

## 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

Name \_\_\_\_\_

Date \_\_\_\_\_

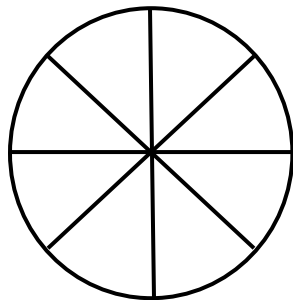
**Standard:**

18.NF.1 explain why a fraction  $a/b$  is equivalent to a fraction  $(n \times a/n \times b)$  by using visual fraction models with attention to how the number and size of the parts differ even though the two fractions themselves are the same size; use this principle to recognize and generate equivalent fractions

19.NF.2 compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as  $1/2$ . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model

1. Shana made a pie. Together she and Ben ate 5 pieces. Which fraction represents the amount eaten? Shade the pie to prove your answer.

- A.  $5/3$
- B.  $5/8$
- C.  $3/5$
- D.  $3/8$



2. Which picture shows  $3/4$ ?

A.



B.



C.



D.



3. A cake is cut into 9 pieces.  $2/3$  of the cake has been eaten. What fraction of the cake is left? Prove.

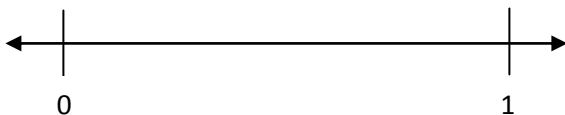
- A.  $3/9$
- B.  $9/9$
- C.  $6/9$
- D.  $4/9$



4. Which of the following is NOT an equivalent fraction for  $1/2$ ?

- A.  $8/12$
- B.  $20/40$
- C.  $5/10$
- D.  $8/16$

5. Plot the following fractions on the number line below:  $\frac{1}{3}$ ,  $\frac{2}{3}$ , and  $\frac{3}{3}$



6. Circle fractions that are more than  $\frac{1}{2}$ .

Put an X on fractions less than  $\frac{1}{2}$ .

- |                |               |               |               |                |               |               |
|----------------|---------------|---------------|---------------|----------------|---------------|---------------|
| $\frac{4}{12}$ | $\frac{7}{9}$ | $\frac{2}{8}$ | $\frac{3}{6}$ | $\frac{8}{10}$ | $\frac{3}{5}$ | $\frac{1}{4}$ |
|----------------|---------------|---------------|---------------|----------------|---------------|---------------|

## 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

Name \_\_\_\_\_

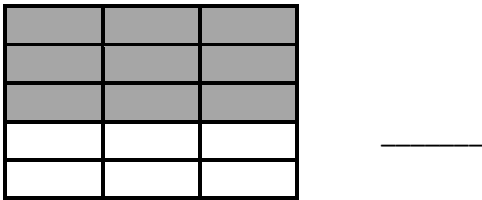
Date \_\_\_\_\_

7. Look at the model below and find the model that shows an equivalent fraction. Then write a fraction for each picture.



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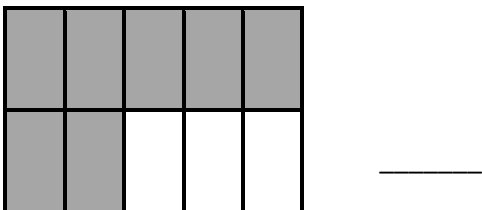
A.



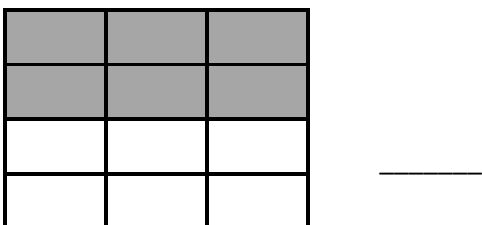
B.



C.

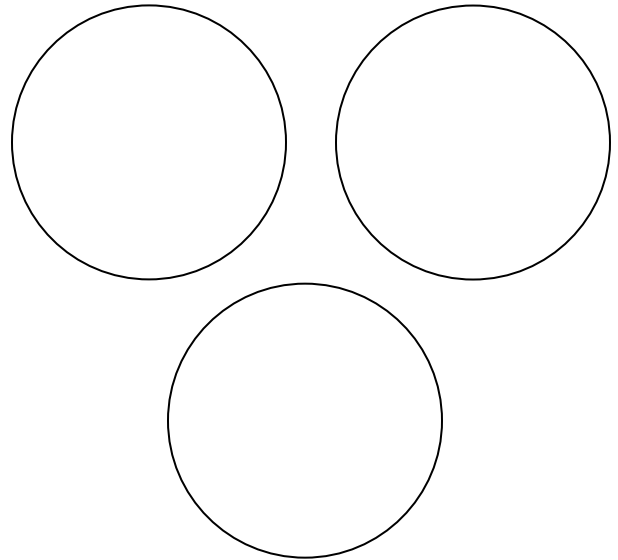


D.



8. Arnie, Kyan, and Vincent each had a pizza and each ate exactly one-fourth of his pizza.

Arnie ate 1 piece, Kyan ate 2 pieces, and Vincent ate 3 pieces. How is this possible? Explain how you got your answer using **pictures** and **words**.




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## 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

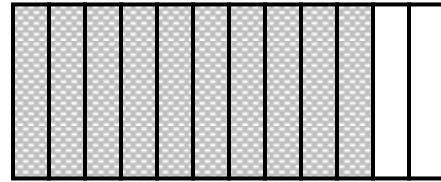
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9. Cameron used 20 colored tiles to make a design in art class.  $\frac{5}{20}$  of her tiles were blue. What is an equivalent fraction for the blue tiles?

- A.  $\frac{1}{2}$                       C.  $\frac{3}{4}$   
 B.  $\frac{10}{20}$                     D.  $\frac{1}{4}$

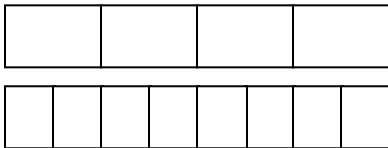
10. The fraction strips show  $\frac{10}{12}$ .



Which is an equivalent fraction?

- A.  $\frac{1}{6}$   
 B.  $\frac{1}{3}$   
 C.  $\frac{2}{3}$   
 D.  $\frac{5}{6}$

11. Which symbol makes this sentence true?  $\frac{3}{4}$  \_\_\_\_\_  $\frac{3}{8}$ .  
 Shade the diagram to prove your answer.



- A. >                      C. =  
 B. <                      D. +

12. Which sentence is **NOT** true?

- a.  $\frac{1}{3} > \frac{1}{6}$   
 b.  $\frac{1}{5} < \frac{1}{8}$   
 c.  $\frac{1}{7} < \frac{1}{2}$   
 d.  $\frac{1}{4} > \frac{1}{9}$

13. Mara was baking cookies. She used  $\frac{3}{8}$  cup of sugar,  $\frac{1}{4}$  cup of oats, and  $\frac{1}{2}$  cup of flour. Write these ingredients in order from least to greatest:

\_\_\_\_\_

Explain your answer using pictures and words.

## 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

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### CHALLENGE:

14. Which fraction is closest to one whole?

- a.  $\frac{2}{3}$                   c.  $\frac{3}{4}$   
 b.  $\frac{7}{8}$                   d.  $\frac{7}{10}$

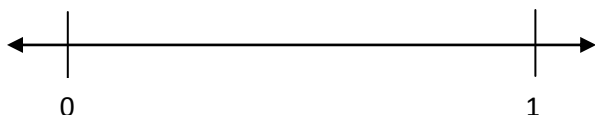
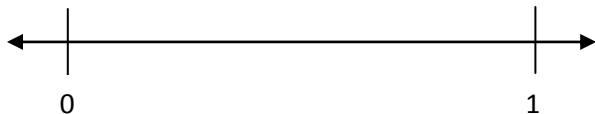
Explain or show how you know.

15. Pia bought a snack size Kit-Kat bar. She wanted it to last a long time, so she cut it into 8 pieces and ate 2 of them. Anna bought a king size Kit-Kat bar. She cut it into 16 pieces and ate 4 of them. Anna says they both ate the same amount because  $\frac{2}{8}$  and  $\frac{4}{16}$  both equal  $\frac{1}{4}$ . Is Anna correct? Use words and pictures to explain how you know.

16. Put these fractions in order from least to greatest:

$\frac{1}{3}$   $\frac{1}{4}$   $\frac{6}{8}$   $\frac{4}{6}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

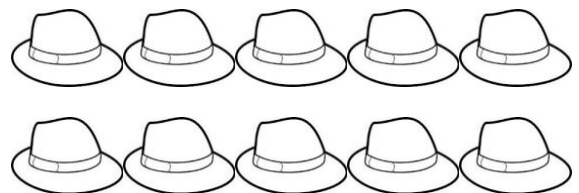
Prove your answer by plotting the fractions on the number lines. Decide which two fractions to plot together on each number line. Label each fraction.



17. Mr. Spivey has 10 hats. Two-fifths are black hats. One-half are brown, and one-tenth is blue. Could any of his hats be white? \_\_\_\_\_

Of which color hat does Mr. Spivey have the most? \_\_\_\_\_

Prove your answer.



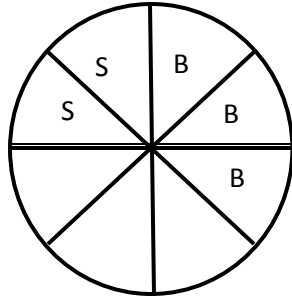
# 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

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## Answer Key

1. A.  $\frac{5}{3}$   
 B.  $\frac{5}{8}$   
 C.  $\frac{3}{5}$   
 D.  $\frac{3}{8}$

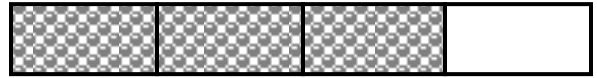


2. Which picture shows  $\frac{3}{4}$ ?

A.

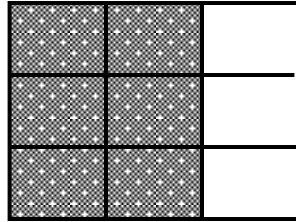
B.

C.



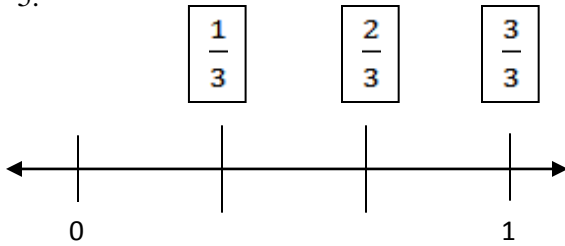
D.

3.  A.  $\frac{3}{9}$   
 B.  $\frac{9}{9}$   
 C.  $\frac{6}{9}$   
 D.  $\frac{4}{9}$



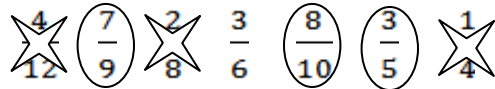
4.  A.  $\frac{8}{12}$   
 B.  $\frac{20}{40}$   
 C.  $\frac{5}{10}$   
 D.  $\frac{8}{16}$

- 5.



6. Circle fractions that are more than  $\frac{1}{2}$ .

Put an X on fractions less than  $\frac{1}{2}$ .



- 7.

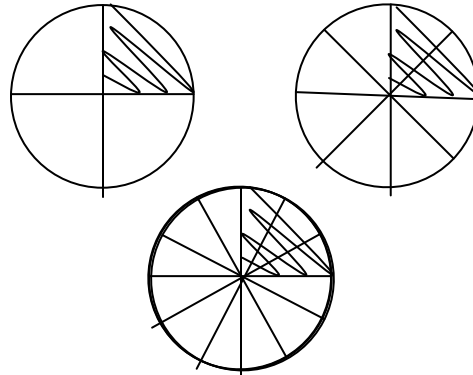


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- A.  $\frac{9}{15}$       C.  $\frac{7}{10}$   
 B.  $\frac{12}{15}$       D.  $\frac{6}{12}$

8. Arnie's pizza was cut into 4 pieces and he ate one. Kyan's pizza was cut into 8 pieces and he ate 2. Vincent's pizza was cut into 12 pieces and he ate 3 of them.



## 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

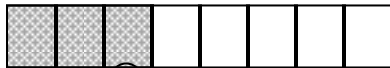
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9.      A.  $\frac{1}{2}$                   C.  $\frac{3}{4}$   
           B.  $\frac{10}{20}$               (D)  $\frac{1}{4}$

10.      A.  $\frac{1}{6}$   
           B.  $\frac{1}{3}$   
           C.  $\frac{2}{3}$   
           (D)  $\frac{5}{6}$

11. Which symbol makes this sentence true?  
 $\frac{3}{4} \underline{\hspace{1cm}} \frac{3}{8}$ . Shade the diagram to prove your answer.



- (A) >                          C. =  
           B. <                          D. +

12. Which sentence is **NOT** true?

a.  $\frac{1}{3} > \frac{1}{6}$

(b)  $\frac{1}{5} < \frac{1}{8}$

c.  $\frac{1}{7} < \frac{1}{2}$

d.  $\frac{1}{4} > \frac{1}{9}$

13. Mara was baking cookies. She used  $\frac{3}{8}$  cup of sugar,  $\frac{1}{4}$  cup of oats, and  $\frac{1}{2}$  cup of flour. Write these ingredients in order from least to greatest:

oats      sugar      flour

Explain your answer using pictures and words.

$\frac{1}{2}$  cup is the most because it takes  $\frac{4}{8}$  and  $\frac{2}{4}$  to equal  $\frac{1}{2}$ , and Mara used only  $\frac{3}{8}$  and  $\frac{1}{4}$ .

$\frac{1}{4}$  cup is the least because  $\frac{1}{4} = \frac{2}{8}$ , so it's less than  $\frac{3}{8}$ .

*Students may draw any diagram...circles, rectangles, or measuring cups to prove their answers.*

## 4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)

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*CHALLENGE: Teachers may use the challenge questions to differentiate instruction. Advanced students may be required to answer them; other students may use the questions during guided reading groups with varying levels of scaffolding*

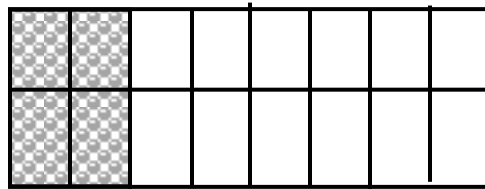
14. a.  $\frac{2}{3}$       c.  $\frac{3}{4}$   
 b.  $\frac{7}{8}$       d.  $\frac{7}{10}$

*One possible explanation: Think about how big the pieces are that are left over... the smaller the left over piece, the closer to one whole. The first 3 fractions have only one piece left over.  $\frac{1}{3}$  is larger than  $\frac{1}{4}$ , which is larger than  $\frac{1}{8}$ .  $\frac{1}{8}$  is the smallest piece, so  $\frac{7}{8}$  is the closest of the first three choices. Between  $\frac{7}{8}$  and  $\frac{7}{10}$ , they both have the same number of pieces. The tenths are smaller pieces, so  $\frac{7}{10}$  is less than  $\frac{7}{8}$ , which makes  $\frac{7}{8}$  closer to the whole.*

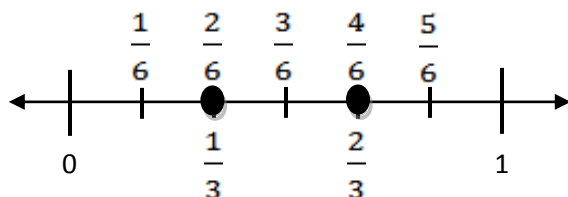
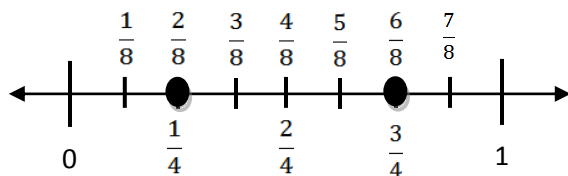
15. *Anna is incorrect. Fractions are only equal if the size of the whole candy bar is the same. Pia's  $\frac{2}{8}$  is very small because it's  $\frac{1}{4}$  of a snack size bar.*



*Anna's  $\frac{4}{16}$  is very large because it's  $\frac{1}{4}$  of a king-sized Kit-Kat bar.*



16.  $\frac{1}{4}, \frac{1}{3}, \frac{4}{6}, \frac{6}{8}$



- 17.

*Possible explanation: (All mathematically correct explanations accepted) There are 10 hats, so 5 are brown because 5 is half of ten. If I circle 5 equal groups, there will be 2 in each group, so two-fifths is 4. 4 hats are black. One of the ten hats is blue.  $5 + 4 + 1 = 10$ . That's all ten tenths of the hats. None of the hats can be white. Mr. Spivey has more brown hats.*

**4<sup>th</sup> Grade Unit 2: Fractions-Equivalent and Comparisons (Form A)**

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Date \_\_\_\_\_