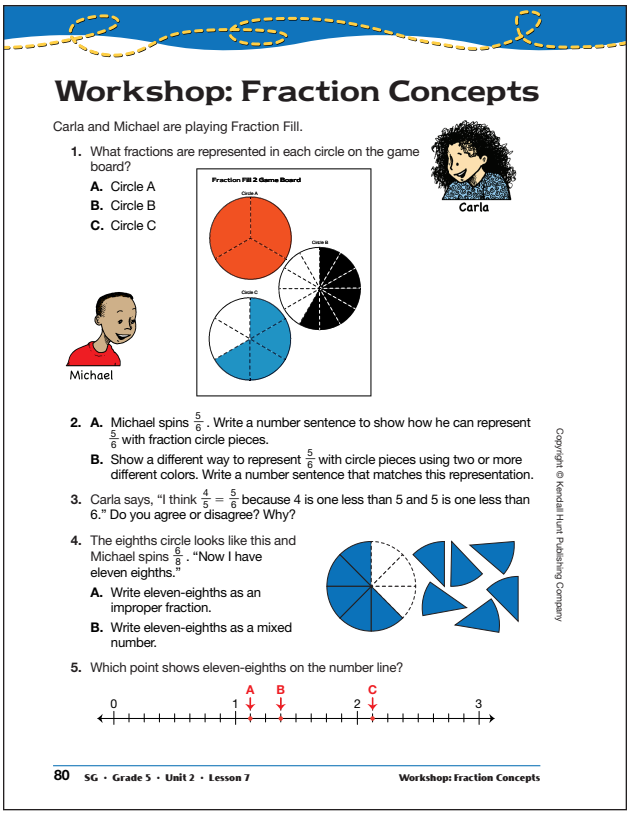

Workshop: Fraction Concepts

Carla and Michael are playing Fraction Fill.

1. What fractions are represented in each circle on the game board?
   - **A.** Circle A
   - **B.** Circle B
   - **C.** Circle C

2. **A.** Michael spins $\frac{5}{6}$. Write a number sentence to show how he can represent $\frac{5}{6}$ with fraction circle pieces.
   B. Show a different way to represent $\frac{5}{6}$ with circle pieces using two or more different colors. Write a number sentence that matches this representation.
3. Carla says, "I think $\frac{4}{5} = \frac{5}{6}$ because 4 is one less than 5 and 5 is one less than 6." Do you agree or disagree? Why?
4. The eighths circle looks like this and Michael spins $\frac{6}{8}$. "Now I have eleven eighths."
   - **A.** Write eleven-eighths as an improper fraction.
   - **B.** Write eleven-eighths as a mixed number.
5. Which point shows eleven-eighths on the number line?

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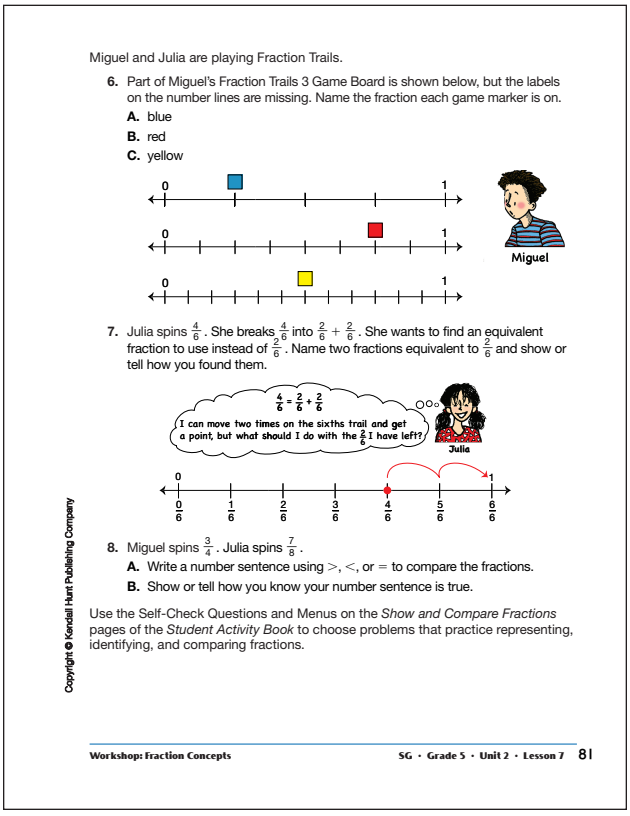

Miguel and Julia are playing Fraction Trails.

6. Part of Miguel's Fraction Trails 3 Game Board is shown below, but the labels on the number lines are missing. Name the fraction each game marker is on.
   - **A.** blue
   - **B.** red
   - **C.** yellow

7. Julia spins $\frac{4}{6}$. She breaks $\frac{4}{6}$ into $\frac{2}{6} + \frac{2}{6}$. She wants to find an equivalent fraction to use instead of $\frac{2}{6}$. Name two fractions equivalent to $\frac{2}{6}$ and show or tell how you found them.

8. Miguel spins $\frac{3}{4}$. Julia spins $\frac{7}{8}$.
   - **A.** Write a number sentence using $>$, $<$, or $=$ to compare the fractions.
   - **B.** Show or tell how you know your number sentence is true.

Use the Self-Check Questions and Menus on the *Show and Compare Fractions* pages of the *Student Activity Book* to choose problems that practice representing, identifying, and comparing fractions.

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Student Guide

Workshop: Fraction Concepts (SG pp. 80–81) Questions 1–8

1. **A.** $\frac{3}{3}$ or 1
   B. $\frac{7}{12}$
   C. $\frac{4}{6}$
2. **A.*** Possible response: 5 aqua pieces; $5 \times \frac{1}{6} = \frac{5}{6}$ or $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{5}{6}$
   B.* Possible response: 3 aqua pieces and 4 black pieces; $\frac{3}{6} + \frac{4}{12} = \frac{5}{6}$
3. * Carla is incorrect. Possible explanation: $\frac{4}{5}$ is not equivalent to $\frac{5}{6}$ because 4 green circle pieces do not cover the same amount of the red circle as 5 aqua pieces.
4. **A.** $\frac{11}{8}$
   B. $1\frac{3}{8}$
5. Point B
6. **A.** $\frac{1}{4}$
   B. $\frac{6}{8}$
   C. $\frac{6}{12}$
7. Possible responses: $\frac{2}{6} \times \frac{2}{2} = \frac{4}{12}$ and $\frac{2}{6} \div \frac{2}{2} = \frac{1}{3}$
8. **A.** $\frac{3}{4} < \frac{7}{8}$
   B. Possible response: I looked on the *Fractions on Number Lines Chart*. $\frac{3}{4}$ is closer to 0 than $\frac{7}{8}$ is. Also, if I multiply $\frac{3}{4}$ by $\frac{2}{2}$, I get an equivalent fraction of $\frac{6}{8}$. $\frac{3}{4} = \frac{6}{8}$ and $\frac{6}{8} < \frac{7}{8}$, so $\frac{3}{4} < \frac{7}{8}$.

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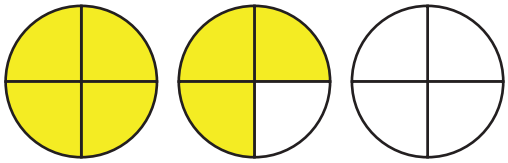
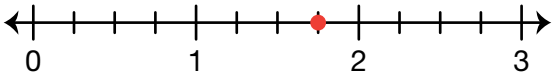
***Answers and/or discussion are included in the lesson.**

Student Activity Book

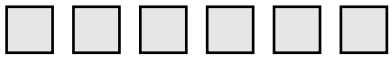
Show and Compare Fractions (SAB pp. 61–88)
Questions 1–46

1. improper fraction: $\frac{7}{4}$; mixed number; $1\frac{3}{4}$;

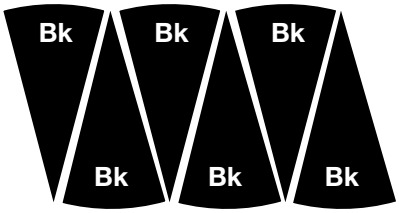


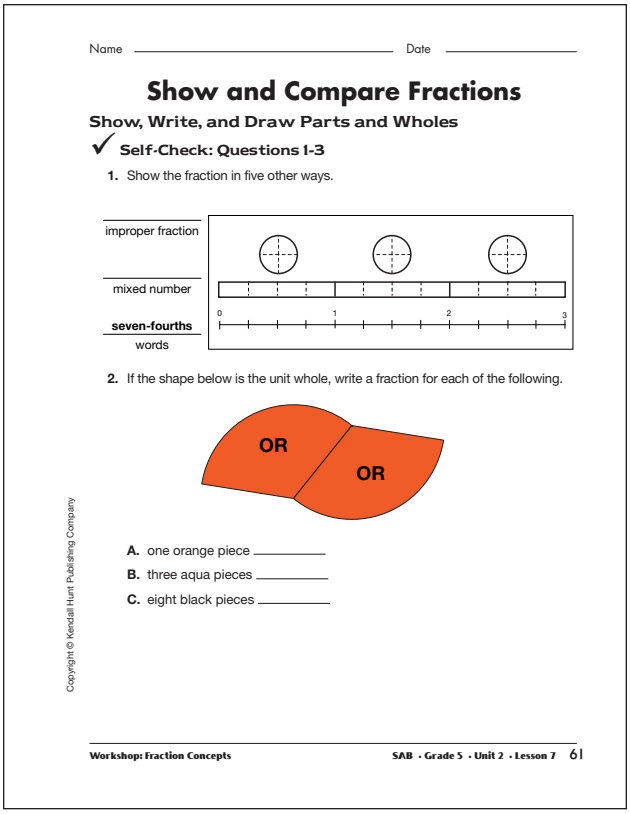


2. A. $\frac{1}{2}$
   B. $\frac{3}{4}$
   C. $\frac{8}{8}$ or 1
3. A.



B. Possible response:





Name _____ Date _____

Show and Compare Fractions

Show, Write, and Draw Parts and Wholes

✓ **Self-Check: Questions 1-3**

1. Show the fraction in five other ways.

improper fraction

mixed number

seven-fourths

words

2. If the shape below is the unit whole, write a fraction for each of the following.

A. one orange piece _____
B. three aqua pieces _____
C. eight black pieces _____

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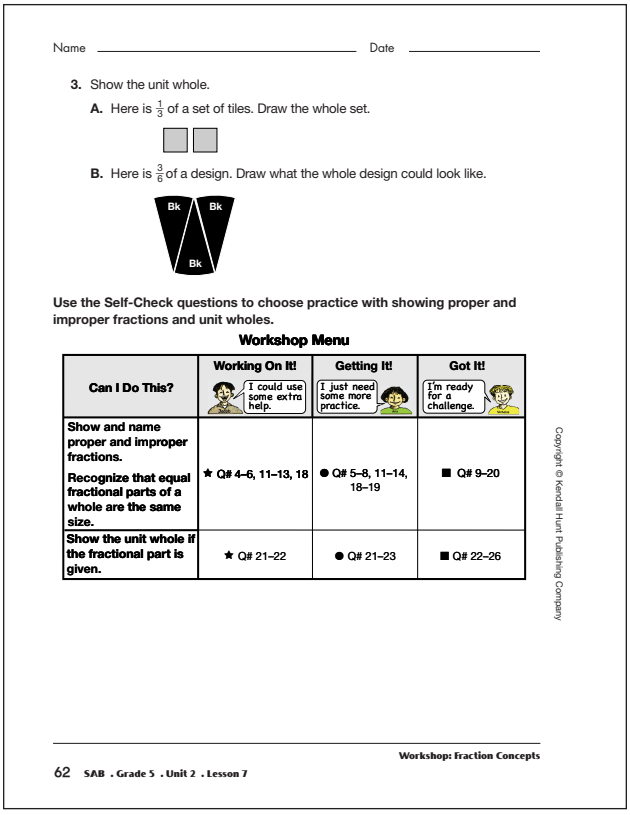

Name _____ Date _____

3. Show the unit whole.
   A. Here is $\frac{1}{3}$ of a set of tiles. Draw the whole set.

   B. Here is $\frac{3}{6}$ of a design. Draw what the whole design could look like.

Use the Self-Check questions to choose practice with showing proper and improper fractions and unit wholes.

Workshop Menu

Can I Do This?	Working On It!	Getting It!	Got It!
Show and name proper and improper fractions. **Recognize that equal fractional parts of a whole are the same size.**	★ Q# 4–6, 11–13, 18	● Q# 5–8, 11–14, 18–19	■ Q# 9–20
Show the unit whole if the fractional part is given.	★ Q# 21–22	● Q# 21–23	■ Q# 22–26

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★4. Use fraction circle pieces to fill in the blanks.

A. The red circle is the unit whole. Cover it with 5 greens.

_____ equal size parts

Each part is _____ of the red circle.

2 greens are what part of the red circle? _____

Write a number sentence for two greens. _____

B. The red circle is the unit whole. Cover it with 10 purples.

_____ equal size parts

Each part is _____ of the red circle.

2 purples are what part of the red circle ? _____

4 purples are what part of the red circle? _____

C. The pink piece is the unit whole. Cover it with 6 blacks.

_____ equal size parts

Each part is _____ of the pink piece.

4 blacks are what part of the pink piece? _____

Write a number sentence for four blacks. _____

D. The pink piece is the unit whole. Cover it with 3 aquas.

_____ equal size parts

Each part is _____ of the pink circle.

2 aquas are what part of the pink piece? _____

3 aquas are what part of the pink piece? _____

5 aquas are what part of the pink piece? _____

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4. A. 5; $\frac{1}{5}$; $\frac{2}{5}$; $\frac{1}{5}+\frac{1}{5}=\frac{2}{5}$

B. 10; $\frac{1}{10}$; $\frac{2}{10}$; $\frac{4}{10}$

C. 6; $\frac{1}{6}$; $\frac{4}{6}$; $\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}=\frac{4}{6}$

D. 3; $\frac{1}{3}$; $\frac{2}{3}$; $\frac{3}{3}$ or 1; $\frac{5}{3}$ or $1\frac{2}{3}$

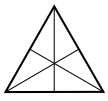
Name _____ Date _____

★●5. Look at the shapes and then fill in the blanks. For Questions 5A–D, the unit whole is the shape shown by each question.

A. _____ equal size parts

Each part is _____ of the whole.

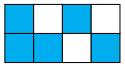
Shade $\frac{2}{6}$.



B. _____ equal size parts

Each part is _____ of the whole.

What fraction is shaded? _____

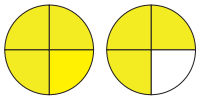


C. The circle is the unit whole.

_____ equal size parts

Each part is _____ of the whole.

What fraction is shaded? _____



D. Look at the outlined parts.

_____ equal size parts.

Each part is _____ of the whole.

Shade $\frac{3}{4}$.

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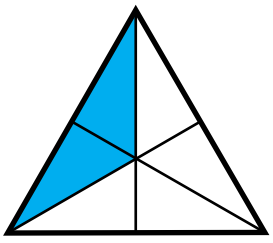
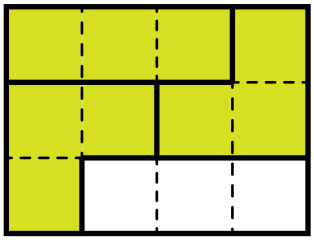
5. A. 6; $\frac{1}{6}$;



B. 8; $\frac{1}{8}$; $\frac{5}{8}$

C. 4; $\frac{1}{4}$; $\frac{7}{4}$ or $1\frac{3}{4}$

D. 4; $\frac{1}{4}$;



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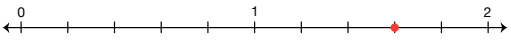
6.

$\frac{8}{5}$
number

eight-fifths
words

drawing



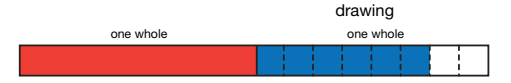
number sentence $8 \times \frac{1}{5} = \frac{8}{5}$

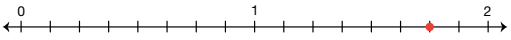
7.

$1\frac{6}{8}$
number

one and six-eighths
words

drawing





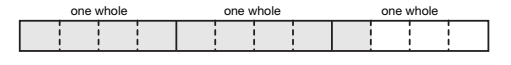
number sentence $1 + \frac{6}{8} = 1\frac{6}{8}$

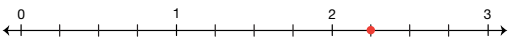
8.

$\frac{9}{4}$
number

nine-fourths
words

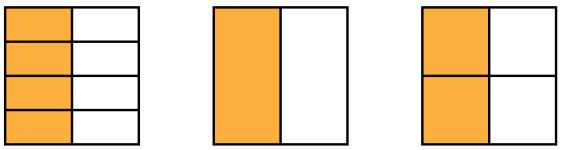
drawing





number sentence $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4} = \frac{9}{4}$

9. A.



Sylvia's sandwich Tina's sandwich Juan's sandwich

B. $\frac{4}{8} = \frac{1}{2} = \frac{2}{4}$

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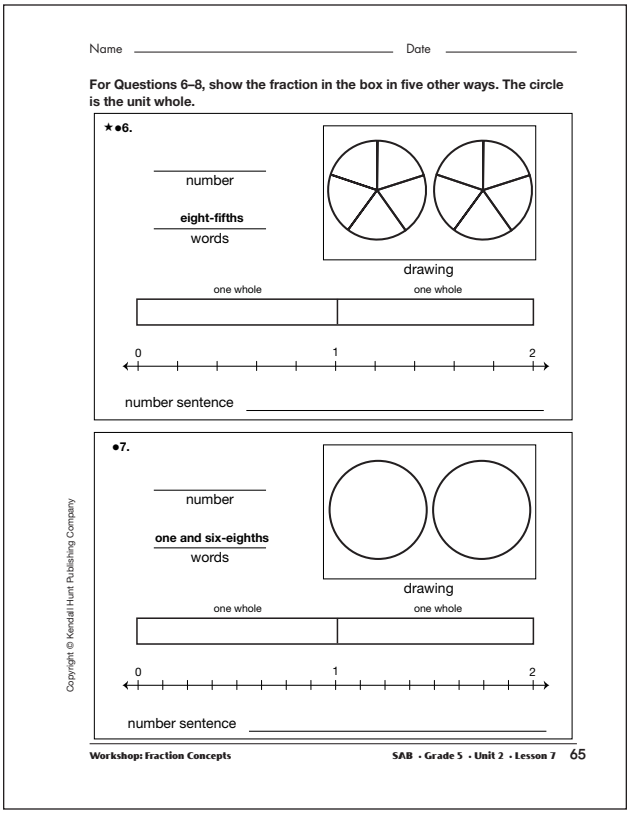

Name _____ Date _____

For Questions 6–8, show the fraction in the box in five other ways. The circle is the unit whole.

★●6.

number

eight-fifths
words

drawing

one whole one whole

0 1 2

number sentence _____

●7.

number

one and six-eighths
words

drawing

one whole one whole

0 1 2

number sentence _____

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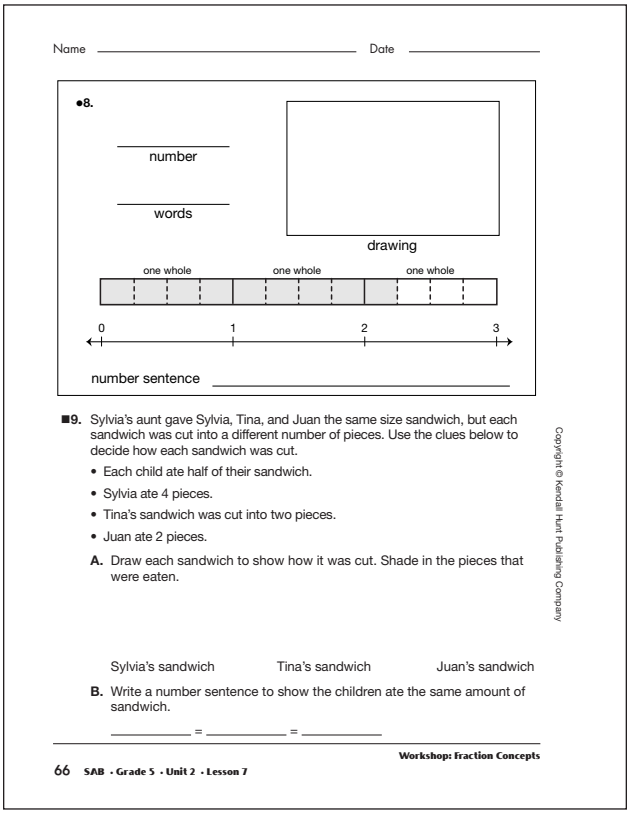

Name _____ Date _____

●8.

number

words

drawing

one whole one whole one whole

0 1 2 3

number sentence _____

■9. Sylvia's aunt gave Sylvia, Tina, and Juan the same size sandwich, but each sandwich was cut into a different number of pieces. Use the clues below to decide how each sandwich was cut.

- Each child ate half of their sandwich.
- Sylvia ate 4 pieces.
- Tina's sandwich was cut into two pieces.
- Juan ate 2 pieces.

A. Draw each sandwich to show how it was cut. Shade in the pieces that were eaten.

Sylvia's sandwich Tina's sandwich Juan's sandwich

B. Write a number sentence to show the children ate the same amount of sandwich.

_____ = _____ = _____

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Name _____ Date _____

■10. Members of the baking club made 2 pans of brownies. Each group baked one pan of brownies. Each group ate half their pan, sharing the half-pan fairly.

For each problem:
- Shade the half the group ate.
- Show how they divided the half into equal shares.
- Write a fraction for the part each person ate.

A. Jerome's group had 8 members.

Each member ate _____ of the whole pan.

B. Shelly's group had 5 members.

Each member ate _____ of the whole pan.

★●■11. Shade $\frac{4}{8}$ of each cake. Show a different way on each cake.

★●■12. **A.** Maya and Natasha made a pan of lasagna. Divide the pan into twelve equal shares.

B. Natasha took $\frac{2}{3}$ of the lasagna home with her. Shade in $\frac{2}{3}$ of the pan.

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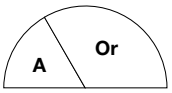
Name _____ Date _____

For Questions 13–15, cover the unit whole with the circle pieces as shown in each drawing. For each color, write the fraction of the unit whole. Then write a number sentence to match the drawing.

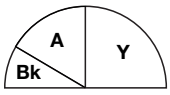
Example: The pink piece is the unit whole.



Color	Fraction
aqua	$\frac{1}{3}$
orange	$\frac{2}{3}$

Number Sentence: $\frac{1}{3} + \frac{2}{3} = 1$

★●■13. The pink piece is the unit whole.



Color	Fraction
yellow	
aqua	
black	

Number Sentence: _____

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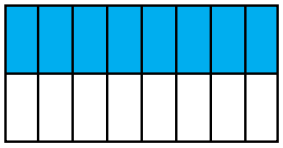
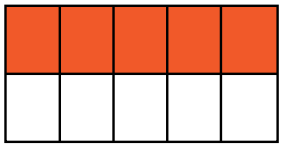
***Student Activity Book* - Page 68**

10. A.



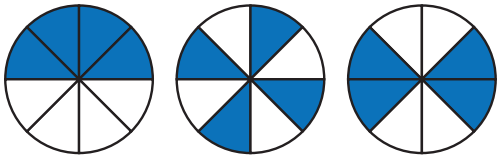
Each member ate $\frac{1}{16}$ of the whole pan.

B.

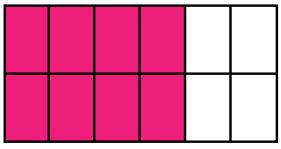


Each member ate $\frac{1}{10}$ of the whole pan.

11. Possible responses:



12. A–B.



13.

Color	Fraction
yellow	$\frac{1}{2}$
aqua	$\frac{1}{3}$
black	$\frac{1}{6}$

Number sentence: $\frac{1}{2} + \frac{1}{3} + \frac{1}{6} = 1$

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14.

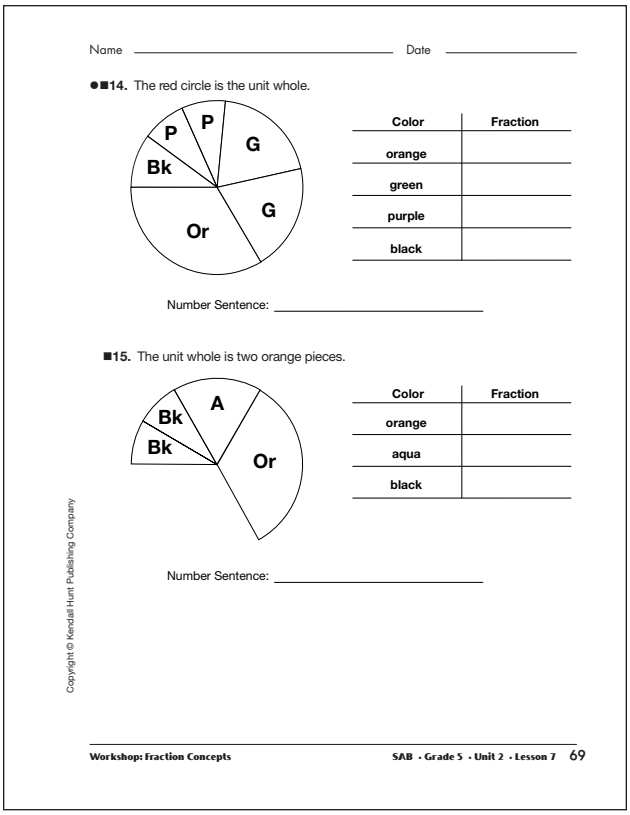
Color	Fraction
orange	$\frac{1}{3}$
green	$\frac{2}{5}$
purple	$\frac{2}{10}$
black	$\frac{1}{12}$

Number sentence: $\frac{1}{3} + \frac{2}{5} + \frac{2}{10} + \frac{1}{12} = 1$

15.

Color	Fraction
orange	$\frac{1}{2}$
aqua	$\frac{1}{4}$
black	$\frac{2}{8}$

Number sentence: $\frac{1}{2} + \frac{1}{4} + \frac{2}{8} = 1$


Name _____ Date _____

●■**14.** The red circle is the unit whole.

Color	Fraction
orange	
green	
purple	
black	

Number Sentence: _____

■**15.** The unit whole is two orange pieces.

Color	Fraction
orange	
aqua	
black	

Number Sentence: _____

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Workshop: Fraction Concepts SAB • Grade 5 • Unit 2 • Lesson 7 69

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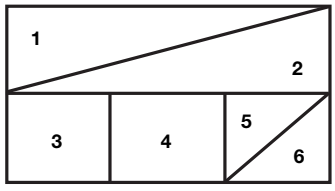
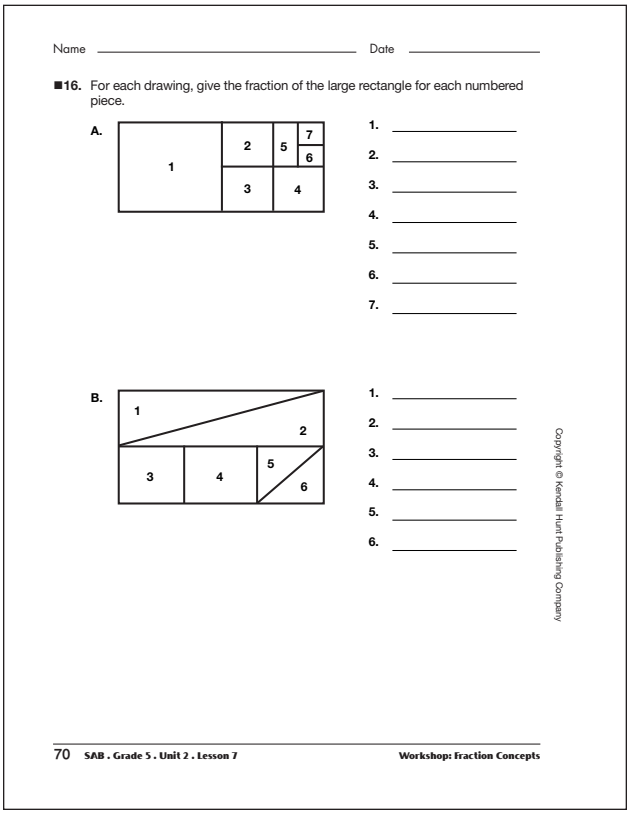
16. A.

1. $\frac{1}{2}$
2. $\frac{1}{8}$
3. $\frac{1}{8}$
4. $\frac{1}{8}$
5. $\frac{1}{16}$
6. $\frac{1}{32}$
7. $\frac{1}{32}$

B.



1. $\frac{1}{4}$
2. $\frac{1}{4}$
3. $\frac{1}{6}$
4. $\frac{1}{6}$
5. $\frac{1}{12}$
6. $\frac{1}{12}$


Name _____ Date _____

■**16.** For each drawing, give the fraction of the large rectangle for each numbered piece.

A.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

B.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

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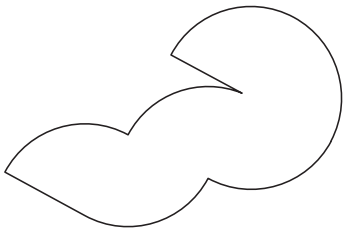
■17. Make this shape with all one color.



A. What color did you use? _____

B. How many pieces? _____

C. If the shape above is the unit whole, write a fraction for the items below.

one yellow piece _____

one blue piece _____

one black piece _____

D. Write a number sentence for 4 blue pieces together.

E. Write a number sentence for 1 yellow and 1 blue together.

F. Write a number sentence for 3 yellows, 4 blues, and 3 blacks together.

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17. A. Possible responses: yellow, blue, or black

B. Possible responses: 6 yellow, 12 blue, or 18 black

C. $\frac{1}{6}$

$\frac{1}{12}$

$\frac{1}{18}$

D. $\frac{1}{12}+\frac{1}{12}+\frac{1}{12}+\frac{1}{12}=\frac{4}{12}$ or $\frac{1}{3}$ or $4\times\frac{1}{12}=\frac{4}{12}$ or $\frac{1}{3}$

E. $\frac{1}{6}+\frac{1}{12}=\frac{3}{12}$ or $\frac{1}{4}$

F. $\frac{3}{6}+\frac{4}{12}+\frac{3}{18}=1$

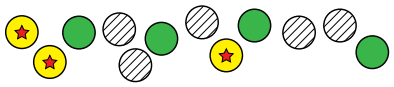
Name _____ Date _____

★●■18. Sonya frosted 12 cookies for the neighborhood picnic.

A. One cookie is what fraction of the set? _____

B. What fraction of the cookies is striped? _____

C. What fraction of the cookies has stars? _____



●■19. Ming brought three blueberry pies to share at the picnic. Ming's uncle ate $\frac{2}{3}$ of one pie. Ming and his six cousins shared the rest of the pie equally.

A. How much pie was left at the picnic after Ming's uncle had a piece?

_____

B. How much of one whole pie did each cousin eat? _____

C. Write a number sentence to show how much pie was eaten altogether.

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18. A. $\frac{1}{12}$

B. $\frac{5}{12}$

C. $\frac{3}{12}$

19. A. $\frac{7}{3}$

B. $\frac{1}{3}$

C. $\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{2}{3}=3$

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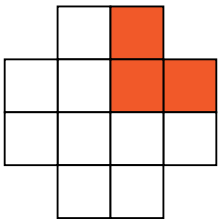
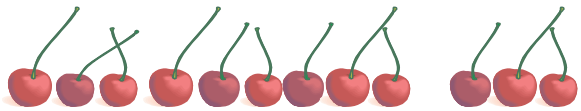
20. **A.** 12 ounces
B. $\frac{6}{24}$ or $\frac{1}{4}$
C. 6 ounces
D. 2 ounces
E. $\frac{2}{24}$ or $\frac{1}{12}$

21. **A.** red
B. pink
C. red
D. pink
E. pink
F. red
G. red
H. pink

22. Possible response:

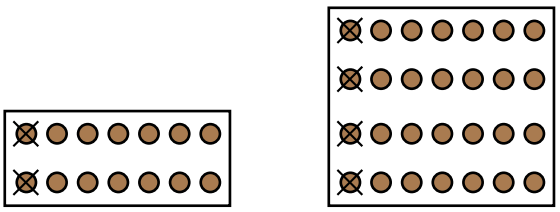


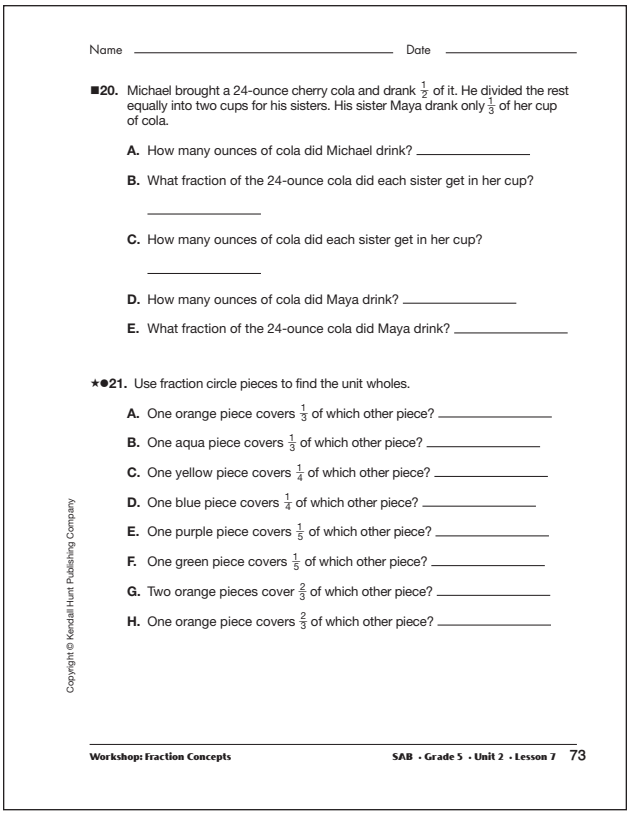
23.



24.

25.





Name _____ Date _____

■**20.** Michael brought a 24-ounce cherry cola and drank $\frac{1}{2}$ of it. He divided the rest equally into two cups for his sisters. His sister Maya drank only $\frac{1}{3}$ of her cup of cola.

A. How many ounces of cola did Michael drink? _____

B. What fraction of the 24-ounce cola did each sister get in her cup?

_____

C. How many ounces of cola did each sister get in her cup?

_____

D. How many ounces of cola did Maya drink? _____

E. What fraction of the 24-ounce cola did Maya drink? _____

★●**21.** Use fraction circle pieces to find the unit wholes.

A. One orange piece covers $\frac{1}{3}$ of which other piece? _____

B. One aqua piece covers $\frac{1}{3}$ of which other piece? _____

C. One yellow piece covers $\frac{1}{4}$ of which other piece? _____

D. One blue piece covers $\frac{1}{4}$ of which other piece? _____

E. One purple piece covers $\frac{1}{5}$ of which other piece? _____

F. One green piece covers $\frac{1}{5}$ of which other piece? _____

G. Two orange pieces cover $\frac{2}{3}$ of which other piece? _____

H. One orange piece covers $\frac{2}{3}$ of which other piece? _____

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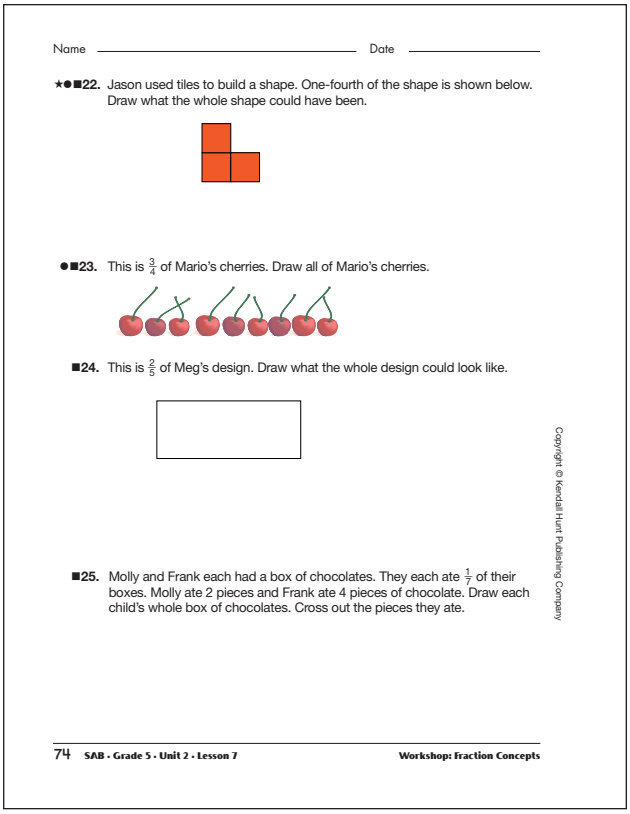

Name _____ Date _____

★●■**22.** Jason used tiles to build a shape. One-fourth of the shape is shown below. Draw what the whole shape could have been.

●■**23.** This is $\frac{3}{4}$ of Mario's cherries. Draw all of Mario's cherries.

■**24.** This is $\frac{2}{5}$ of Meg's design. Draw what the whole design could look like.

■**25.** Molly and Frank each had a box of chocolates. They each ate $\frac{1}{7}$ of their boxes. Molly ate 2 pieces and Frank ate 4 pieces of chocolate. Draw each child's whole box of chocolates. Cross out the pieces they ate.

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■**26.** Fill in the blanks.

1 hour = _____ minutes

$\frac{1}{2}$ hour = _____ minutes $\frac{1}{3}$ hour = _____ minutes

$\frac{1}{4}$ hour = _____ minutes $\frac{3}{4}$ hour = _____ minutes

1 foot = _____ inches

$\frac{1}{2}$ foot = _____ inches $\frac{1}{3}$ foot = _____ inches

$\frac{1}{4}$ foot = _____ inches $\frac{3}{4}$ foot = _____ inches

1 yard = _____ inches

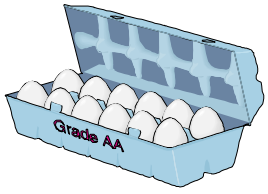
$\frac{1}{2}$ yard = _____ inches $\frac{1}{3}$ yard = _____ inches

$\frac{1}{4}$ yard = _____ inches $\frac{3}{4}$ yard = _____ inches

1 dozen eggs = _____ eggs

$\frac{1}{3}$ dozen eggs = _____ eggs $\frac{1}{4}$ dozen eggs = _____ eggs

$\frac{1}{6}$ dozen eggs = _____ eggs $\frac{3}{4}$ dozen eggs = _____ eggs



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26.

1 hour = 60 minutes

$\frac{1}{2}$ hour = 30 minutes $\frac{1}{3}$ hour = 20 minutes

$\frac{1}{4}$ hour = 15 minutes $\frac{3}{4}$ hour = 45 minutes

1 foot = 12 inches

$\frac{1}{2}$ foot = 6 inches $\frac{1}{3}$ foot = 4 inches

$\frac{1}{4}$ foot = 3 inches $\frac{3}{4}$ foot = 9 inches

1 yard = 36 inches

$\frac{1}{2}$ yard = 18 inches $\frac{1}{3}$ yard = 12 inches

$\frac{1}{4}$ yard = 9 inches $\frac{3}{4}$ yard = 27 inches

1 dozen eggs = 12 eggs

$\frac{1}{3}$ dozen = 4 eggs $\frac{1}{4}$ dozen = 3 eggs

$\frac{1}{6}$ dozen = 2 eggs $\frac{3}{4}$ dozen = 9 eggs

Name _____ Date _____

Greater Than, Less Than, or Equal To

✓ **Self-Check: Questions 27-28**

27. Find equivalent fractions to make each number sentence true.

A. $\frac{3}{5} = \frac{6}{\square}$ **B.** $\frac{12}{16} = \frac{\square}{4}$

C. $\frac{\square}{40} = \frac{1}{2}$ **D.** $\frac{1}{3} = \frac{\square}{12}$

E. Show or tell how you solved Question 27D. Describe any tools you used.

28. Write >, <, or = to make each number sentence true.

A. $\frac{7}{2} \bigcirc \frac{7}{12}$ **B.** $\frac{4}{5} \bigcirc \frac{6}{10}$

C. $\frac{5}{5} \bigcirc \frac{6}{5}$ **D.** $\frac{5}{12} \bigcirc \frac{1}{8}$

E. Show or tell how you solved Question 28D. Describe any tools you used.

Use the Self-Check questions and the menu to choose practice with finding equivalent fractions and comparing fractions.

Workshop Menu

Can I Do This?	Working On It!	Getting It!	Got It!
Find equivalent fractions.	★ Q# 29–33	● Q# 31–33	■ Q# 31, 33–34
Compare fractions.	★ Q# 35–36, 42	● Q# 35–36, 38–39, 42	■ Q# 37–42

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27. **A.** $\frac{3}{5} = \frac{6}{10}$ **B.** $\frac{12}{16} = \frac{3}{4}$

C. $\frac{20}{40} = \frac{1}{2}$ **D.** $\frac{1}{3} = \frac{4}{12}$

E. Responses will vary. Possible response: I found $\frac{1}{3}$ on the thirds number line and followed a straight line down to $\frac{4}{12}$ on the twelfths number line.

28. **A.** $\frac{7}{2} > \frac{7}{12}$ **B.** $\frac{4}{5} > \frac{6}{10}$

C. $\frac{5}{5} < \frac{6}{5}$ **D.** $\frac{5}{12} > \frac{1}{8}$

E. Responses will vary. Possible response: I know $\frac{5}{12}$ is almost $\frac{6}{12}$ or $\frac{1}{2}$ and $\frac{1}{8}$ is much less than $\frac{4}{8}$, so $\frac{5}{12}$ is greater than $\frac{1}{8}$.

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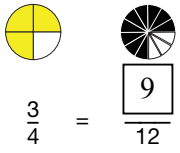
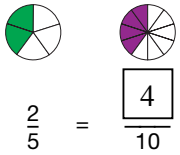
29. A.



$\frac{3}{4} = \frac{9}{12}$

$\frac{3 \times 3}{4 \times 3} = \frac{9}{12}$

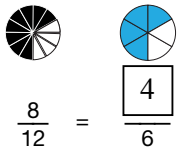
B.



$\frac{2}{5} = \frac{4}{10}$

$\frac{2 \times 2}{5 \times 2} = \frac{4}{10}$

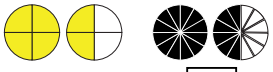
C.



$\frac{8}{12} = \frac{4}{6}$

$\frac{8 \div 2}{12 \div 2} = \frac{4}{6}$

D.



$\frac{6}{4} = \frac{18}{12}$

$1\frac{2}{4} = 1\frac{6}{12}$

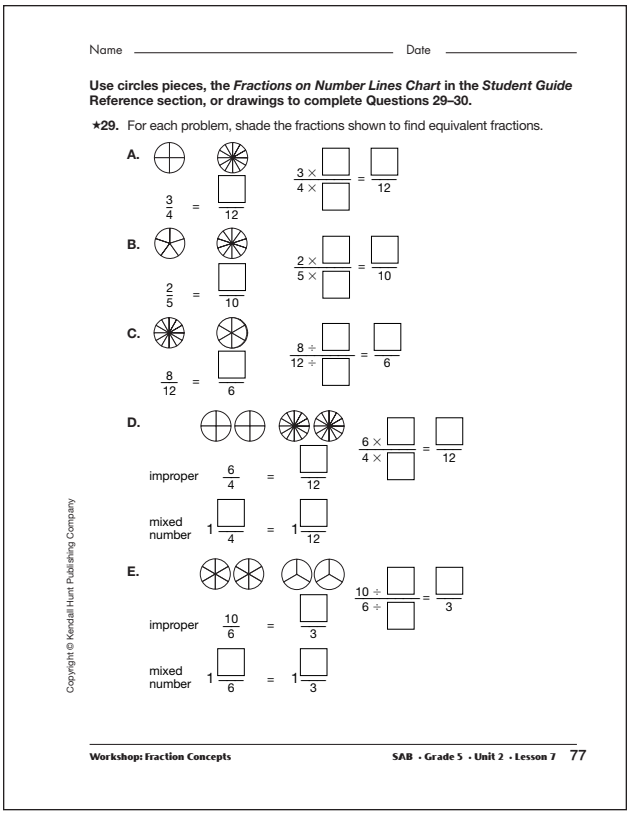
$\frac{6 \times 3}{4 \times 3} = \frac{18}{12}$

E.

$\frac{10}{6} = \frac{5}{3}$

$1\frac{4}{6} = 1\frac{2}{3}$

$\frac{10 \div 2}{6 \div 2} = \frac{5}{3}$



Name _____ Date _____

Use circles pieces, the *Fractions on Number Lines Chart* in the *Student Guide* Reference section, or drawings to complete Questions 29–30.

***29.** For each problem, shade the fractions shown to find equivalent fractions.

A. $\frac{3}{4} = \frac{\square}{12}$ $\frac{3 \times \square}{4 \times \square} = \frac{\square}{12}$

B. $\frac{2}{5} = \frac{\square}{10}$ $\frac{2 \times \square}{5 \times \square} = \frac{\square}{10}$

C. $\frac{8}{12} = \frac{\square}{6}$ $\frac{8 \div \square}{12 \div \square} = \frac{\square}{6}$

D. $\frac{6}{4} = \frac{\square}{12}$ $\frac{6 \times \square}{4 \times \square} = \frac{\square}{12}$

improper $\frac{6}{4} = \frac{\square}{12}$

mixed number $1\frac{\square}{4} = 1\frac{\square}{12}$

E. $\frac{10}{6} = \frac{\square}{3}$ $\frac{10 \div \square}{6 \div \square} = \frac{\square}{3}$

improper $\frac{10}{6} = \frac{\square}{3}$

mixed number $1\frac{\square}{6} = 1\frac{\square}{3}$

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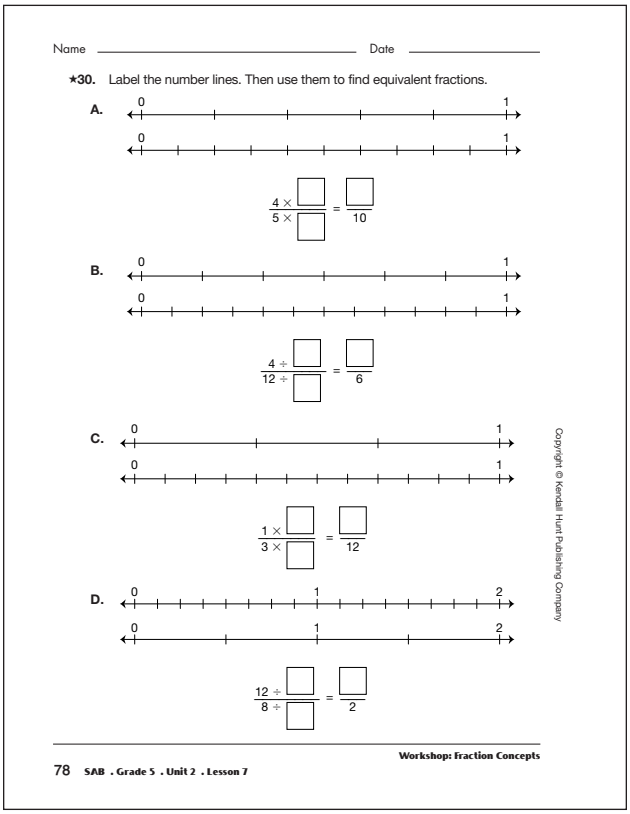

Name _____ Date _____

★30. Label the number lines. Then use them to find equivalent fractions.

A. 0 1 / 0 1

$\frac{4 \times \square}{5 \times \square} = \frac{\square}{10}$

B. 0 1 / 0 1

$\frac{4 \div \square}{12 \div \square} = \frac{\square}{6}$

C. 0 1 / 0 1

$\frac{1 \times \square}{3 \times \square} = \frac{\square}{12}$

D. 0 1 2 / 0 1 2

$\frac{12 \div \square}{8 \div \square} = \frac{\square}{2}$

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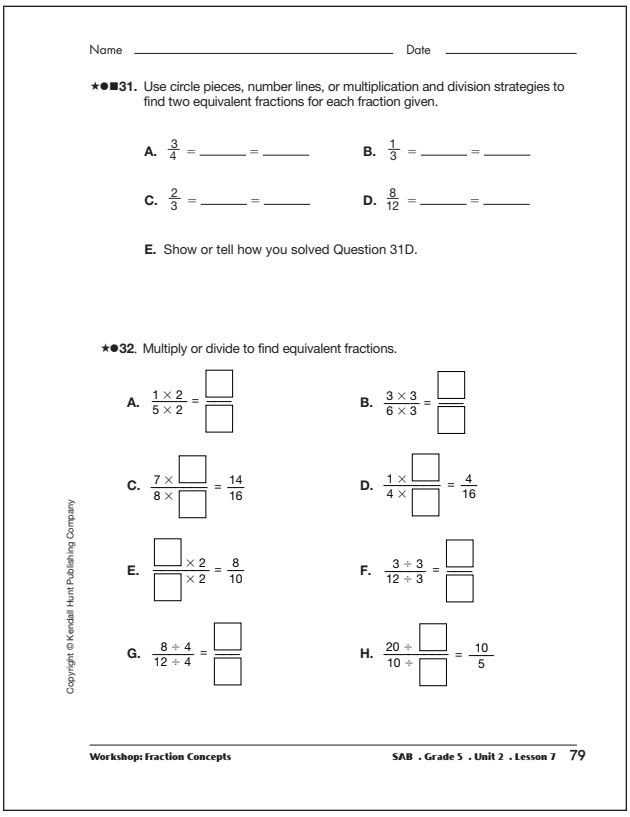

Name _____ Date _____

★●■31. Use circle pieces, number lines, or multiplication and division strategies to find two equivalent fractions for each fraction given.

A. $\frac{3}{4} =$ _____ = _____

B. $\frac{1}{3} =$ _____ = _____

C. $\frac{2}{3} =$ _____ = _____

D. $\frac{8}{12} =$ _____ = _____

E. Show or tell how you solved Question 31D.

★●32. Multiply or divide to find equivalent fractions.

A. $\frac{1 \times 2}{5 \times 2} = \frac{\square}{\square}$

B. $\frac{3 \times 3}{6 \times 3} = \frac{\square}{\square}$

C. $\frac{7 \times \square}{8 \times \square} = \frac{14}{16}$

D. $\frac{1 \times \square}{4 \times \square} = \frac{4}{16}$

E. $\frac{\square \times 2}{\square \times 2} = \frac{8}{10}$

F. $\frac{3 \div 3}{12 \div 3} = \frac{\square}{\square}$

G. $\frac{8 \div 4}{12 \div 4} = \frac{\square}{\square}$

H. $\frac{20 \div \square}{10 \div \square} = \frac{10}{5}$

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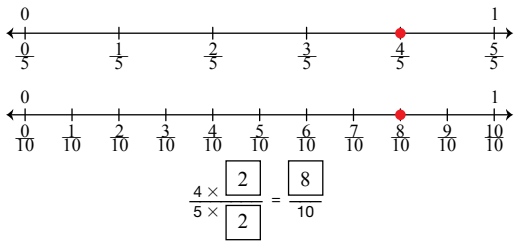
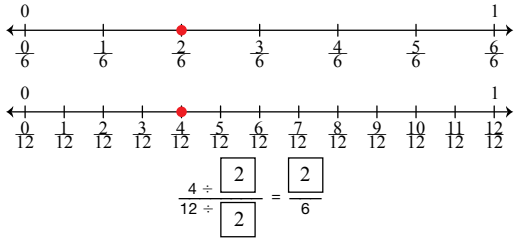
30. A.



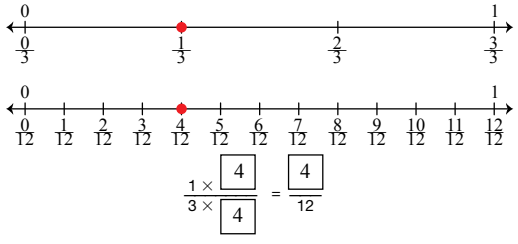
$\frac{4 \times 2}{5 \times 2} = \frac{8}{10}$

B.



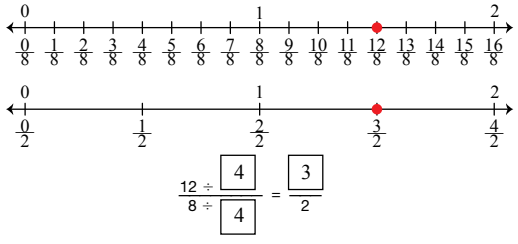
$\frac{4 \div 2}{12 \div 2} = \frac{2}{6}$

C.



$\frac{1 \times 4}{3 \times 4} = \frac{4}{12}$

D.



$\frac{12 \div 4}{8 \div 4} = \frac{3}{2}$

31. Equivalent fractions may vary. Possible responses given for 31A–E.

A. $\frac{3}{4} = \frac{6}{8} = \frac{9}{12}$

B. $\frac{1}{3} = \frac{2}{6} = \frac{3}{9}$

C. $\frac{2}{3} = \frac{4}{6} = \frac{6}{9}$

D. $\frac{8}{12} = \frac{4}{6} = \frac{2}{3}$

E. Possible response: I started with $\frac{8}{12}$ and divided the numerator and the denominator by 2 to get $\frac{4}{6}$. Then I did that again to find $\frac{2}{3}$.

32. A. $\frac{2}{10}$ **B.** $\frac{9}{18}$

C. $\frac{2}{2}$ **D.** $\frac{4}{4}$

E. $\frac{4}{5}$ **F.** $\frac{1}{4}$

G. $\frac{2}{3}$ **H.** $\frac{2}{2}$

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33. A. $\frac{3}{5} = \frac{6}{10}$ **B.** $\frac{2}{4} \neq \frac{7}{12}$ **C.** $\frac{5}{6} \neq \frac{11}{12}$

D. $\frac{3}{2} = \frac{6}{4}$ **E.** $1\frac{1}{5} = \frac{6}{5}$ **F.** $\frac{3}{12} \neq \frac{2}{3}$

G. Possible response: On a red circle, 3 black pieces do not cover the same part of the circle as 2 orange pieces.

34. A. $\frac{3}{21} = \frac{\boxed{2}}{14}$

B. $\frac{4}{11} = \frac{\boxed{20}}{55}$

C. $\frac{6}{\boxed{3}} = \frac{18}{9}$

D. Possible response: $\frac{\boxed{1}}{\boxed{3}} = \frac{3}{9} = \frac{8}{24}$

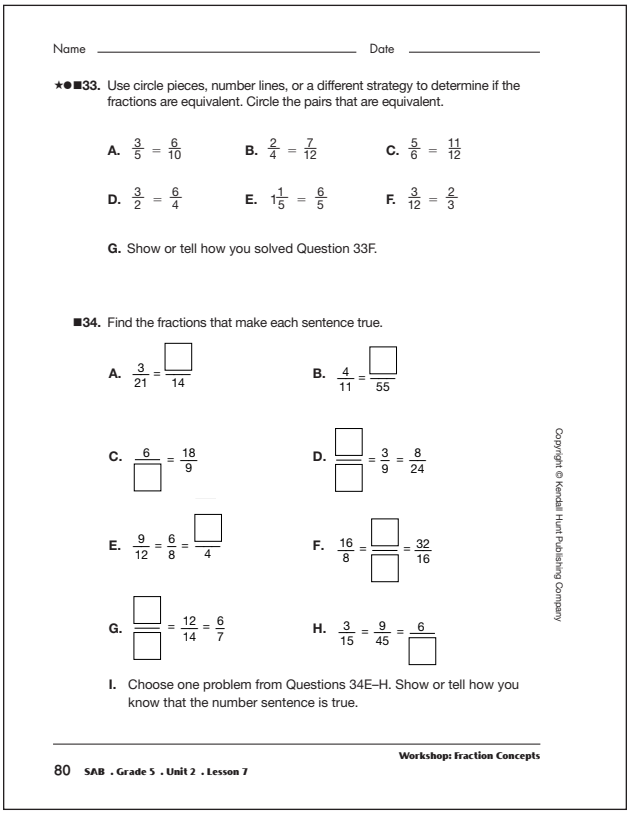
E. $\frac{9}{12} = \frac{6}{8} = \frac{\boxed{3}}{4}$

F. Possible response: $\frac{16}{8} = \frac{\boxed{2}}{\boxed{1}} = \frac{32}{16}$

G. Possible response: $\frac{\boxed{18}}{\boxed{21}} = \frac{12}{14} = \frac{6}{7}$

H. $\frac{3}{15} = \frac{9}{45} = \frac{6}{\boxed{30}}$

I. Answers will vary.



Name _____ Date _____

★●■**33.** Use circle pieces, number lines, or a different strategy to determine if the fractions are equivalent. Circle the pairs that are equivalent.

A. $\frac{3}{5} = \frac{6}{10}$ **B.** $\frac{2}{4} = \frac{7}{12}$ **C.** $\frac{5}{6} = \frac{11}{12}$

D. $\frac{3}{2} = \frac{6}{4}$ **E.** $1\frac{1}{5} = \frac{6}{5}$ **F.** $\frac{3}{12} = \frac{2}{3}$

G. Show or tell how you solved Question 33F.

■**34.** Find the fractions that make each sentence true.

A. $\frac{3}{21} = \frac{\square}{14}$ **B.** $\frac{4}{11} = \frac{\square}{55}$

C. $\frac{6}{\square} = \frac{18}{9}$ **D.** $\frac{\square}{\square} = \frac{3}{9} = \frac{8}{24}$

E. $\frac{9}{12} = \frac{6}{8} = \frac{\square}{4}$ **F.** $\frac{16}{8} = \frac{\square}{\square} = \frac{32}{16}$

G. $\frac{\square}{\square} = \frac{12}{14} = \frac{6}{7}$ **H.** $\frac{3}{15} = \frac{9}{45} = \frac{6}{\square}$

I. Choose one problem from Questions 34E–H. Show or tell how you know that the number sentence is true.

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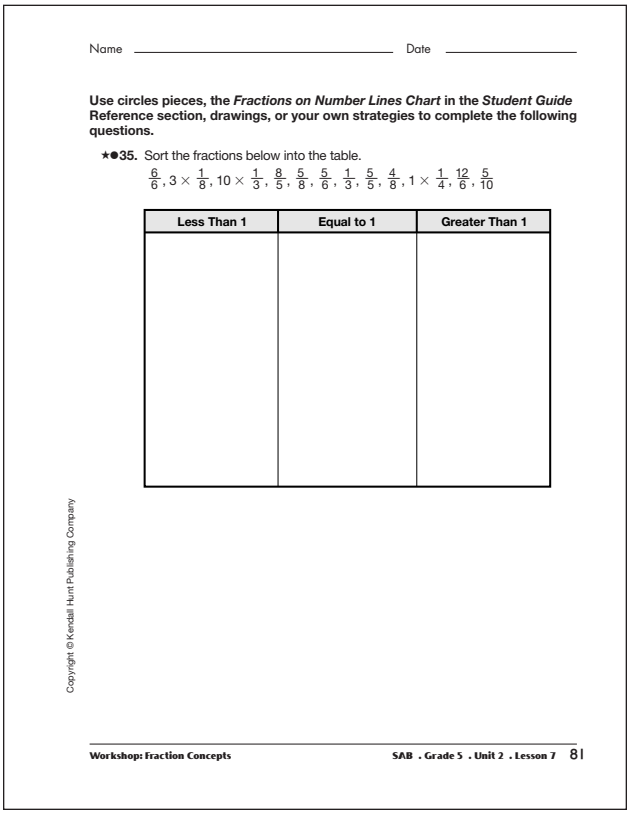
35.

Less Than 1	Equal to 1	Greater Than 1
$3 \times \frac{1}{8}, \frac{5}{8}, \frac{5}{6}, \frac{1}{3}, \frac{4}{8}, \frac{5}{10}, 1 \times \frac{1}{4}$	$\frac{6}{6}, \frac{5}{5}$	$10 \times \frac{1}{3}, \frac{8}{5}, \frac{12}{6}$



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Use circles pieces, the *Fractions on Number Lines Chart* in the *Student Guide* Reference section, drawings, or your own strategies to complete the following questions.

★●**35.** Sort the fractions below into the table.

$\frac{6}{6}, 3 \times \frac{1}{8}, 10 \times \frac{1}{3}, \frac{8}{5}, \frac{5}{8}, \frac{5}{6}, \frac{1}{3}, \frac{5}{5}, \frac{4}{8}, 1 \times \frac{1}{4}, \frac{12}{6}, \frac{5}{10}$

Less Than 1	Equal to 1	Greater Than 1

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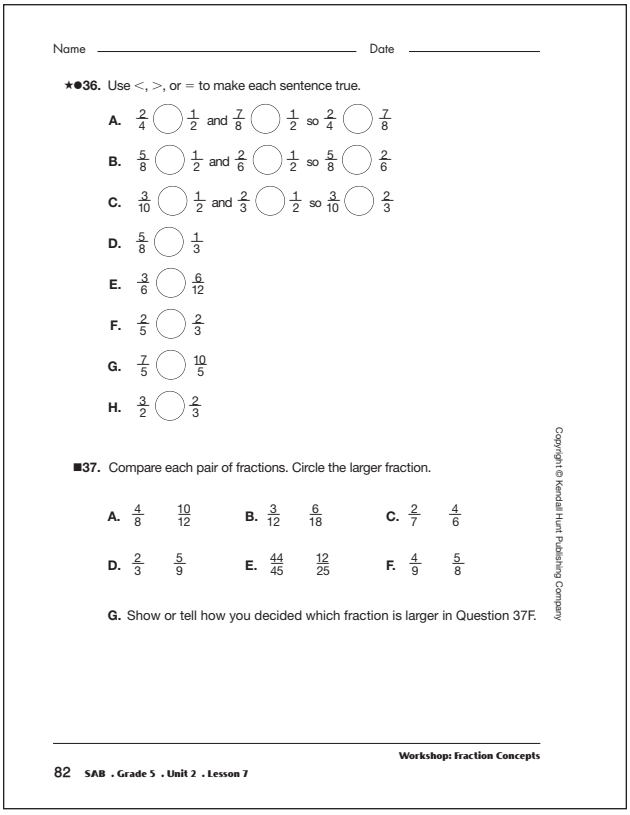

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★●36. Use <, >, or = to make each sentence true.

A. $\frac{2}{4}$ ◯ $\frac{1}{2}$ and $\frac{7}{8}$ ◯ $\frac{1}{2}$ so $\frac{2}{4}$ ◯ $\frac{7}{8}$

B. $\frac{5}{8}$ ◯ $\frac{1}{2}$ and $\frac{2}{6}$ ◯ $\frac{1}{2}$ so $\frac{5}{8}$ ◯ $\frac{2}{6}$

C. $\frac{3}{10}$ ◯ $\frac{1}{2}$ and $\frac{2}{3}$ ◯ $\frac{1}{2}$ so $\frac{3}{10}$ ◯ $\frac{2}{3}$

D. $\frac{5}{8}$ ◯ $\frac{1}{3}$

E. $\frac{3}{6}$ ◯ $\frac{6}{12}$

F. $\frac{2}{5}$ ◯ $\frac{2}{3}$

G. $\frac{7}{5}$ ◯ $\frac{10}{5}$

H. $\frac{3}{2}$ ◯ $\frac{2}{3}$

■37. Compare each pair of fractions. Circle the larger fraction.

A. $\frac{4}{8}$ $\frac{10}{12}$ B. $\frac{3}{12}$ $\frac{6}{18}$ C. $\frac{2}{7}$ $\frac{4}{6}$

D. $\frac{2}{3}$ $\frac{5}{9}$ E. $\frac{44}{45}$ $\frac{12}{25}$ F. $\frac{4}{9}$ $\frac{5}{8}$

G. Show or tell how you decided which fraction is larger in Question 37F.

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36. **A.** $\frac{2}{4} (=) \frac{1}{2}$ and $\frac{7}{8} (>) \frac{1}{2}$ so $\frac{2}{4} (<) \frac{7}{8}$

B. $\frac{5}{8} (>) \frac{1}{2}$ and $\frac{2}{6} (<) \frac{1}{2}$ so $\frac{5}{8} (>) \frac{2}{6}$

C. $\frac{3}{10} (<) \frac{1}{2}$ and $\frac{2}{3} (>) \frac{1}{2}$ so $\frac{3}{10} (<) \frac{2}{3}$

D. $\frac{5}{8} (>) \frac{1}{3}$

E. $\frac{3}{6} (=) \frac{6}{12}$

F. $\frac{2}{5} (<) \frac{2}{3}$

G. $\frac{7}{5} (<) \frac{10}{5}$

H. $\frac{3}{2} (>) \frac{2}{3}$

37. These fractions are circled:

A. $\frac{10}{12}$

B. $\frac{6}{18}$

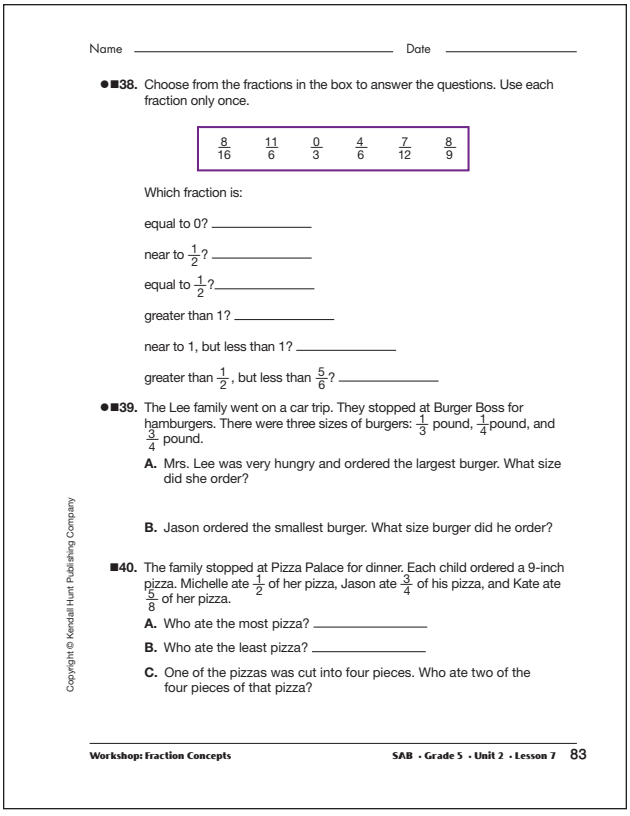
C. $\frac{4}{6}$

D. $\frac{2}{3}$

E. $\frac{44}{45}$

F. $\frac{5}{8}$

G. Possible response: $\frac{4}{9}$ is less than $\frac{1}{2}$ and $\frac{5}{8}$ is greater than $\frac{1}{2}$, so $\frac{5}{8}$ is greater than $\frac{4}{9}$.



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●■38. Choose from the fractions in the box to answer the questions. Use each fraction only once.

$\frac{8}{16}$	$\frac{11}{6}$	$\frac{0}{3}$	$\frac{4}{6}$	$\frac{7}{12}$	$\frac{8}{9}$

Which fraction is:

equal to 0? _____

near to $\frac{1}{2}$? _____

equal to $\frac{1}{2}$? _____

greater than 1? _____

near to 1, but less than 1? _____

greater than $\frac{1}{2}$, but less than $\frac{5}{6}$? _____

●■39. The Lee family went on a car trip. They stopped at Burger Boss for hamburgers. There were three sizes of burgers: $\frac{1}{3}$ pound, $\frac{1}{4}$ pound, and $\frac{3}{4}$ pound.

A. Mrs. Lee was very hungry and ordered the largest burger. What size did she order?

B. Jason ordered the smallest burger. What size burger did he order?

■40. The family stopped at Pizza Palace for dinner. Each child ordered a 9-inch pizza. Michelle ate $\frac{1}{2}$ of her pizza, Jason ate $\frac{3}{4}$ of his pizza, and Kate ate $\frac{5}{8}$ of her pizza.

A. Who ate the most pizza? _____

B. Who ate the least pizza? _____

C. One of the pizzas was cut into four pieces. Who ate two of the four pieces of that pizza?

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38. equal to 0: $\frac{0}{3}$
near to $\frac{1}{2}$: $\frac{7}{12}$
equal to $\frac{1}{2}$: $\frac{8}{16}$
greater than 1: $\frac{11}{6}$
near to 1, but less than 1: $\frac{8}{9}$
greater than $\frac{1}{2}$, but less than $\frac{5}{6}$: $\frac{4}{6}$

39. **A.** $\frac{3}{4}$ pound

B. $\frac{1}{4}$ pound

40. **A.** Jason

B. Michelle

C. Michelle

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41. A. Kate

B. 8 pages

C. greater than $\frac{1}{2}$; Possible response: $6 + 8 = 14$ and $\frac{14}{24}$ is greater than $\frac{12}{24}$ or $\frac{1}{2}$.

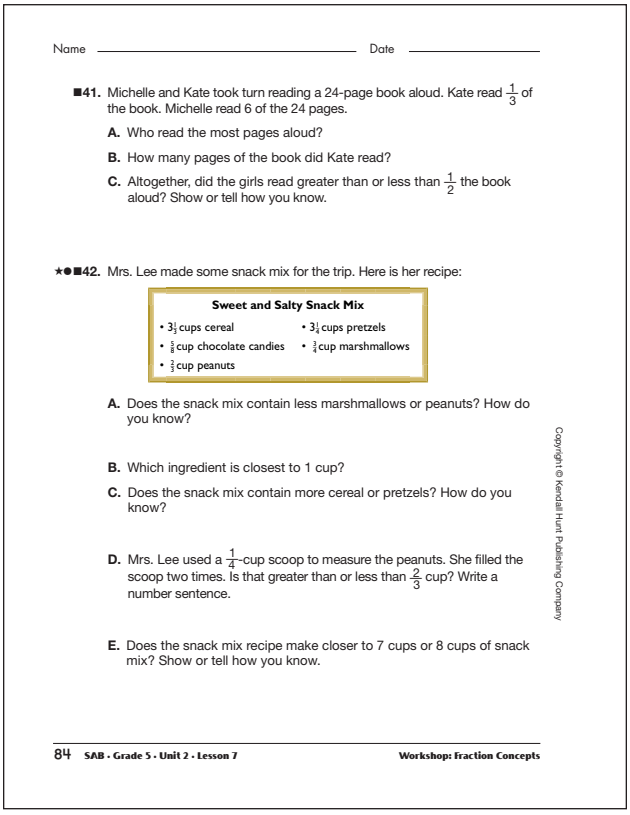
42. A. peanuts; Possible response: I compared 2 orange pieces to 3 yellow pieces. $\frac{2}{3} > \frac{3}{4}$, so there are more peanuts.

B. marshmallow

C. cereal; both have 1 full cup, but $\frac{1}{3}$ cup cereal is more than $\frac{1}{4}$ cup pretzels, so $1\frac{1}{3}$ is more than $1\frac{1}{4}$.

D. less than $\frac{2}{3}$; $\frac{1}{4} + \frac{1}{4} < \frac{2}{3}$

E. closer to 8 cups; Responses will vary. Possible response: $3\frac{1}{3}$ cups + $\frac{2}{3}$ cup makes 4 whole cups. $3\frac{1}{4}$ cups + $\frac{3}{4}$ cup makes another 4 whole cups, so that is 8 cups. Then there is $\frac{5}{8}$ cups more.



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■**41.** Michelle and Kate took turn reading a 24-page book aloud. Kate read $\frac{1}{3}$ of the book. Michelle read 6 of the 24 pages.

A. Who read the most pages aloud?

B. How many pages of the book did Kate read?

C. Altogether, did the girls read greater than or less than $\frac{1}{2}$ the book aloud? Show or tell how you know.

★●■**42.** Mrs. Lee made some snack mix for the trip. Here is her recipe:

Sweet and Salty Snack Mix

- $3\frac{1}{2}$ cups cereal
- $3\frac{1}{4}$ cups pretzels
- $\frac{5}{8}$ cup chocolate candies
- $\frac{3}{4}$ cup marshmallows
- $\frac{1}{4}$ cup peanuts

A. Does the snack mix contain less marshmallows or peanuts? How do you know?

B. Which ingredient is closest to 1 cup?

C. Does the snack mix contain more cereal or pretzels? How do you know?

D. Mrs. Lee used a $\frac{1}{4}$-cup scoop to measure the peanuts. She filled the scoop two times. Is that greater than or less than $\frac{2}{3}$ cup? Write a number sentence.

E. Does the snack mix recipe make closer to 7 cups or 8 cups of snack mix? Show or tell how you know.

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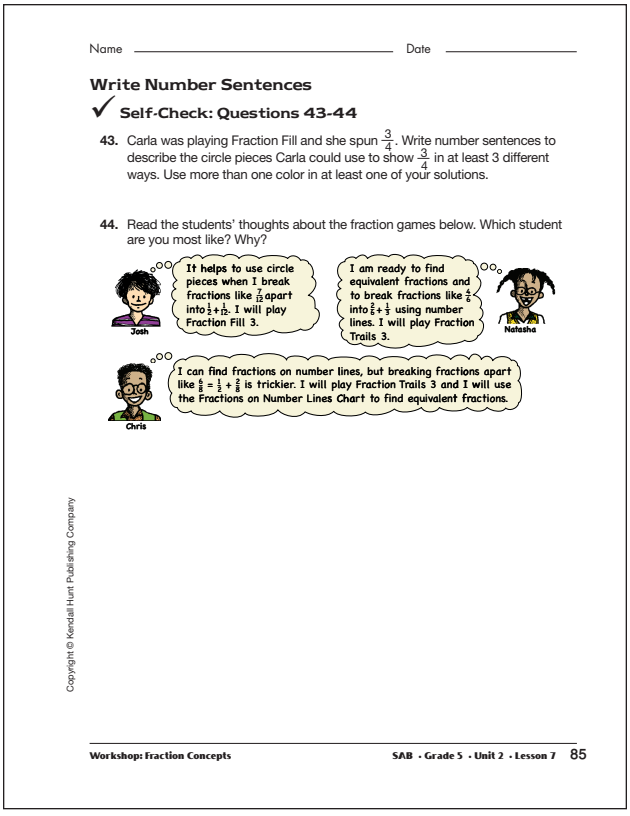
43. Responses will vary.

Possible responses: $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$; $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$; $\frac{1}{8} + \frac{1}{8} + \frac{1}{2} = \frac{3}{4}$.

44. Answers will vary.



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Write Number Sentences

✓ **Self-Check: Questions 43-44**

43. Carla was playing Fraction Fill and she spun $\frac{3}{4}$. Write number sentences to describe the circle pieces Carla could use to show $\frac{3}{4}$ in at least 3 different ways. Use more than one color in at least one of your solutions.

44. Read the students' thoughts about the fraction games below. Which student are you most like? Why?

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✓ **Check-In: Questions 45–46**

45. Julia played Fraction Fill 3. Find an equivalent fraction for each of her spins. Draw a picture to represent that equivalent fraction. The red circle is the unit whole.

Spin	Equivalent Fraction	Representation
A. $\frac{1}{3}$	$\frac{\square}{\square}$	○
B. $\frac{4}{6}$	$\frac{\square}{3}$	○
C. $\frac{6}{10}$	$\frac{3}{\square}$	○
D. $\frac{9}{12}$	$\frac{\square}{8}$	○

E. Show or tell how you found an equivalent fraction in Question 45D.

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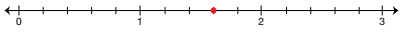
46. Name the fraction.

A. The pink circle is the unit whole.

_____ mixed number _____ improper fraction

B.



_____ mixed number _____ improper fraction

Workshop: Fraction Concepts Check-In: Q# 45–46 Feedback Box

	Expectation	Check In	Comments
Represent and identify proper fractions using drawings and symbols. [Q# 45]	E1		
Represent and identify improper and mixed number fractions using area models, number lines, and symbols. [Q# 46]	E1		
Recognize that equal fractional parts of a unit whole are the same size. [Q# 45A–D]	E2		
Find equivalent fractions. [Q# 45]	E4		

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45. Possible responses for A–E:

A. $\frac{2}{6}$

B. $\frac{2}{3}$;

C. $\frac{3}{5}$;

D. $\frac{6}{8}$;

E. I looked at the *Fractions on Number Lines Chart* and found $\frac{9}{12}$. I followed a straight line up to $\frac{6}{8}$.

46. A. mixed number: $2\frac{3}{4}$ improper fraction: $\frac{11}{4}$

B. mixed number: $1\frac{3}{5}$ improper fraction: $\frac{8}{5}$

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