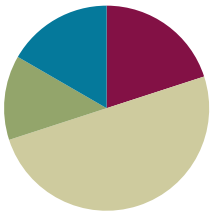
Lesson 28

Objective: Compare fractions with the same numerator pictorially.

Related Topics: More Lesson Plans for the Common Core Math

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problems	(8 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (12 minutes)

- Sprint: Subtract by 8 **2.NBT.5** (8 minutes)
- Recognize Equal Fractions **3.NF.3b** (4 minutes)

Sprint: Subtract by 8 (8 minutes)

Materials: (S) Subtract by 8 Sprint

Recognize Equal Fractions (4 minutes)

Materials: (S) Personal white board

T: (Project a tape diagram partitioned into 2 equal units with the first unit shaded.) Say the fraction that's shaded.

S: 1 half.

T: (Write $\frac{1}{2}$ to the side of the tape diagram. Project a tape diagram partitioned into 4 equal, unshaded units directly below the first tape diagram.) Say the unit of this fraction.

S: Fourths.

T: I'm going to start shading in fourths. Tell me to stop when I've shaded enough fourths to make 1 half. (Shade 2 fourths.)

S: Stop!

T: (Write $\frac{1}{2} = \frac{\ }{4}$ to the side of the tape diagram.) 1 half is the same as how many fourths?

S: 2 fourths.

T: (Write $\frac{1}{2} = \frac{2}{4}$.)

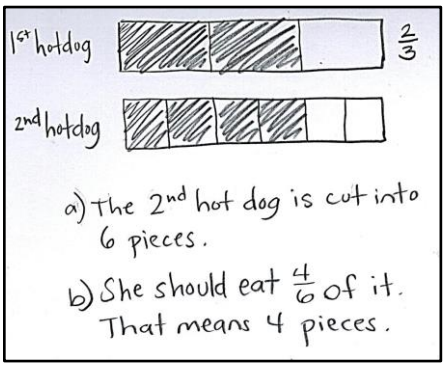
Continue process for $\frac{1}{3} = \frac{\_}{9}$ and $\frac{6}{8} = \frac{\_}{4}$.

Application Problem (8 minutes)

LaTonya has 2 equal sized hotdogs. She cut the first one into thirds at lunch. Later she cut the second hotdog to make double the number of pieces. Draw a model of LaTonya's hotdogs.

a. How many pieces is the second hotdog cut into?

b. If she wants to eat $\frac{2}{3}$ of the second hotdog, how many pieces should she eat?



Concept Development (30 minutes)

Materials: (S) Work from application problem, personal white boards

T: Look again at your models of LaTonya's hotdogs. Let's change the problem slightly. What if LaTonya eats 2 pieces of each hotdog? Figure out what fraction of each hotdog she eats.

S: (Students work.) She eats $\frac{2}{3}$ of the first one and $\frac{2}{6}$ of the second one.

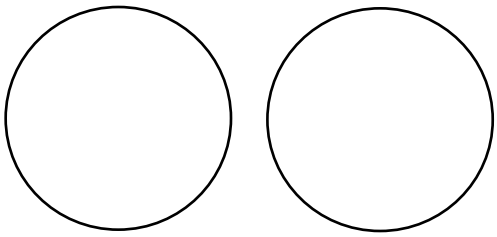
T: Did LaTonya eat the same amount of the first hotdog and the second hotdog?

S: (Use models for help.) No.

T: But she ate 2 pieces of each hotdog. Why is the amount she ate different?

S: The number of pieces is the same, but the size of each piece is different. → Just like we saw yesterday, the more you cut up a whole, the smaller the pieces get. → So eating 2 pieces of thirds is more hotdog than 2 pieces of sixths.

(Project or draw the image below.)



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Give students below grade level the option of rectangular pizzas (rather than circles) to ease the task of partitioning.

MP.2

T: Draw my pizzas on your personal white board.

S: (Draw shapes.)

T: Estimate to partition both pizzas into fourths.

S: (Students partition.)

T: Partition the second pizza to double the number of

units.

S: (Students partition.)

T: What units do we have?

S: Fourths and eighths.

T: Shade in 3 fourths and 3 eighths.

S: (Shade.)

MP.2

T: Which shaded portion would you rather eat? The fourths or the eighths? Why?

S: I'd rather eat the fourths because it's way more pizza. → I'd rather eat the eighths because I'm not that hungry, and it's less.

T: But both choices are 3 pieces. Aren't they equivalent?

S: No. You can see fourths are bigger. → We know because the more times you cut the whole the smaller the pieces get. → So eighths are tiny compared to fourths! → The number of pieces is the same but the sizes of the pieces are different, so the shaded amounts are not equivalent.

If necessary, continue with other examples varying the pictorial models.

T: Let's work in pairs to play a comparison game. Partner A, draw a whole and shade a fraction of the whole. Label the shaded part.

S: (Partner A draws.)

T: Partner B, draw a fraction that is less. Use the same whole, and the same number of shaded parts. Label the shaded parts.

S: (Draws.)

T: Partner A, check your friend's work.

S: (Partner A checks and helps make any corrections necessary.)

T: Now switch who draws first. I will say 'greater than' or 'less than.'

(Play several rounds.)

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

As students play a comparison game, facilitate peer-to-peer talk for ELLs with sentence frames, such as:

- "I partitioned ____ (unit fractions). I shaded ___ (number of) ____ (unit fraction)."
- "I drew ___ (unit fraction), too. I shaded ___ (number of) ____ (unit fractions.) ____ is less than ____."

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Extend page one of the Problem Set for students above grade level, using their knowledge of equivalencies. Ask, "If 2 thirds is greater than 2 fifths, use equivalent fractions to name the same comparison. For example, 4 sixths is greater than 2 fifths."

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students solve these problems using the RDW approach used for Application Problems.

Student Debrief (10 minutes)

Lesson Objective: Compare fractions with the same numerator pictorially.

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

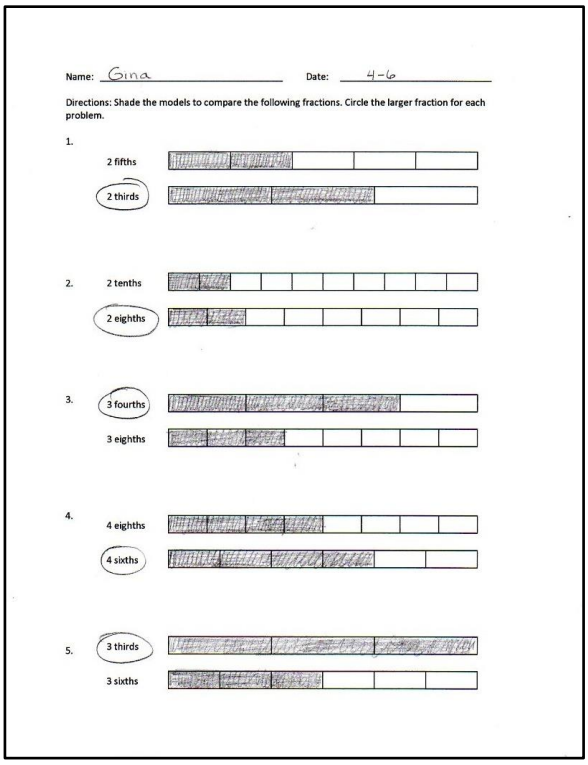
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set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

You may choose to use any combination of the questions below to lead the discussion.

- Look at your answers for Problems 7 and 8 on the Problem Set. Is 2 parts always equal to 2 parts? Why or why not?
- If you only know the number of shaded parts, can you tell if fractions are equivalent? Why or why not?

Exit Ticket (3 minutes)

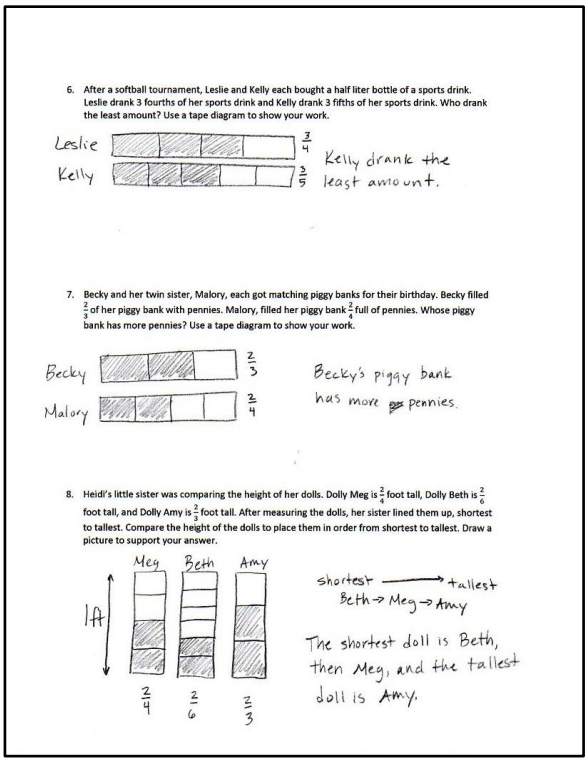
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help you assess the students' understanding of the concepts that were presented in the lesson today and plan more effectively for future lessons. You may read the questions aloud to the students.



Name: Gina Date: 4-6

Directions: Shade the models to compare the following fractions. Circle the larger fraction for each problem.

1. 2 fifths / (2 thirds)
2. 2 tenths / (2 eighths)
3. (3 fourths) / 3 eighths
4. 4 eighths / (4 sixths)
5. (3 thirds) / 3 sixths



6. After a softball tournament, Leslie and Kelly each bought a half liter bottle of a sports drink. Leslie drank 3 fourths of her sports drink and Kelly drank 3 fifths of her sports drink. Who drank the least amount? Use a tape diagram to show your work.

Leslie $\frac{3}{4}$
Kelly $\frac{3}{5}$
Kelly drank the least amount.

7. Becky and her twin sister, Malory, each got matching piggy banks for their birthday. Becky filled $\frac{2}{3}$ of her piggy bank with pennies. Malory, filled her piggy bank $\frac{2}{4}$ full of pennies. Whose piggy bank has more pennies? Use a tape diagram to show your work.

Becky $\frac{2}{3}$
Malory $\frac{2}{4}$
Becky's piggy bank has more pennies.

8. Heidi's little sister was comparing the height of her dolls. Dolly Meg is $\frac{2}{4}$ foot tall, Dolly Beth is $\frac{2}{6}$ foot tall, and Dolly Amy is $\frac{2}{3}$ foot tall. After measuring the dolls, her sister lined them up, shortest to tallest. Compare the height of the dolls to place them in order from shortest to tallest. Draw a picture to support your answer.

Meg Beth Amy
1ft
$\frac{2}{4}$ $\frac{2}{6}$ $\frac{2}{3}$
shortest → tallest
Beth → Meg → Amy
The shortest doll is Beth, then Meg, and the tallest doll is Amy.

A

Correct _____

Subtract.

1	18 - 8 =		23	74 - 8 =	
2	8 - 8 =		24	15 - 8 =	
3	28 - 8 =		25	25 - 8 =	
4	9 - 8 =		26	35 - 8 =	
5	19 - 8 =		27	85 - 8 =	
6	39 - 8 =		28	65 - 8 =	
7	10 - 8 =		29	16 - 8 =	
8	20 - 8 =		30	26 - 8 =	
9	50 - 8 =		31	36 - 8 =	
10	11 - 8 =		32	96 - 8 =	
11	21 - 8 =		33	76 - 8 =	
12	71 - 8 =		34	17 - 8 =	
13	12 - 8 =		35	27 - 8 =	
14	22 - 8 =		36	37 - 8 =	
15	82 - 8 =		37	87 - 8 =	
16	13 - 8 =		38	67 - 8 =	
17	23 - 8 =		39	70 - 8 =	
18	83 - 8 =		40	62 - 8 =	
19	14 - 8 =		41	84 - 8 =	
20	24 - 8 =		42	66 - 8 =	
21	34 - 8 =		43	91 - 8 =	
22	54 - 8 =		44	75 - 8 =	

B Improvement _____ # Correct _____

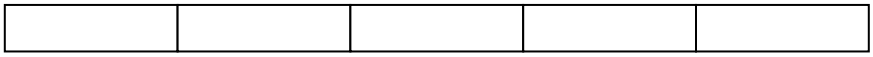
Subtract.

1	8 - 8 =		23	94 - 8 =	
2	18 - 8 =		24	15 - 8 =	
3	28 - 8 =		25	25 - 8 =	
4	9 - 8 =		26	35 - 8 =	
5	19 - 8 =		27	95 - 8 =	
6	69 - 8 =		28	75 - 8 =	
7	10 - 8 =		29	16 - 8 =	
8	20 - 8 =		30	26 - 8 =	
9	60 - 8 =		31	36 - 8 =	
10	11 - 8 =		32	66 - 8 =	
11	21 - 8 =		33	46 - 8 =	
12	81 - 8 =		34	17 - 8 =	
13	12 - 8 =		35	27 - 8 =	
14	22 - 8 =		36	37 - 8 =	
15	52 - 8 =		37	97 - 8 =	
16	13 - 8 =		38	77 - 8 =	
17	23 - 8 =		39	80 - 8 =	
18	93 - 8 =		40	71 - 8 =	
19	14 - 8 =		41	53 - 8 =	
20	24 - 8 =		42	45 - 8 =	
21	34 - 8 =		43	87 - 8 =	
22	74 - 8 =		44	54 - 8 =	

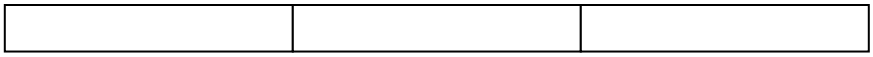
Name _____ Date _____

Directions: Shade the models to compare the following fractions. Circle the larger fraction for each problem.

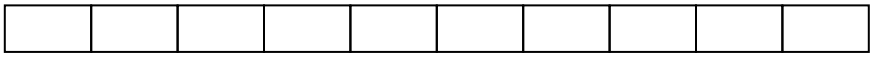
1. 2 fifths



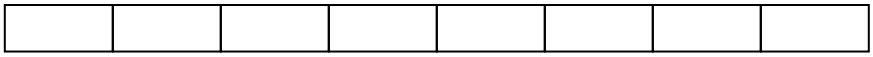
2 thirds



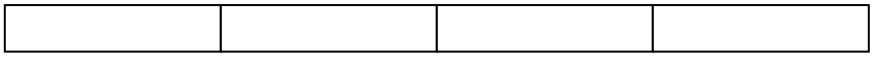
2. 2 tenths



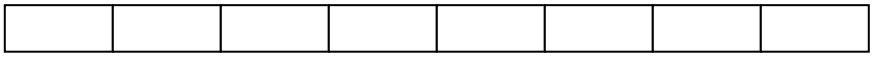
2 eighths



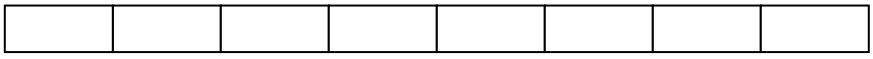
3. 3 fourths



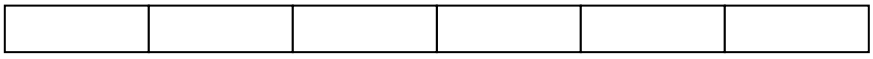
3 eighths



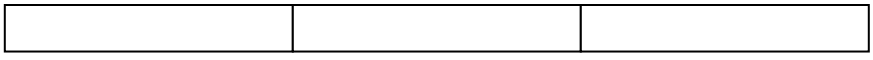
4. 4 eighths



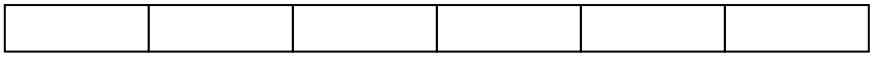
4 sixths



5. 3 thirds



3 sixths



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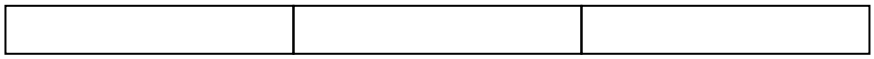
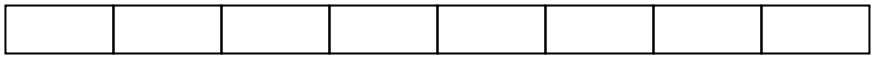
Name _____ Date _____

1. Directions: Shade the models to compare the following fractions.

2 thirds 

2 eighths 

a. Which is larger, 2 thirds or 2 eighths? Why? Use words to explain.

2. Draw a model for each fraction and circle the smaller fraction.

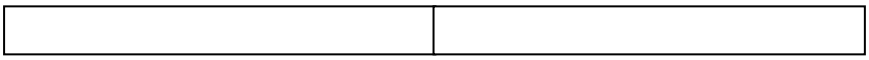
3 sevenths

3 fourths

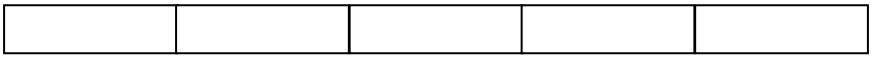
Name _____ Date _____

Directions: Shade the models to compare the following fractions. Circle the larger fraction for each problem.

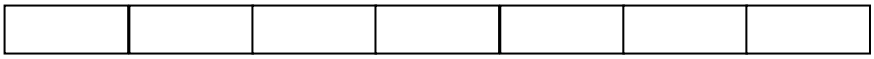
1. 1 half



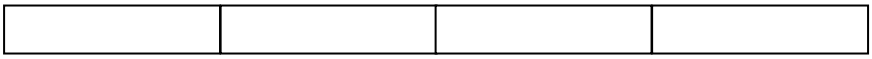
1 fifth



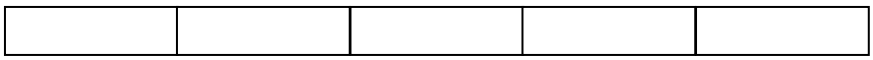
2. 2 sevenths



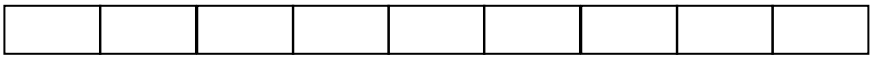
2 fourths



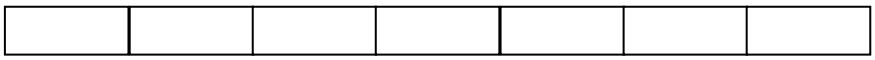
3. 4 fifths



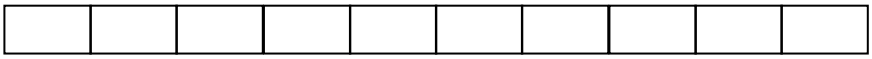
4 ninths



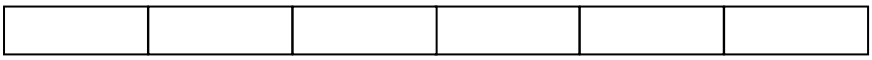
4. 5 sevenths



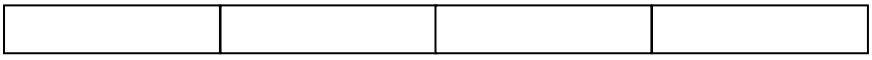
5 tenths



5. 4 sixths



4 fourths



6. In science Saleem and Edwin used an inch ruler to measure the length of each of their small caterpillars. Saleem's caterpillar measured 3 fourths of an inch, and Edwin's caterpillar measured 3 eighths of an inch. Whose caterpillar is longer? Use a tape diagram to show your work.

7. Lily and Jasmine are baking the same size chocolate cake. Lily put $\frac{5}{10}$ of a cup of sugar into her cake, and Jasmine put $\frac{5}{6}$ of a cup of sugar into her cake. Who used less sugar? Use a tape diagram to show your work.