

Learning Notes

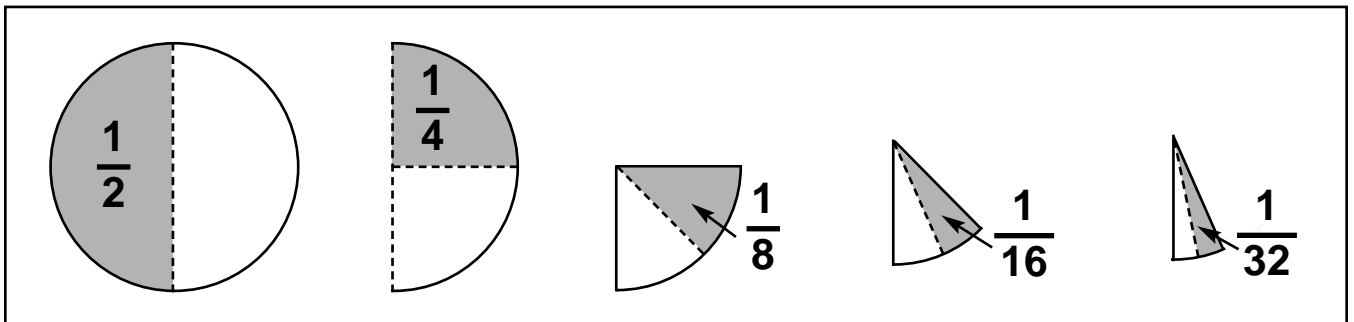
In this unit, children recognize shapes with congruent parts. They will also count the number of congruent parts and record the answer. The children will divide shapes into a specific number of congruent parts and will record the fraction.

Materials

- 1 paper plate for each child
- pencil or marker for labeling
- scissors

Teaching the Lesson

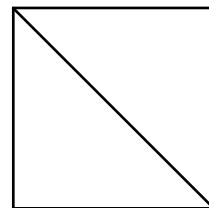
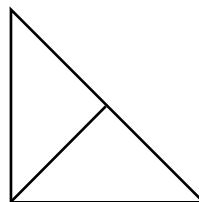
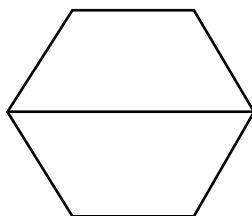
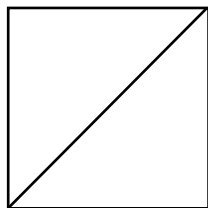
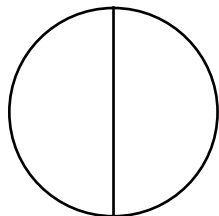
1. Have the children fold the paper plate in half.
2. Open the paper plate and cut on the folded line.
3. Label one of the pieces $\frac{1}{2}$ (as shown below).
4. Take the other piece and fold it in half.
5. Open the piece and cut on the folded line.
6. Label one of the pieces $\frac{1}{4}$ (as shown below).
7. Continue the above steps using the unlabeled piece of the plate to make fraction pieces showing $\frac{1}{8}$, $\frac{1}{16}$, and 2 pieces labeled $\frac{1}{32}$.



Activity

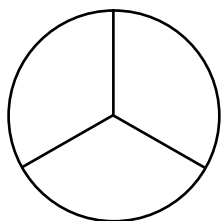
- Have the children show $\frac{1}{4}$ of the paper plate. Ask, “How many $\frac{1}{4}$ pieces are needed to make a whole paper plate?” (4)
- Have the children show $\frac{1}{16}$ of the paper plate. Ask, “How many $\frac{1}{16}$ pieces are needed to make a whole paper plate?” (16)
- Continue in this manner until the children feel comfortable working with the different fractions.

Look at the shapes below. All of the shapes are divided into 2 equal parts. When all of the parts are the same size and shape, they are called *congruent parts*.



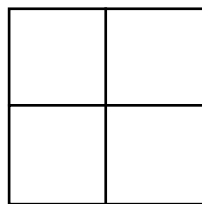
Directions: Look at all of the shapes below. All of the shapes have congruent parts. Count the number of congruent parts in each shape. Write the number on the line.

1.



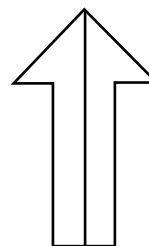
There are _____
congruent parts.

2.



There are _____
congruent parts.

3.



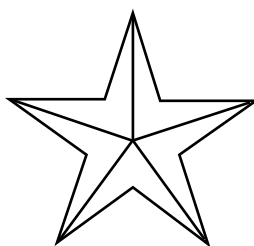
There are _____
congruent parts.

4.



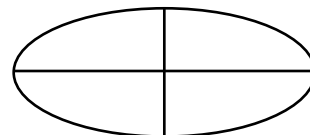
There are _____
congruent parts.

5.



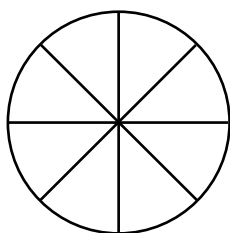
There are _____
congruent parts.

6.



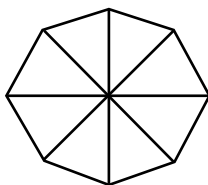
There are _____
congruent parts.

7.



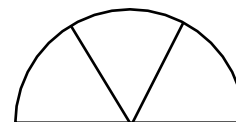
There are _____
congruent parts.

8.



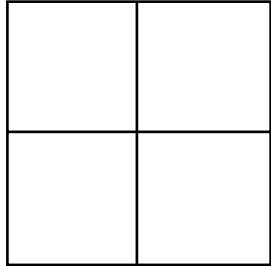
There are _____
congruent parts.

9.

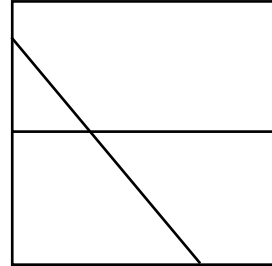


There are _____
congruent parts.

When a shape is divided equally, each piece of the shape is the same size and same shape. Look at the two squares below. One square has been divided into four congruent parts. Each part is the same size and shape. One square has been divided into four parts, but the parts are not congruent. The parts are not the same size or shape.



This square has congruent parts.



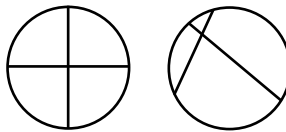
This square does not have congruent parts.

Directions: Look at each pair of shapes. Circle the one shape that has congruent parts.

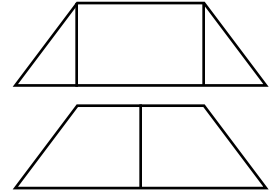
1.



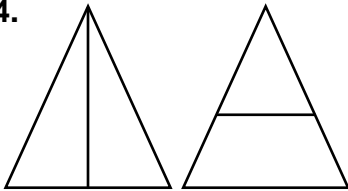
2.



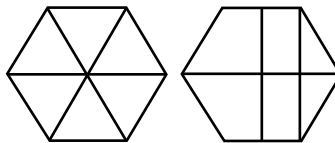
3.



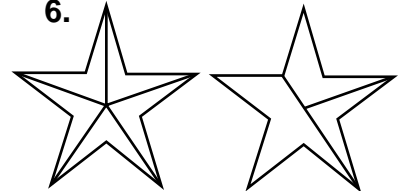
4.



5.



6.

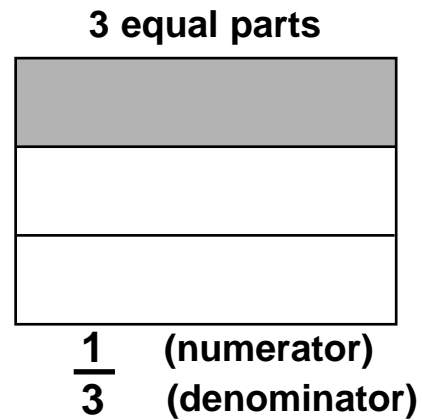


7. Draw 2 shapes. Divide one of the shapes into parts that are the same size and shape. Divide the other shape into parts that are not the same size and shape.

8. What does "congruent" mean? _____

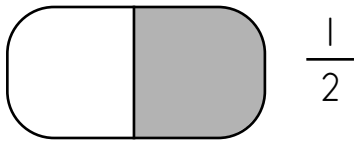
When a shape is divided into congruent parts, each part is a fraction of the shape. Follow the steps below.

1. Divide the shape into congruent parts.
2. Shade one part of the shape.
3. Next, write the fraction. When writing the fraction, the top number is called the *numerator*. The numerator tells the number of each piece (or pieces) used or needed. The bottom number is called the *denominator*. The denominator tells how many equal pieces there are in all. The fraction for one part of this rectangle is $\frac{1}{3}$.

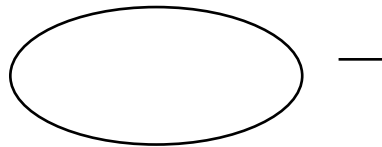


Directions: Divide each shape into congruent parts. Shade one part of the shape. Write the fraction for one part of the shape. The first one has already been done for you.

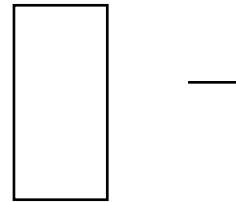
1. 2 parts



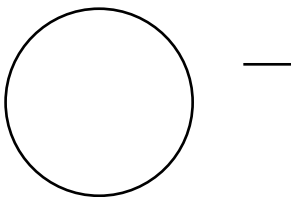
2. 4 parts



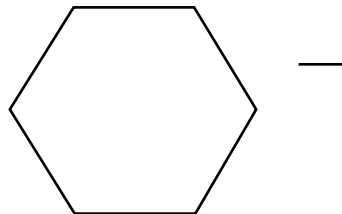
3. 3 parts



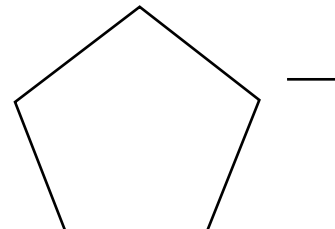
4. 4 parts



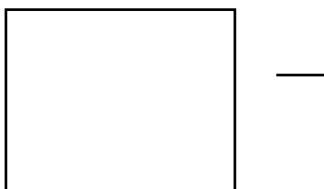
5. 6 parts



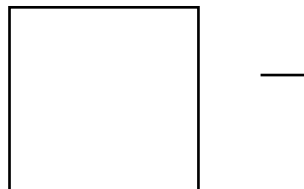
6. 5 parts



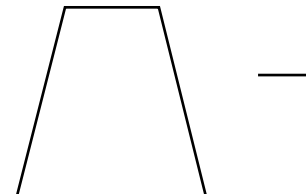
7. 8 parts



8. 4 parts



9. 3 parts





Answer Key

Page 6

1. $\frac{1}{4}$
2. $\frac{2}{3}$
3. $\frac{1}{2}$
4. $\frac{3}{8}$
5. $\frac{7}{10}$
6. $\frac{1}{3}$
7. $\frac{3}{4}$
8. $\frac{2}{4}$

Page 7

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

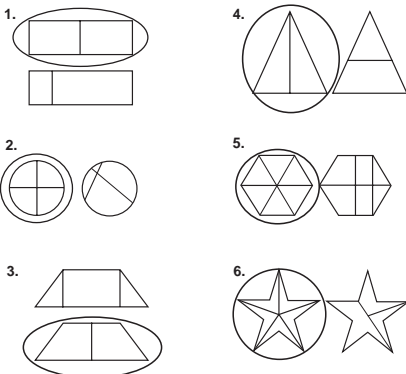
Page 8

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

Page 10

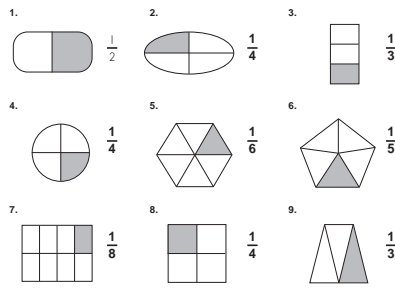
1. 3
4. 8
7. 8
2. 4
5. 5
8. 8
3. 2
6. 4
9. 3

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7. Answers will vary.
8. The parts of the shape are the same size and the same shape.

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*The above is just one way.

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1. 8 bats
2. 8, 4
3. $\frac{4}{8}$
4. 2 balls
5. 2, 1
6. $\frac{1}{2}$
7. 4 cats
8. 4, 2
9. $\frac{2}{4}$
10. 6 keys
11. 6, 3
12. $\frac{3}{6}$
13. 2 birds
14. 2, 1
15. $\frac{1}{2}$
16. 8 stars
17. 8, 4
18. $\frac{4}{8}$

Page 15

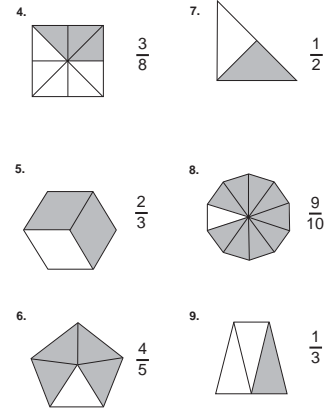
1. 9 bones; 9, 3; $\frac{3}{9}$
2. 6 books; 6, 2; $\frac{2}{6}$
3. 3 ice cream cones; 3, 1; $\frac{1}{3}$
4. 12 apples; 12, 4; $\frac{4}{12}$

Page 16

1. $\frac{1}{5}$ of 10 is 2.
Check answer:
 $2 + 2 + 2 + 2 + 2 = 10$
2. $\frac{1}{2}$ of 10 is 5.
Check answer:
 $5 + 5 = 10$
3. $\frac{1}{4}$ of 8 is 2.
Check answer:
 $2 + 2 + 2 + 2 = 8$
4. $\frac{1}{8}$ of 8 is 1.
Check answer:
 $1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 8$

Page 18

1. 1, 2, 3, 4, 5, 6
2. one whole, one half, one third, one fourth, one fifth, one sixth
3. $\frac{1}{1}$, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$



Page 19

1. $\frac{1}{3} < \frac{2}{3}$; $\frac{1}{3}$ is less than $\frac{2}{3}$.
2. $\frac{3}{4} > \frac{2}{4}$; $\frac{3}{4}$ is greater than $\frac{2}{4}$.
3. $\frac{3}{6} < \frac{5}{6}$; $\frac{3}{6}$ is less than $\frac{5}{6}$.
4. $\frac{1}{4} < \frac{3}{4}$; $\frac{1}{4}$ is less than $\frac{3}{4}$.
5. $\frac{4}{7} < \frac{5}{7}$; $\frac{4}{7}$ is less than $\frac{5}{7}$.
6. $\frac{4}{5} > \frac{1}{5}$; $\frac{4}{5}$ is greater than $\frac{1}{5}$.

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$\frac{1}{10}$, $\frac{1}{9}$, $\frac{1}{8}$, $\frac{1}{7}$, $\frac{1}{6}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$

Page 22

1. whole
2. 4 pears
3. whole
4. 3 strawberries
5. mixed
6. $3 \frac{1}{2}$ oranges
7. whole
8. 1 watermelon
9. mixed
10. $1 \frac{1}{2}$ pineapples
11. mixed
12. $2 \frac{1}{2}$ peaches
13. 1, $1 \frac{1}{2}$, $2 \frac{1}{2}$, 3, $3 \frac{1}{2}$, 4

Page 23

1. $1 \frac{1}{2}$
2. $3 \frac{1}{2}$
3. $1 \frac{1}{3}$
4. $1 \frac{1}{4}$

Page 24

1. $4 \frac{2}{3}$
2. $3 \frac{1}{2}$
3. $2 \frac{1}{3}$
4. $1 \frac{3}{4}$
5. $1 \frac{3}{4}$, $2 \frac{1}{3}$, $3 \frac{1}{2}$, $4 \frac{2}{3}$