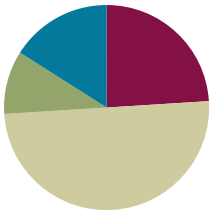
Lesson 21

Objective: Represent subtraction story problems using objects, drawings, expressions, and equations.

Suggested Lesson Structure



Fluency Practice	(12 minutes)
Application Problem	(5 minutes)
Concept Development	(25 minutes)
Student Debrief	(8 minutes)
Total Time	**(50 minutes)**

Fluency Practice (12 minutes)

- Take Away 1 **K.OA.1** (3 minutes)
- Roll and Show 1 Less **K.CC.4c** (4 minutes)
- Hide and See **K.OA.1** (5 minutes)

Take Away 1 (3 minutes)

Note: Students begin to use subtraction sentences and their new *take away* language in the familiar context of *1 less*.

T: Show me 3 fingers the Math Way.
S: (Hold up the left pinky, left ring finger, and the left middle finger to show 3 fingers the Math Way.)
T: Now, take away 1.
S: (Put down the left middle finger so that only the left pinky and left ring finger remain, showing 2 the Math Way.)
T: How many fingers are you showing me now?
S: 2.
T: Say the number sentence after me. 3 take away 1 is 2.

Continue to take away 1 from numbers 1–5. (Show 0 as a closed fist.) Avoid showing students the finger combinations. Some students may still need to count all of the fingers each time. Allow time to do so, but invite students to share more efficient strategies.

Roll and Show 1 Less (4 minutes)

Materials: (S) Dice (with the 6-dot side covered as a scaffold or uncovered as an extension)

Note: Students begin to use subtraction sentences and their new *take away* language in the familiar context of *1 less*.

1. Partner A rolls the die (or dice).
2. Both partners count the dots.
3. Partner B takes away 1 and shows that many fingers the Math Way and says, "4 take away 1 is 3."
4. Partner A verifies that the number is 1 less.
5. Switch roles and play again.

Remind students that if they should roll a 1, they can show 1 less by indicating 0 as a closed fist. As students get more comfortable with subtraction sentences, they can try to tell about their fingers.

Hide and See (5 minutes)

Materials: (S) 5 linking cubes

T: Show me 2 cubes.
S: 1, 2.
T: Hide 1 behind your back. How many can you see?
S: 1.
T: Put them back together. How many cubes do you have?
S: 2.
T: Say the number sentence with me. 2 take away 1 is 1.

Repeat using the following possible sequence: 3 – 1, 4 – 1, 5 – 1, 5 – 2, 4 – 2, 3 – 2, 4 – 3, 5 – 3, and 5 – 4.

Application Problem (5 minutes)

Materials: (S) Personal white board or pencil and paper

5 little green frogs were sitting on the side of the pond. Draw the frogs.

It was so hot that 2 of the froggies decided to go for a swim! Cross out the frogs in your picture to show the ones who hopped into the pond. How many frogs were still by the side of the pond?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide independent practice time using interactive technology to students who are working below grade level and still having difficulty solving take away problems.

Talk to your partner about the story. How can you write about your story in a number sentence?

Note: Talking with a partner about the work from yesterday and thinking about representing stories with numbers serves as an anticipatory set for today's lesson. Again, circulate to see which students might benefit from more extensive work with manipulatives during this topic.

Concept Development (25 minutes)

Materials: (S) 5 linking cubes or other counters, personal white board

T: Take out your linking cubes. Let's pretend that your cubes are all little frogs sitting by the edge of a pond, just like you did in your picture earlier. Show 5 frogs. Now, take 2 of the cubes away to show the frogs that decided to take a swim. How many frogs are left?

S: 3.

T: Let's write our story as a take away number sentence like we did yesterday. Which number should I write first?

S: 5. → You need to tell first about how many frogs you started with.

T: So, I will write 5. I will write the (–) sign to show that we are taking something away. (Demonstrate.) What should I write next?

S: 2. You need to show how many went away!

T: Okay. 5 – 2. Now what do I do?

S: Now you write how many are left at the end.
→ You need to show the 3 that are left.
→ Don't forget the *equals*!

T: (Demonstrate.) 5 – 2 = 3. Read the number sentence with me.

S: 5 take away 2 equals 3.

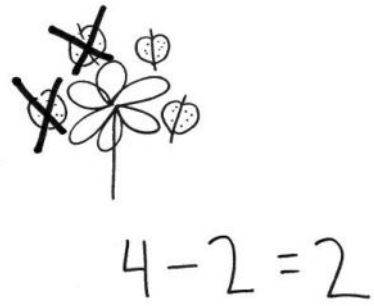
NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Support English language learners by providing a visual for the math they need to learn and use. Post a visual that combines the "5 take away 2 is 3" with "5 – 2 = 3" right under it with a picture of 5 cubes with 2 crossed out. Point to the visual while teaching. This helps students bridge the language gap and follow the lesson.

Repeat the exercise and translation into an equation several times using the cubes and different subtrahends.

T: Put your cubes away now. It is time to draw. Listen to my story, and make a picture.

T: There were 4 butterflies on a flower. 2 of the butterflies left to go to another flower. How many butterflies were left? Draw the 4 butterflies. (Allow time for drawing.) How should we show that 2 butterflies went away?



S: Cross them out.

T: How many butterflies are still on the flower? Count the butterflies that are left in your picture.

S: There are still 2.

T: Tell me how to write the number sentence about our story. Let's write it together.

S: 4 butterflies take away 2 butterflies leaves 2 butterflies. 4 – 2 = 2.

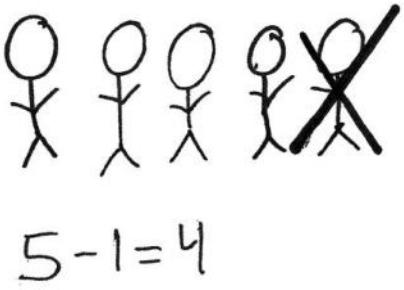
T: Hold up your board, so I can see your number sentence. (Check for understanding.)

T: Erase your board. Listen to my next story.

T: 5 children were playing in the park. 1 child had to go home for dinner. How many children were still playing in the park?

T: This time, I want you to draw the children and show what happened on your own. Write the number sentence. (Allow time for drawing.) Talk to your partner about your picture and your number sentence.

MP.4



Allow time for discussion. Circulate to check for understanding, and encourage use of the cubes as a concrete aid for those students who might need additional support to model the story.

T: Would anyone like to share her number sentence with the class so that I may write it on the board?

S: 5 – 1 = 4. (Write the sentence on the board.)

T: Did anyone do it in a different way?

Allow time for discussion to ensure that students understand the correct placements of the minuend, subtrahend, and difference. Guide them to see that, unlike with the addition number sentences, there is less flexibility with subtraction. If a student should write 4 = 5 – 1, acknowledge the correct equation.

T: Great job! Let's do some more of this in our Problem Set.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (8 minutes)

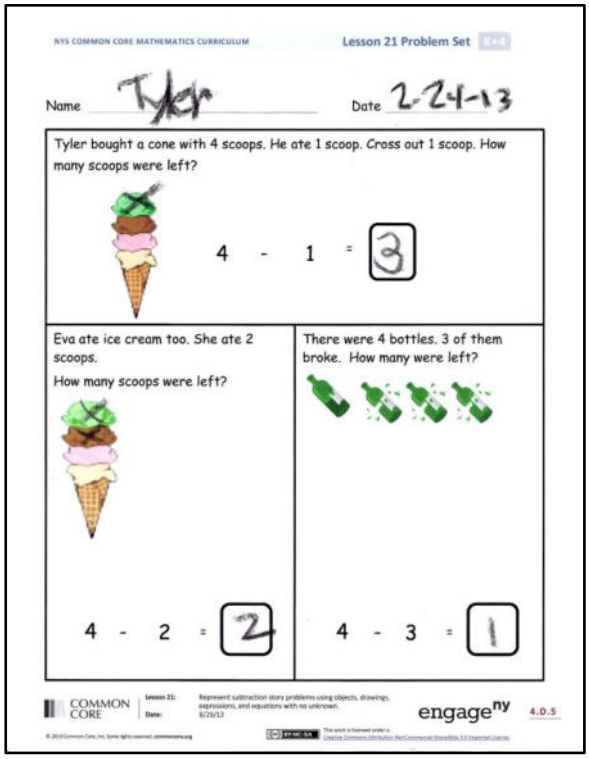
Lesson Objective: Represent subtraction story problems using objects, drawings, expressions, and equations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did you know which number to write first in your number sentences today?
- How did you know what to write next?


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 21 Problem Set K•4

Name Tyler Date 2-24-13

Tyler bought a cone with 4 scoops. He ate 1 scoop. Cross out 1 scoop. How many scoops were left?

4 - 1 = 3

Eva ate ice cream too. She ate 2 scoops.
How many scoops were left?

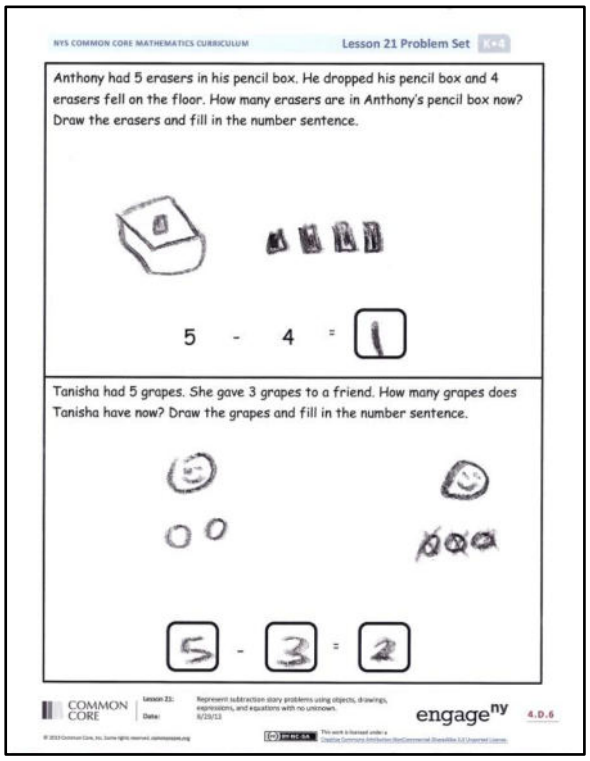
4 - 2 = 2

There were 4 bottles. 3 of them broke. How many were left?

4 - 3 = 1

COMMON CORE Lesson 21: Date: Represent subtraction story problems using objects, drawings, expressions, and equations with no unknown. 6/20/13 engage^ny 4.D.5

- How did you find the last number in your number sentence?
- How did your pictures help you to write your number sentences?
- Were there different ways to write the number sentences about your stories?



NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 21 Problem Set K•4

Anthony had 5 erasers in his pencil box. He dropped his pencil box and 4 erasers fell on the floor. How many erasers are in Anthony's pencil box now? Draw the erasers and fill in the number sentence.

5 - 4 = 1

Tanisha had 5 grapes. She gave 3 grapes to a friend. How many grapes does Tanisha have now? Draw the grapes and fill in the number sentence.

5 - 3 = 2

COMMON CORE Lesson 21: Date: Represent subtraction story problems using objects, drawings, expressions, and equations with no unknown. 6/19/13 engage^ny 4.D.6

Name _____ Date _____

Tyler bought a cone with 4 scoops. He ate 1 scoop. Cross out 1 scoop. How many scoops were left?

4 - 1 = ☐

Eva ate ice cream, too. She ate 2 scoops. How many scoops were left?

4 - 2 = ☐

There were 4 bottles. 3 of them broke. How many bottles were left?

4 - 3 = ☐

Anthony had 5 erasers in his pencil box. He dropped his pencil box, and 4 erasers fell on the floor. How many erasers are in Anthony's pencil box now? Draw the erasers, and fill in the number sentence.

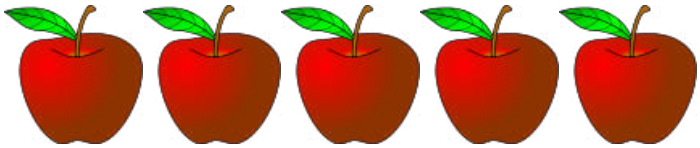
5 - 4 = ☐

Tanisha had 5 grapes. She gave 3 grapes to a friend. How many grapes does Tanisha have now? Draw the grapes, and fill in the number sentence.

☐ - ☐ = ☐

Name _____ Date _____

There were 5 apples. Bill ate 1. Cross out the apple he ate. How many apples were left? Fill in the boxes.



5 take away 1 is ☐

5 - 1 = ☐

There were 5 oranges. Pat took 2. Draw the oranges. Cross out the 2 she took. How many oranges were left? Fill in the boxes.

5 take away 2 is ☐

☐ - ☐ = ☐