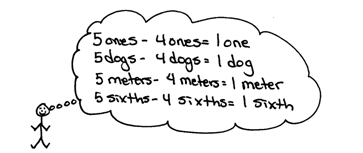
Lesson 16

Target: I can add and subtract two fractions with the same units using visual models.

Concept Development (33 minutes)

Materials: (S) Personal white board, blank number lines (Template)

Problem 1: Solve for the difference using unit language and a number line.

T: (Project 5 – 4.) Solve. Say the number sentence using units of ones.

S: 5 ones – 4 ones = 1 one.

T: Say the number sentence if the unit is dogs.

S: 5 dogs – 4 dogs = 1 dog.

|  |  |
| --- | --- |
|  | NOTES ON  MULTIPLE MEANS  OF REPRESENTATION: |
| Be sure to articulate the ending digraph */th/* to distinguish *six* from *sixth* for English language learners.Coupling spoken expressions with words or models may also improve student comprehension. For example, write out *5 sixths – 4 sixths = 1 sixth.* | |

T: Say the number sentence if the unit is meters.

S: 5 meters – 4 meters = 1 meter.

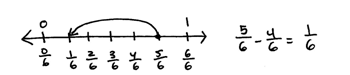
T: Say the number sentence if the unit is sixths.

S: 5 sixths – 4 sixths = 1 sixth.

T: Let’s show that 5 sixths – 4 sixths = 1 sixth.

T: (Project a number line with endpoints 0 and 1, partitioned into sixths.) Make tick marks on the first number line on your Template to make a number line with endpoints 0 and 1 above the number line. Partition the number line into sixths. (See the illustration on the next page.)

T: Draw a point at 5 sixths. Put the tip of your pencil on the point. Count backward to subtract 4 sixths.



T: Move your pencil and count back with me as we subtract.

S: 4 sixths, 3 sixths, 2 sixths, 1 sixth!

T: Draw one arrow above the number line to model – . (Demonstrate.) Tell me the subtraction sentence.

S: .

Repeat with – .

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| --- | --- |
|  | NOTES ON  MULTIPLE MEANS  OF ENGAGEMENT: |
| Students working above grade level and others may present alternative subtraction strategies, such as counting up rather than counting down to solve . Though not introduced in this lesson, the appropriate use of these strategies is desirable and is introduced later in the module. | |

T: Solve for 7 sixths – 2 sixths. Work with a partner.   
Use the language of units and subtraction.

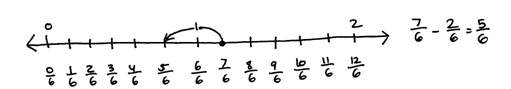
S: 7 sixths – 2 sixths = 5 sixths. 🡪 I know 7 ones minus   
2 ones is 5 ones. I can subtract sixths like I subtract ones.

T: Discuss with your partner how to draw a number line to represent this problem.

S: We partition it like the first problem and draw the arrow to subtract. 🡪 But is more than 1 whole.   
6 sixths is equal to 1. We have 7 sixths. 🡪 Let’s make the number line with endpoints 0 and 2.

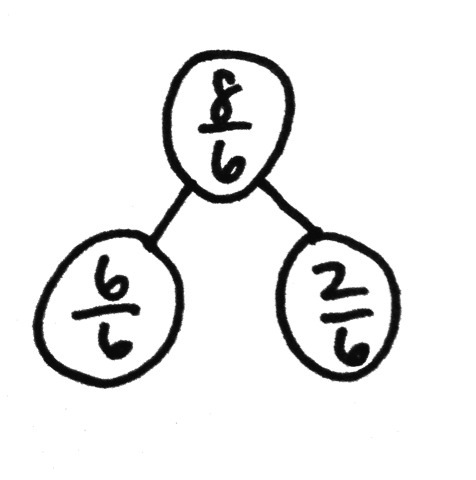
T: Label the endpoints 0 and 2. Partition the number line into sixths. Subtract.

S: On the number line, we started at 7 sixths and then went back 2 sixths. The answer is 5 sixths.   
🡪 .



Repeat with .

Problem 2: Decompose to record a difference greater than 1 as a mixed number.

T: (Display 10 sixths – 2 sixths.) Solve in unit form, and write a number sentence using fractions.

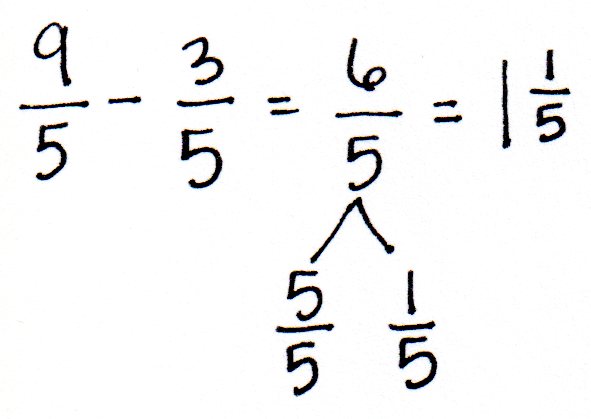
S: (Write 10 sixths – 2 sixths = 8 sixths and .)

T: Use a number bond to decompose into the whole and fractional parts.

S: (Draw a number bond as pictured to the right.)

T: is the same as…?

S: 1 whole.

T: We can rename as a **mixed number**, , using a whole number   
and fractional parts.

Repeat with 9 fifths – 3 fifths.

Problem 3: Solve for the sum using unit language and a number line.

T: Look back at the first example. (Point to the number line representing 5 sixths – 4 sixths.) Put your finger on 1 sixth. To 1 sixth, let’s add the 4 sixths that we took away.

T: Count as we add. 1 sixth, 2 sixths, 3 sixths, 4 sixths. Where are we now?

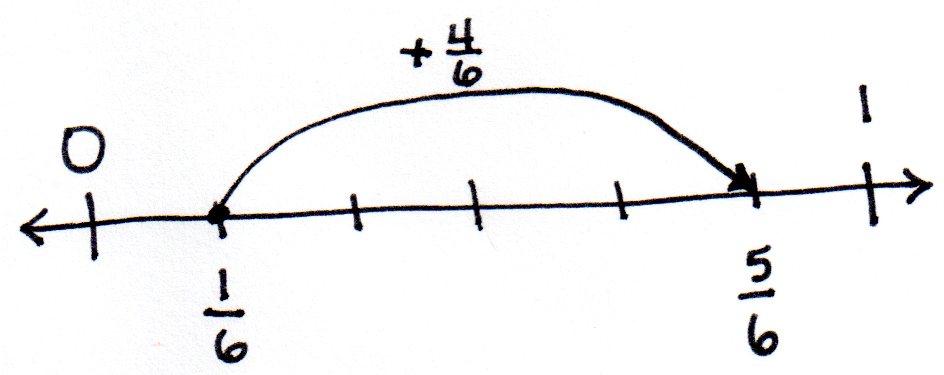
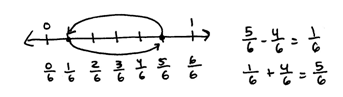
S: 5 sixths.

T: What is 1 sixth plus 4 sixths?

S: 5 sixths.

T: Let’s show that on the number line. (Model with students as shown to the right.)

T: 1 one plus 4 ones is…?



S: 5 ones.

T: 1 apple plus 4 apples is…?

S: 5 apples.

T: 1 sixth plus 4 sixths equals…?

S: 5 sixths.

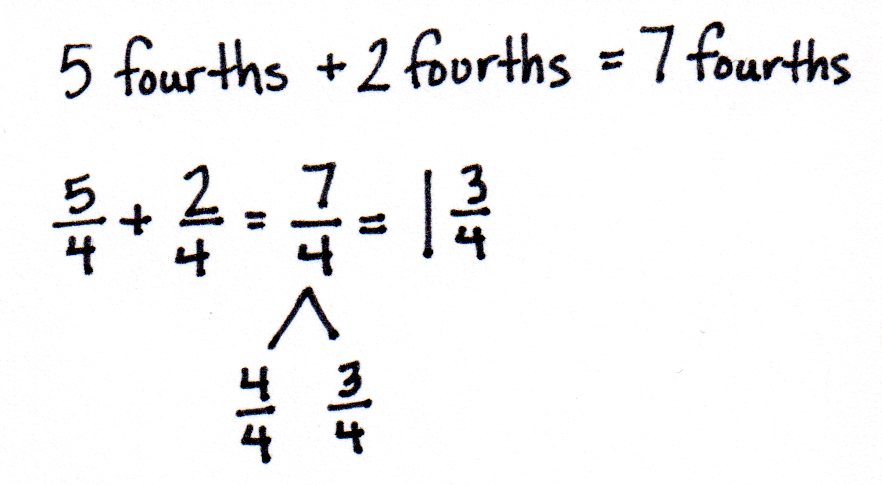
Repeat with

Problem 4: Decompose to record a sum greater than 1 as a mixed number.

T: (Display 5 fourths + 2 fourths.) Solve in unit form, and write a number sentence using fractions.

S: (Write 5 fourths + 2 fourths = 7 fourths and .)

T: Use a number bond to decompose into the whole and some parts.

S: (Draw a number bond as pictured to the right.)

T: is the same as…?

S: 1 whole.

T: We can rename as a mixed number, .

Name Date

1. Solve.

|  |  |
| --- | --- |
| 1. 3 fifths + 1 fifth = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. 5 tenths + 3 tenths = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. 3 halves – 2 halves = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. 6 fourths – 3 fourths = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Solve.
2. Solve. Use a number bond to show how to convert the difference to a mixed number. Problem (a) has been completed for you.



Name Date [[1]](#footnote-1)

1. blank number lines [↑](#footnote-ref-1)