review showing equal by counting. Put six chairs at the front of your class. Ask six students to stand at the back of the class. ASK: How can we find out if there is a seat for every person? (count) Ask one volunteer to count the seats and another to count the people. ASK: How many are there of each? (6) Draw on the board:

![Chairs and People Diagram]

Have the class count to verify that there are six of each. Write an equal sign between the two pictures on the board. Point to the equal sign and ASK: What does this mean? (the numbers of chairs and people are equal, the numbers of chairs and people are the same) Erase one person on the board and ask one of the students to sit down. ASK: How many people are there now? (5) Erase the 6 beside the people on the board and ASK: What number should I write? (5) Write “5” on the board. Pointing to the equal sign, ASK: Are the numbers of chairs and people equal? (no) Erase the equal sign. SAY: We only use the equal sign when the numbers are the same.

Activities 1–2
(MP.4, MP.7) 1. Matching to find out if groups are equal. Direct students to AP Book K.1, Unit 5, pp. 134–135. Point to Question 1 and SAY: Each circle on the top is matched with one circle on the bottom by a line. ASK: Is there one circle on the top for every circle on the bottom? (yes) Are the numbers of circles on the top and on the bottom equal? (yes) SAY: The groups are equal, so we color the happy face. Complete Question 2 as a class. (not equal, color the sad face) Have students complete the remaining questions on their own.
(MP.4, MP.7) **2. Counting to find out if numbers are equal.** Direct students to AP Book K.1, Unit 5, pp. 136–139. Point to **Question 8** and have students count the circles at the top.

ASK: How many circles are there? (5) Have students circle the number 5 below the five circles. Repeat for the circles at the bottom. (7) Point to the two circled numbers and ASK: Are these numbers the same? (no) Are they equal or not equal? (not equal) SAY: To show not equal, we color the sad face. (see completed question below)

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1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
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Repeat for **Question 9**. (equal) Have students complete the remaining questions on their own.

**(end of activities)**

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**Activity Centers**

(MP.1, MP.7) **1. Matching to Compare** (see introduction to Unit 2, p. D-2)

*Variation:* Provide two bins for each group, one labeled with a picture of a light half circle and containing light half circles, and the other labeled with a picture of a dark half circle and containing dark half circles—you can use cutouts from BLM Light and Dark Circles and Half Circles. Give each student a piece of construction paper and glue. Students glue 6 to 10 light half circles onto the paper, then they glue a dark half circle to match each light half circle. Example:

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1 2 3 4 5 6 7 8 9 10
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(MP.4, MP.7) **2. Drawing Lines to Compare** (see introduction to Unit 2, p. D-3)

*Variation:* Provide two bins for each group, one labeled with a picture of a light circle and containing light circles, and the other labeled with a picture of a dark circle and containing dark circles—you can use cutouts from BLM Light and Dark Circles and Half Circles. Give each student a piece of construction paper and glue. Students glue 7 to 10 light circles on the left side of the paper. Then, on the right side, they glue one dark circle at a time for each light circle and draw a line between them, until every light circle has a matching dark circle. Example:

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(MP.4, MP.7) 3. **Picking Pictures to Compare** (see introduction to Unit 2, p. D-3)

_Variations:_

1. Use picture cards for six to 10 objects from _BLM Picture Cards (6) to (10)._  
2. Use one set of picture cards for six to 10 objects and a set of number cards for 6 to 10 from _BLM Number Cards (6) to (10)._  

(MP.7) 4. **Pairing Groups to Compare by Counting** (see introduction to Unit 2, p. D-3)

_Variation:_ Use number cards for 6 to 10 from _BLM Number Cards (6) to (10)_ and picture cards for six to 10 objects from _BLM Picture Cards (6) to (10)._  

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**Extensions**

**NOTE:** Extensions 1–6 should be done in order.

1. Give each student 12 identical connecting cubes in two chains, one with 2 cubes and the other with 10 cubes. Students arrange the chains as shown below, and then move one cube at a time until the two chains are equal in length. ASK: How many cubes did you need to move?  

![move cubes](image)

**Answer:** 4 cubes

2. Give each student 10 identical connecting cubes. Have students make the following chains of cubes, then try to make them the same length, as they did in Extension 1. ASK: Can you always move cubes to make the chains the same length?  

   a) 1 and 3 cubes  
   b) 1 and 4 cubes  
   c) 1 and 5 cubes  
   d) 2 and 3 cubes  
   e) 2 and 4 cubes  
   f) 2 and 5 cubes  

**Answers:** No, moving cubes makes the chains the same length only for a), c), and e).

3. Give each student 19 identical connecting cubes. Have students make the following chains of cubes, then try to make them the same length, as they did in Extension 1. ASK: Can you always move cubes to make the chains the same length?  

   a) 3 and 10 cubes  
   b) 4 and 10 cubes  
   c) 5 and 10 cubes  
   d) 6 and 10 cubes  
   e) 7 and 10 cubes  
   f) 8 and 10 cubes  
   g) 9 and 10 cubes  

**Answers:** No, moving cubes makes the chains the same length only for b), d), and f).

4. Students work in pairs. Give Student 1 seven blocks and give Student 2 three blocks. Each student counts their own blocks. Together they decide who has more. Then the student with more passes one block to the student with fewer and both students count their blocks again. They continue counting, comparing, and exchanging blocks until they have the same number of blocks. Have pairs repeat with the following numbers of blocks: 1 and 3 blocks, 2 and 4 blocks, 3 and 5 blocks, 1 and 5 blocks, 2 and 6 blocks, and 3 and 7 blocks.

   For an added challenge, have students work in groups of three. Groups can start with the following numbers of blocks: 1, 2, and 3 blocks; 1, 1, and 4 blocks; 1, 2, and 6 blocks; 2, 3, and 4 blocks; and 2, 2, and 5 blocks.
5. Give each student four triangles and at least five squares from BLM Pattern Blocks. Students try to find out how many squares have the same number of sides as four triangles. **Answer:** Four triangles have 12 sides, so three squares have the same number of sides as four triangles.

(MP.1, MP.3, MP.7) 6. Give each student two squares and at least four triangles from BLM Pattern Blocks. Students try to find out if there is any number of triangles that has the same number of sides as two squares. Have students explain their answers in pairs. Do they agree with each other? Have them discuss why or why not. **Sample answer:** Two squares have eight sides. One triangle has three sides, two triangles have six sides, and three triangles have nine sides. If I used more than three triangles, I would get more than 9 sides. So there is no number of triangles that have 8 sides altogether.

(MP.1, MP.7) 7. Give a copy of the following picture to each pair of students.

![Diagram of dots]

a) Have students take turns counting the dots in different ways
b) Have students explain to their partner how they know they counted correctly. Each student should find at least two correct ways of counting the dots.

**Sample answers:**

a) • count from left to right, then from top to bottom to get 9 dots
   • count from bottom to top, then from left to right to get 9 dots
b) I went in an order, so I made sure I didn’t miss any dots or count any twice

Redirecting students: If students struggle to find an organized way to count the dots accurately, encourage them to trace a path to connect the dots, either with their fingers or gently with a pencil, or to count the dots in smaller groups (either by imagining groups or lightly drawing groups with a pencil).
CCK-38 Greater Than

Pages 140–145


Goals:
Students show that the number of objects in one group is greater than the number of objects in another group by matching and by counting, and then comparing the numbers. (Numbers must be within 10.)

Prior Knowledge Required:
Can count to 40
Can draw lines to show matching
Can count up to 10 objects or pictures of objects arranged in different ways
Can count to answer “how many?” questions for groups of up to 10 objects or pictures of objects
Can assign numerals to groups of up to 10 objects
Can use the count sequence to determine which of two numbers within 5 is greater

Vocabulary: count, extra, greater, how many, match, more, same

Materials:
BLM Bicycles and Wheels (p. G-31)
BLM Number Charts to 5 (p. I-44)
BLM Number Charts to 10 (p. I-45)
bins (see Activity Centers 1, 4, 5)
material (see Activity Centers 1, 4, 5)
BLM Light and Dark Circles and Half Circles (p. G-32, see Activity Center 1)
construction paper (see Activity Center 1)
stickers (see Activity Center 1)
BLM Picture Cards (pp. I-19–28, see Activity Centers 2, 5)
BLM Number Cards (1) to (10) (pp. I-8–17, see Activity Centers 2, 4, 5)
BLM Matching Template (p. I-43, see Activity Center 4)
opaque bag (see Activity Center 5)
8 small blocks and 6 large blocks per student (see Extension 1)
identical blocks (see Extensions 2, 3)
2 identical boxes (see Extension 2)
tape (see Extension 4)

Counting practice. Play I Start, You Finish (see introduction to Unit 1, p. C-1) as a class for the numbers from 40 to 50. Play The Counting Game (see introduction to Unit 1, p. C-3) as a class, touching between 30 and 40 objects. Play “Let’s Compare” within 5.
Review showing which group has more by matching. Affix bicycles and front wheels from BLM Bicycles and Wheels to the board, as shown below:

SAY: Let's find out which group has more, bicycles or front wheels. We will move wheels to make as many matches as we can. Have a volunteer move one wheel onto each bicycle, as shown below:

ASK: Are the numbers of bicycles and wheels the same? (no) Are there more bicycles or more wheels? (wheels) Point to the unmatched wheel and SAY: There is one extra wheel.

Rearrange the bicycles and front wheels and draw a dot for each, as shown below:

SAY: Let's match as many bicycles and front wheels as we can by drawing lines. Have a volunteer draw the lines starting from the bottom. ASK: Are there more bicycles or more front wheels? (front wheels) Have everyone say together “There are more front wheels than bicycles.” Pointing to the unmatched wheel, SAY: This front wheel is extra. ASK: How many extra wheels are there? (1)

Repeat with six bicycles and eight wheels, if needed.
Review showing which number is greater by using the count sequence. Affix an enlarged count sequence from **BLM Number Charts to 5** to the wall. Ask two volunteers to each pick a different number from 1 to 5 (e.g., 3 and 4). ASK: Which number is greater, 3 or 4? Put one hand below each number and, as you wave the hand under each number, have students signal thumbs up for the larger number and thumbs down for the smaller number. Affix an enlarged count sequence from **BLM Number Charts to 10** to the wall and repeat, comparing any two numbers from 1 to 10. Repeat as needed.

**NOTE:** Leave the 1 to 10 count sequence on the wall for use in Lesson CCK-39.

**Activities 1–2**

1. **Matching to show which group has more.** Direct students to AP Book K.1, Unit 5, pp. 140–141. Point to **Question 1** and SAY: Let’s find out if there are more circles or more squares. We will draw lines to match as many circles and squares as we can. Starting from the left, draw the matching lines for the first three circles and squares. Pointing to the fourth circle and to the fourth and fifth squares, SAY: I need to match this circle to one of these squares. One at a time, point to each of the squares and SAY: Put up your hand if you think I should draw the line to this square. Draw a line to match with the fourth square. SAY: Even though this square (point to the fifth square) is closer, I drew a line to this other square (point to the fourth square) because I don’t want to skip any squares. ASK: Are there more circles or squares? (squares) Pointing to the bottom sun, SAY: Since there are more squares, I will color this sun. (see completed question below)

   ![Matching Question](image)

   Have students complete the remaining questions on their own.

2. **Counting to show which number is greater.** Direct students to AP Book K.1, Unit 5, pp. 142–145. Point to **Question 7** and have students count aloud as you point to each circle on the top. ASK: How many circles are there? (9) Circle the number 9 below the nine circles. Repeat for the circles on the bottom. (6) Point to the two circled numbers and ASK: Which number is greater, 9 or 6? (9) Point to the top sun and SAY: Since 9 is greater, I will color this sun. (see completed question below)

   ![Counting Question](image)

   Have students complete the remaining questions on their own.

**end of activities**
Activity Centers
(MP.4, MP.7) 1. Drawing Lines to Compare (see introduction to Unit 2, p. D-3)
Variation: Instead of showing equal to, students show more. Provide two bins for each group, one labeled with a picture of a light circle and containing light circles, and the other labeled with a picture of a dark circle and containing dark circles—you can use cutouts from BLM Light and Dark Circles and Half Circles. Give each student a piece of construction paper and glue. After students have glued 6 to 10 pairs of circles—one light circle and one dark circle—onto their paper, they continue gluing circles on one side to show more, then draw lines to match as many pairs as possible. Ask students to draw a picture of a sun beside the side that has more. You might also provide stickers and have students place one beside the side that has more. Example:

(MP.4, MP.7) 2. Picking Pictures to Compare (see introduction to Unit 2, p. D-3)
Variations: Instead of showing equal to, students show greater than.
1. Use picture cards for one to 10 objects from BLM Picture Cards. Player 2 picks a picture card with a different number of objects than Player 1’s card and says whose card has more objects. For example, if Player 1 has a picture card for six objects, Player 2 picks a card showing one to five objects and says “[Player 1’s] card has more objects,” or picks a card showing seven to 10 objects and says “my card has more objects.”
2. Use picture cards for one to 10 objects and number cards for 1 to 10 from BLM Number Cards (1) to (10).
3. Use picture cards for six to 10 objects.
4. Use picture cards for six to 10 objects and number cards for 6 to 10.

(MP.2, MP.7) 3. Pairing Two Groups of Objects to Show More (see introduction to Unit 2, p. D-2)
Variation: Students work on their own to collect two kinds of objects of different types, for example, books and colored pencils. One group should have a small number of objects and the other group should have a large number of objects. Students match as many objects as possible and leave the extra objects nearby, but unmatched.
Bonus: Students collect specific types of objects, for example, objects that can be read and objects that can be used for writing.
(MP.7) 4. **Comparing Numbers** (see introduction to Unit 2, p. D-4)

*Variations:* Provide number charts from BLM Number Charts to 10 for students to use as a reference.
1. Use number cards for 1 to 10 from BLM Number Cards (1) to (10).
2. Use number cards for 6 to 10 from BLM Number Cards (6) to (10).

(MP.7) 5. **Pairing Groups to Compare by Counting** (see introduction to Unit 2, p. D-3)

*Variation:* Use picture cards for six to 10 objects from BLM Picture Cards and number cards for 6 to 10 from BLM Number Cards (6) to (10). Instead of trying to pick a card with the same number of objects as Student 1’s card, Student 2 picks cards until she has a different number of objects. Then, Student 2 says whose card is greater. For example, if Student 1 has a card showing nine objects, Student 2 can pair it with a card showing six, seven, or eight objects and say “the number on [Student 1]’s card is greater,” or pair it with a card showing 10 objects and say “the number on my card is greater.”

**Extensions**

(MP.6) 1. Give each pair of students eight small blocks and six large blocks. Partners take turns explaining which group contains a greater number of blocks and which group contains bigger blocks. Each student should compare the numbers shown by the two groups of blocks using the word greater.

*Sample answer:* I matched the blocks. The group of eight small blocks has more blocks than the group of six large blocks. The blocks in the group of six blocks are bigger than the blocks in the group of eight blocks. The number 8 is greater than the number 6.

Whole class follow-up: What does “more” mean? What does “bigger” mean? Are “more” and “bigger” the same or different? What does “greater” mean when we talk about numbers?

2. Put the same number of identical blocks (at least 10 blocks) into two identical boxes. For the first box, place the blocks neatly so that they all fit inside the box. For the second box, place the blocks randomly so that some stick out above the top of the box. Without counting, rearranging, or matching, have students consider which box has more blocks. ASK: Can you tell which has more without counting?

3. ASK: If two people walk along exactly the same path across the classroom, can we say that they took an equal number of steps? (no) Why? (some people take smaller steps than others, which means they take more steps to walk the same distance) You might have student pairs find out by having each of them walk along a path that you mark with tape; tell one student to take little steps and the other to take big steps.
CCK-39  Less Than

Pages 146–151


Goals:
Students show that the number of objects in one group is less than the number of objects in another group by matching and by counting, and then comparing the numbers. (Numbers must be within 10.)

Prior Knowledge Required:
Can draw lines to show matching
Can count up to 10 objects or pictures of objects arranged in different ways
Can count to answer “how many?” questions for groups of up to 10 objects or pictures of objects
Can assign numerals to groups of up to 10 objects
Can use the count sequence to determine which of two numbers within 10 is greater

Vocabulary: count, fewer, less, match

Materials:
BLM Tricycles and Handlebars (p. G-33)
glue (see Activity Centers 1, 3, 4)
bins (see Activity Centers 1, 3)
BLM Light and Dark Circles and Half Circles (p. G-32, see Activity Center 1)
construction paper (see Activity Center 1)
stickers (see Activity Center 1)
BLM Picture Cards (pp. I-19–28, see Activity Centers 2, 4)
BLM Number Cards (1) to (10) (pp. I-8–17, see Activity Centers 2, 4)
BLM Matching Template (p. I-43, see Activity Center 3)
BLM Number Charts to 10 (p. I-45, see Activity Center 3)
opaque bags (see Activity Center 4)
8 small blocks and 6 large blocks per student (see Extension 1)
identical blocks (see Extensions 2, 3)
2 identical boxes (see Extension 2)
tape (see Extension 4)

Counting practice. Play I Start, You Finish (see introduction to Unit 1, p. C-1) as a class for the numbers from 35 to 45. Play “Let’s Compare” within 10.
**Review showing which group has fewer by matching.** Affix seven tricycles and five handlebars from *BLM Tricycles and Handlebars* to the board, as shown below:

SAY: Let's find out if there are fewer tricycles or fewer handlebars by making matches. Have a volunteer move each set of handlebars onto a tricycle until there are none left to move, as shown below:

ASK: Are the number of tricycles and handlebars the same? (no) Are there fewer tricycles or fewer handlebars? (handlebars)

Rearrange the tricycles and handlebars and draw a dot for each, as shown below:
SAY: Let’s match as many tricycles and handlebars as we can by drawing lines. Have a volunteer draw the lines, starting from the left. ASK: Are there fewer tricycles or fewer handlebars? (handlebars) Have everyone say together “There are fewer handlebars than tricycles.”

Review showing which number is smaller by using the count sequence. Refer students to the enlarged 1 to 10 count sequence on the wall. Ask two volunteers to each pick a different number from 1 to 10 (e.g., 7 and 9). ASK: Which number is less, 7 or 9? Put one hand below each number and, as you wave the hand under each number, have students signal thumbs up for the smaller number and thumbs down for the larger number. Repeat as needed with other pairs of numbers.

NOTE: Leave the count sequence on the wall for use in Lesson CCK-40.

Activities 1–2
1. Matching to show which group has fewer. Direct students to AP Book K.1, Unit 5, pp. 146–147. Point to Question 1 and SAY: When we did this before we found there were more squares. Now let’s find out which group has fewer, the circles or the squares. Starting from the left, draw the matching lines. ASK: Are there fewer circles or fewer squares? (circles) Since there are fewer circles, which sun should we color? (top sun) Color the top sun. (see completed question below)

![Completed question](image)

Have students complete the remaining questions on their own.

2. Counting to show which number is less. Direct students to AP Book K.1, Unit 5, pp. 148–151. Point to Question 7 and have students count aloud as you point to each circle on the top. ASK: How many circles are there? (9) Have a volunteer circle the number 9 below the nine circles. Repeat for the circles on the bottom. (6) Point to the two circled numbers and ASK: Which number is less, 9 or 6? (6) Since 6 is less than 9, which sun should we color? (bottom sun) Have a volunteer color the bottom sun. (see completed question below)

![Completed question](image)

Have students complete the remaining questions on their own.

(end of activities)
Activity Centers

(MP.4, MP.7) 1. Drawing Lines to Compare (see introduction to Unit 2, p. D-3)

*Variation:* Instead of showing equal to, students show fewer. Provide two bins for each group, one labeled with a picture of a light circle and containing light circles, and the other labeled with a picture of a dark circle and containing dark circles—you can use cutouts from BLM Light and Dark Circles and Half Circles. Give each student a piece of construction paper and glue. After students have glued 6 to 10 pairs of circles—one light circle and one dark circle—onto their paper, they continue gluing circles on one side, then draw lines to match as many pairs as possible. Ask students to draw a picture of a sun beside the side that has fewer. You might also provide stickers and have students place one beside the side that has fewer. Example:

![Sun with circles]

*Bonus:* Students make a picture to show fewer, exchange it with a partner, and draw lines to show pairs on their partner’s picture. They then point out which side has fewer.

(MP.4, MP.7) 2. Picking Pictures to Compare (see introduction to Unit 2, p. D-3)

*Variations:* Instead of showing equal to, students show less than.

1. Use picture cards for one to 10 objects from BLM Picture Cards. Player 2 picks a picture card with a different number of objects than Player 1’s card and says whose card has fewer objects. For example, if Player 1 has a picture card for six objects, Player 2 picks a card showing one to five objects and says “my card has fewer objects,” or picks a card showing seven to 10 objects and says “[Player 1’s] card has fewer objects.”

2. Use picture cards for one to 10 objects and number cards for 1 to 10 from BLM Number Cards (1) to (10).

3. Use picture cards for six to 10 objects.

4. Use picture cards for six to 10 objects and number cards for 6 to 10.

(MP.7) 3. Comparing Numbers (see introduction to Unit 2, p. D-4)

*Variations:* Students decide which number is less and then glue the cards onto BLM Matching Template with the number that is less on the left. Provide number charts from BLM Number Charts to 10 for students to use as a reference.

1. Use number cards for 1 to 10 from BLM Number Cards (1) to (10).

2. Use number cards for 6 to 10 from BLM Number Cards (6) to (10).

(MP.7) 4. Pairing Groups to Compare by Counting (see introduction to Unit 2, p. D-3)

*Variation:* Use picture cards for six to 10 objects from BLM Picture Cards and number cards for 6 to 10 from BLM Number Cards. Instead of trying to pick a card with the same number of
objects as Student 1’s card, Student 2 picks cards until he has a different number of objects. Then, Student 2 says whose card is less. For example, if Student 1 has a card showing nine objects, Student 2 can pair it with a card showing six, seven, or eight objects and say “the number on my card is less,” or pair it with a card showing 10 objects and say “the number on [Student 1]’s card is less.”

Extensions
(MP.6) 1. Give each pair of students nine small blocks and seven large blocks. Partners take turns explaining which group contains a lesser number of blocks and which group contains smaller blocks. Each student should compare the numbers shown by the two groups of blocks using the word less.
Sample answer: I matched the blocks. The group of seven large blocks has fewer blocks than the group of nine large blocks. The blocks in the group of nine blocks are smaller than the blocks in the group of seven blocks. The number 7 is less than the number 9.

Whole class follow-up: What does “less” or “fewer” mean? What does “smaller” mean? Are “fewer” and “smaller” the same or different? What does “greater” mean when we talk about numbers? What does “less” mean when we talk about numbers?

2. Put the same number of identical blocks (at least 10 blocks) into two identical boxes. For the first box, place the blocks neatly so that they all fit inside the box. For the second box, place the blocks randomly so that some stick out above the top of the box. Without counting, rearranging, or matching, have students consider which box has fewer blocks. ASK: Can you tell which has fewer without counting?

3. ASK: If two people walk along exactly the same path across the classroom, can we say that they took an equal number of steps? (no) Why? (some people take bigger steps than others, which means they take fewer steps to walk the same distance) You might have student pairs find out by having each of them walk along a path that you mark with tape; tell one student to take little steps and the other to take big steps.
CCK-40 One More Than

Pages 152–155


Goals:
Students compare consecutive numbers and learn that the next number in the counting sequence is always one more.

Prior Knowledge Required:
Can draw lines to show matching
Can count up to 10 objects or pictures of objects arranged in different ways
Can count out up to 10 objects from a larger group

Vocabulary: count, count out, equal, extra, how many, match, more, next, next number, one more

Materials:
red paper circle
pencil, paper clip, and BLM 3-Part Spinner (p. I-62)
identical connecting cubes
bins (see Activity Center 1)
masking tape and a marker (see Activity Center 2)
counters with the number 1 taped on one side and the number 2 taped on the other side (see Activity Center 2)
BLM Number Cards 0 to 5 (p. I-38, see Activity Center 3)
BLM Number Cards 6 to 10 (p. I-39, see Activity Center 3)
blocks of two different colors (see Activity Centers 4, 5, Extensions 2, 8)

Counting practice. Play I Start, You Finish (see introduction to Unit 1, p. C-1) as a class for the numbers from 35 to 50. Play “Let’s Compare” within 10.

The next number is one step away. Refer students to the enlarged 1 to 10 count sequence on the wall. SAY: Let’s play a game called “The Next Number.” Affix a red paper circle to the number 1 in the count sequence on the wall. Point to the count sequence as you SAY: We’re going to move the circle from 1 to 10. Point to the 1 and ASK: What number is this? (1) Point to the 2 and SAY: The next number after 1 is 2. Repeat for 2. Point to the 3 and ASK: What is the next number after 3? (4) Repeat to 10. Move the circle from 1 to 2 again and SAY: This is one step. I just moved the circle to the next number.

Put the circle on 1. Move the circle from 1 to 2, then immediately from 2 to 3 and SAY: This is two steps. I did not move the circle to the next number. Repeat for three steps. Show several examples of two and three steps. Then, move different numbers of steps and have students show thumbs up for one step and thumbs down for not one step.
Put the circle on 1. Hold up a spinner from BLM 3-Part Spinner. Point to each number on the spinner as you SAY: The spinner can stop on one step, two steps, or three steps. Turn the paper clip so it points to 1 and SAY: If it stops on 1, we will move the circle one step to the next number. Turn the paper clip so it points to 2 and SAY: If it stops on 2, we will not move the circle because moving two steps does not take us to the next number. Turn the paper clip so it points to 3 and repeat. Spin the spinner and have students signal thumbs up if the spinner stops on 1 and thumbs down if it doesn’t. Have volunteers move the circle to the next number only when the spinner stops on 1. Repeat until the circle has been moved to 10.

The next number has one more. Write “1” on the board. ASK: What is the next number after 1? (2) Write “2” on the board. Affix identical connecting cubes to the board, as shown below:

![Image showing 1 and 2 cubes](image)

Have students count to verify the numbers. Pointing to the cubes, ASK: Are the numbers of cubes equal? (no) Draw a matching line, as shown below:

![Image showing matching lines](image)

ASK: Which group has more cubes, one or two? (2) Point to the unmatched cube and SAY: This cube is extra. The number 2 has one more cube than the number 1. ASK: What number is next after 2? (3) Write “3” on the board beside the 2. Ask a volunteer to count out three cubes. Affix the cubes to the board, as shown below:

![Image showing 1, 2, and 3 cubes](image)

Have students count to verify the number. Pointing to the groups of two and three cubes, ASK: Are the numbers of cubes equal? (no) Draw matching lines, as shown below:

![Image showing matching lines](image)

ASK: Which group has more cubes, two or three? (3) Point to the unmatched cube and SAY: This cube is extra. The number 3 has one more cube than the number 2.

Point to the group of two cubes and then one cube and SAY: 2 is the next number after 1. It has one more cube than the number 1. Repeat for 3 and 2. SAY: Let’s make a group for the next
number after 3. ASK: What is the next number after 3? (4) How many more does a group of four cubes have than a group of three cubes? (1) Have the class count to confirm that the next number, 4, has one more cube than the group of three cubes. Repeat for 5 and 4, and then for 6 and 5. Continue building the model until it looks like the picture shown below. Leave the model on the board for later use.

![Model of counts and numbers](attachment:image_url)

**If it's not one more, it's not the next number.** Affix a group of two cubes and a group of five cubes to the board, as shown below:

![Groups of two and five cubes](attachment:image_url)

Do not count the cubes. Point to each group of cubes and have students signal thumbs up for the group that has more cubes. Point to the top three cubes in the group of five and SAY: Let’s count how many more cubes this group has. Count the cubes aloud, as shown below:

![Counting more cubes](attachment:image_url)

ASK: How many more cubes are there? (3) Cover the group of five cubes. Point to the group of two and SAY: We know the next number after this has one more cube. Uncover the group of five and ASK: Does this have one more cube? (no) SAY: That means it does not show the next number. Repeat with one and six cubes, and three and seven cubes, with the larger group always on the right. Repeat with other groups of cubes, including consecutive numbers (for example, 3 and 4) and non-consecutive numbers (for example, 4 and 7). Each time, have students decide if the model represents a number and the next number by determining if the larger group has one more cube.

**Adding one more cube to make the next number.** Write “2” and “3” on the board and affix two connecting cubes above each number, as shown below:

![Connecting cubes above numbers](attachment:image_url)
Point to the cubes above the 2 and ASK: Do the cubes show the number 2? (yes) Point to the cubes above the 3 and ASK: Do the cubes show the number 3? (no) Why not? (it should have 3 cubes) SAY: The next number after 2 is 3. ASK: Should the number 3 show the same number of cubes as 2? (no) Should it have more or fewer? (more) How many more? (1) Add one more cube above the 3, as shown below:

![Image of cubes with 2 and 3]

ASK: Is this correct now? (yes)

Repeat with 3 and 4, and with other pairs of consecutive numbers within 10.

**Activities 1–3**  
**MP.7** 1. Finding a number and the next counting number. Draw on the board:

![Image of numbers 1 to 10]

ASK: What number is in the box? (6) Point to the count sequence one number at a time and have students signal thumbs up when you point to the number that is the same as the one in the box. Underline the 6 and SAY: I drew a line below 6 to show it is the same as the number in the box. ASK: What is the next number after 6? (7) Circle the 7 and SAY: I circled 7 to show it is the next number after 6.

Direct students to AP Book K.1, Unit 5, p. 152, and point to Question 1. Point to the underlined 4 and ASK: What does the line under the number 4 show? (it’s the same as the 4 in the box) Point to the circled 5 and ASK: What does the circle around the number 5 show? (it’s the next number after 4) Have students complete the remaining questions on their own.

**MP.7, MP.8** 2. Showing the next number as one more. Draw on the board:

![Image of circles with 2 and 3]

Have students say how many circles there are above each number. SAY: Let’s make as many matches as we can to find out which group has more. Have a volunteer draw matching lines between the bottom two pairs of circles. Circle the extra circle. The picture should look like this:
Point to the extra circle and ASK: How many extra circles are there? (1) Write “1” below the picture on the board. SAY: We write 1 to show that 3 has one more than 2. Repeat with three circles on the left and four circles on the right.

Have students complete AP Book K.1, Unit 5, p. 153 on their own.

(MP.7, MP.8) 3. Making the next number by adding one more. Direct students to AP Book K.1, Unit 5, pp. 154–155, and point to Question 9. Point to the 4 and ASK: What is the next number after 4? (5) Point to the answer space and SAY: What should I write here? (5) Write “5” in the answer space. Have the class count the circles above the 4 as you point to them. Point to the 4 and ASK: Is this the correct number of circles? (yes) Have the class count the circles above the 5 as you point to them. Point to the 5 and ASK: Is this the correct number of circles? (no) Why not? (there aren’t 5 circles) How many more circles should we color so there are five colored circles? (1) Color one more circle, as shown below. Have the class count again to confirm the correct number of circles.

Have students complete the question on their own, then repeat for Question 10 if needed. Have students complete the remaining questions on their own.

Activity Centers
(MP.1, MP.8) 1. Pairing a Number of Cubes with the Next Number of Cubes
Type: Pairs
Objective: To pair two groups of connecting cubes that represent a number and the next number
Preparation: In advance, prepare chains of connecting cubes ranging from 1 to 10 cubes in length. Tape each chain so it cannot be taken apart. Give each student pair a bin, and give each student a complete set of chains for 1 to 10 cubes.
Instructions: Student 1 puts a chain of cubes on the table—tell students not to start with the chain of 10 cubes. Student 2 pairs the chain on the table with a chain containing the next
number of cubes. Students put the pair of chains into a bin. Students switch roles and repeat to make as many pairs of chains as they can.

(MP.8) 2. Moving or Not Moving to the Next Number  
Type: Pairs  
Objective: To move from one number to the next on a game board  
Preparation: Use masking tape and a marker to make game boards for each student pair on the floor, as shown below. The boxes should measure about 1 foot by 1 foot.

![Game Board](image)

Give each student pair a counter with the number 1 taped on one side and the number 2 taped on the other side.

Instructions: Both players start on 1 on separate game boards. They take turns flipping the counter. Each time, they decide whether or not they would land on the next number by moving that number of boxes. For example, if either player flips a 1, they should both move to the next number. If either player flips a 2, they should not move, and should flip the counter again until someone flips a 1. Players continue until they get to 7.

(MP.7) 3. Pairing a Number with the Next Number  
Type: Pairs  
Objective: To pair a written number with the next number  
Preparation: Give each student a set of number cards from BLM Number Cards 0 to 5—omit the card for zero.

Instructions: Student 1 puts a number card on the table—tell students not to start with the number 5. Student 2 pairs the number on the table with the next number from her set of cards. Students take their cards back, switch roles, and repeat with a different number. Together they try to make all of the consecutive pairs: 1 and 2, 2 and 3, 3 and 4, and 4 and 5.

Variations:  
1. Use number cards for 6 to 10 from BLM Number Cards 6 to 10—tell students not to start with the number 10.  
2. Use number cards for 1 to 10. Tell students not to start with the number 10.
4. Counting Out to Make a Number and the Next Number

Type: Individual

Objective: To make a number and the next number by counting out blocks

Preparation: Give each student 20 blocks of two different colors, 10 of each color.

Instructions: Write “2” and “3” on the board. Ask a volunteer to count out two blocks of one color for the number 2 and three blocks of the other color to represent the next number. Show students how to form two groups, as shown below:

Make as many pairs as possible using the two colors of blocks, as shown below:

Ask a volunteer to count how many blocks are left unmatched. (1) Have students try it with their own blocks. Then, with students working on their own, repeat for 5 and 6 blocks, and for 9 and 10 blocks.

Variation: Instead of blocks, students collect and use 20 objects, 10 of each kind of object (e.g., 10 erasers and 10 pencils).

5. Matching to Make a Number and the Next Number

Type: Individual, active

Objective: To make a number and the next number by matching

Preparation: Give each student 20 blocks of two different colors, 10 of each color.

Instructions: Write “2” on the board. Count out two blocks of one color, as shown below:

Pair each block you counted out with a block of the second color, as shown below:

Add one more block of the second color. Count both colors of blocks, as shown below:

Have students try it with their own blocks. Students work on their own and repeat for each of 5, 8, and 9 blocks.

Variation: Instead of blocks, students collect and use 20 objects, 10 of each kind of object (e.g., 10 erasers and 10 pencils).
Extensions

1. Have students tell a partner which is the next number and the next number after that.
   a) 1  b) 4  c) 6  d) 8

   **Answers:** a) The next number after 1 is 2, and the next number after that is 3; b) The next number after 4 is 5, and the next number after that is 6; c) The next number after 6 is 7, and the next number after that is 8; d) The next number after 8 is 9, and the next number after that is 10

   (MP.1)

2. Give each student eight identical blocks, but do not say how many there are.
   ASK: How can you find the next number after the next number?

   **Sample answers:**
   • I counted eight blocks. I know that the next number after 8 is 9 and the next number after 9 is 10.
   • I got two more blocks, one for the next number and one for the next number after that, and counted all of them.

   **NOTE:** For Extensions 3 and 4, give each student a number chart from 1 to 10 or draw one on the board.

3. a) How can you use the chart to find the number before 9? Explain.
   b) How can you use the chart to find the number before the number before 9? Explain.

   You might have students explain their answers in pairs.

   **Answers:**
   a) I point to 9 on the chart, and then I go back one square to get 8.
   b) I point to 9 on the chart, then I go back one square to get 8, and then I go back one more square to get 7.

   (MP.7)

4. a) Start with the number 7. What is the number before the next number?
   b) I am one more than the next number after 3. What number am I?
   c) The number before me is the next number after 8. What number am I?
   d) Have students explain their answers to parts a), b), and c) in pairs. Do partners agree with each other? Have them discuss why or why not.

   **Sample solutions:** a) The next number after 7 is 8, and the number before 8 is 7. So, 7 is the number before the next number; b) The next number after 3 is 4, and one more than 4 is 5. So the number one more than the next number after 3 is 5; c) The next number after 8 is 9, and 9 is before 10, so the number is 10.

   (MP.1, MP.3)

   **NOTE:** For part d), encourage partners to ask questions to understand and challenge each other’s thinking (MP.3)—see p. A-33 for sample sentence and question stems to guide students.

   Redirecting students: If students struggle, encourage them to use the number chart and to ask themselves: What number do I start with? What is the next number? Which number is the question asking for?
Goals:
Students compare pairs of numbers within 10 and decide which is larger and smaller by counting, and by representing the numbers with objects or pictures and then matching.

Prior Knowledge Required:
Can count to 10
Can identify written numbers within 10
Can count out up to 10 objects from a larger group
Can represent written numbers with objects within 10

Vocabulary: count, count out, greater, how many, less, match

Materials:
identical ones blocks or counters (see Activity Center 1)  
BLM Comparing Numbers Template (p. G-34, see Activity Center 1)  
BLM Consecutive and Non-Consecutive Pairs (p. G-35, see Activity Center 2, Extension 1)  
BLM Number Cards (2) to (10) (pp. I-9–17, see Extension 2)

Counting practice. Play The Counting Game (see introduction to Unit 1, p. C-3), touching between 15 and 20 objects. Play “Let’s Compare” within 10.

Counting to compare numbers: the number that is less is always first. Write “7” and “3” on the board. Have students say the numbers aloud. SAY: When we count, we always say the number that is less, first. We say the greater number later. I am going to count to 10. Listen carefully to hear which number I say first, 7 or 3. Start counting from 1. After you say 3, ASK: Did I say one of the numbers? (yes) Which number? (3) Continue counting. After you say 7, ASK: Did I say one of the numbers? (yes) Which number? (7) Finish counting to 10.

ASK: Which number did I say first, 7 or 3? (3) SAY: I said 3 before I said 7. We say the number that is less before saying the number that is greater. That means 3 is less than 7. Repeat with other pairs of numbers within 10. When students understand the process, count without prompting them to say if they heard you say the numbers.

Activities 1–2
1. Counting to compare numbers. Write “4” and “8” on the board. SAY: Let’s count to see which number is less and which number is greater. Choose one volunteer to stand up when they hear 4 and another volunteer to stand up when they hear 8. Count from 1 to 10, prompting the volunteers to stand at the correct moment if necessary. ASK: Who stood up first? (the student
who was assigned the number 4) Which number is less, 8 or 4? (4) Who stood up later? (the student who was assigned the number 8) Which number is greater, 8 or 4? (8)

Repeat with other pairs of numbers within 10. Instead of having volunteers stand up for certain numbers, have groups of students stand. For instance, for the numbers 5 and 9, you might divide the class into two groups (e.g., the left and right sides of the class, students with patterned shirts and students with plain shirts).

2. Comparing numbers. Draw on the board:

```
  8  1  2  3  4  5  6  7  8  9  10
  2
```

Ask a volunteer to circle the two numbers in the count sequence. ASK: Which number is greater, 8 or 2? (8) Color the sun beside the 8. SAY: We color the sun beside the 8 to show it is the greater number.

Work through Question 1 on AP Book K.1, Unit 5, p. 156 as a class if needed before having students complete Questions 2–4 on their own.

Draw on the board:

```
  5  2
```

SAY: Let’s find which number is less by coloring circles and matching. Point to the 5 and ASK: How many circles should we color to show this number? (5) Color them. Repeat for 2. Have a volunteer draw lines to make matches, starting from the bottom. Point to the 5 and then the 2 and SAY: Show me thumbs up for the number that is less. (2) Circle the 2 and SAY: We circle the number that is less. The final picture should look like this:
Repeat for the example below, but this time, have students identify the greater number. (6)

3 6

Have students complete Questions 5–13 on their own.

(end of activities)

Activity Centers

(MP.8) 1. Representing and Matching to Compare Numbers
Type: Individual
Objective: To represent pairs of numbers using objects, draw lines to make as many matches as possible, and identify the greater number
Preparation: Give each student 18 identical ones blocks or counters and BLM Comparing Numbers Template. Write two numbers on the board (alternatively, you can write the numbers in the answer spaces on the BLM). The numbers should be within 10, non-consecutive, and not necessarily in counting order.
Instructions: Students copy the pair of numbers into the two answer spaces at the bottom of each question. For each question, they count out the two quantities using ones blocks and arrange the blocks in the boxes above the numbers. Students then draw lines to match as many pairs as possible, decide which number is greater, and color the sun for that number. They can check with each other to see if they got the same result.
Variations:
1. Instead of arranging blocks, students can color the boxes.
2. Students color the sun to show the number that is less.

(MP.7) 2. Matching Pairs of Numbers
Type: Pairs or groups of up to five
Objective: To match consecutive and non-consecutive pairs of numbers
Preparation: In advance, cut out cards from BLM Consecutive and Non-Consecutive Pairs. Give each student three cards showing consecutive numbers and three cards showing non-consecutive numbers.
Instructions: Students place their cards face up in front of them. Student 1 puts one of his cards in the middle of the table. If Student 1’s card shows consecutive numbers, Student 2 puts down one of her cards showing consecutive numbers. If Student 1’s card shows non-consecutive numbers, Student 2 puts down one of her cards showing non-consecutive
numbers. Students place the played cards in a discard pile, switch roles and repeat until all of the cards have been played.

Variation: If Student 1’s card shows consecutive numbers, Student 2 puts down a card showing non-consecutive numbers, and vice versa.

Extensions

1. Give each student a complete set of cards from BLM Consecutive and Non-Consecutive Pairs. Students discard all of the cards that have consecutive pairs of numbers (e.g., 1 and 2). Then, they discard all the cards with numbers that have:
   - one counting number between them (e.g., 1 and 3)
   - two counting numbers between them (e.g., 1 and 4)
   - three counting numbers between them (e.g., 1 and 5)
   - four counting numbers between them (e.g., 1 and 6)

   Students are finished when they have discarded all of their cards.

(MP.3, MP.6) 2. Arrange 6 blocks in a circle. Touch each block once as you SAY: Ava counts like this the first time: 1, 2, 3, 4, 5, 6. Touch each block once, and the first block again as you SAY: Ava counts again like this: 1, 2, 3, 4, 5, 6, 7. Ava says there are either 6 or 7 blocks, it depends how you count.
   a) Do you agree with Ava?
   b) In pairs, have students explain their thinking. Do they agree with each other? Have them discuss why or why not.

Sample answer: b) I do not agree with Ava, because there cannot be 6 or 7 blocks. It can only be one number. When Ava counted the second time, she counted the first block twice, once at the beginning and once at the end. When you count blocks, you only count each block once.

NOTE: For part b), encourage partners to ask questions to understand and challenge each other’s thinking (MP.3) and use of math words (MP.6)—see p. A-33 for sample sentence and question stems to guide students.

(MP.4) 3. Sal has 4 red blocks. He has 1 blue block. How many blocks does Sal have?

Sample solutions:
   • I used 4 red blocks and 1 blue block. To count all of them, I just started counting from 4. Sal has 5 blocks.
   • I know the next number after 4 is 5. So one more than 4 is 5. So Sal has 5 blocks.
Bicycles and Wheels
Light and Dark Circles and Half Circles
Tricycles and Handlebars
Comparing Numbers Template

[Diagram with two columns of boxes to be filled with items]
# Consecutive and Non-Consecutive Pairs

## Consecutive Pairs

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Number Cards (9)

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Number Cards (10)

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Picture Cards (I)

- Insect
- Apple
- Balloon
- Bug
- Bird
- Broccoli
- Rabbit
- Cherry
- Flip Flop
- Flower
- Cat
- Ladybug
- Leaf
- Mug
- Music Note
- Penguin
- Sneaker
- Snail
- Soccer Ball
- Strawberry
- Tomato
## Picture Cards (2)

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<td><img src="rabbit2.png" alt="Rabbit" /></td>
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<td>Picture Cards (3)</td>
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</tbody>
</table>
| ![Image of insects](image1)
| ![Image of apples](image2)
| ![Image of balloons](image3) |
| ![Image of rabbits](image4)
| ![Image of cherries](image5)
| ![Image of flip-flops](image6) |
| ![Image of flowers](image7)
| ![Image of hamsters](image8)
| ![Image of beetles](image9) |
| ![Image of leaves](image10)
| ![Image of mugs](image11)
| ![Image of music notes](image12) |
| ![Image of penguins](image13)
| ![Image of sneakers](image14)
| ![Image of snails](image15) |
| ![Image of soccer balls](image16)
| ![Image of strawberries](image17)
<p>| <img src="image18" alt="Image of tomatoes" /> |</p>
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### Picture Cards (5)

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Picture Cards (9)
Number Cards 0 to 5

2 5

- 4

0 3
Number Cards 6 to 10

8
7
6
9
10
Matching Template
Number Charts to 5

1 2 3 4 5
1 2 3 4 5
1 2 3 4 5

4
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Number Charts to 10

1 2 3 4 5 6 7 8 9 10
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3-Part Spinner

☐ Use a pencil and a paper clip.
☐ Hold the paper clip with the pencil tip in the center.
☐ Spin the paper clip.

[Diagram of a 3-part spinner with sections labeled 1, 2, and 3]