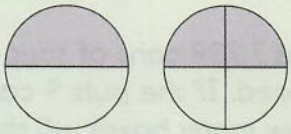
Equivalent Fractions

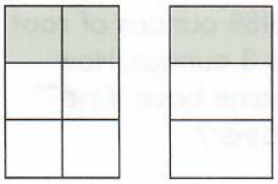
Fractions that equal the same amount are called **equivalent fractions**.

Example:

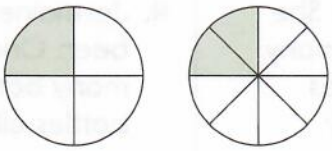


$\frac{1}{2} = \frac{2}{4}$

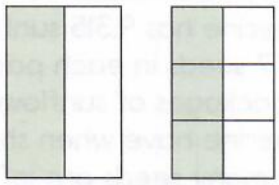
Write the equivalent fractions.



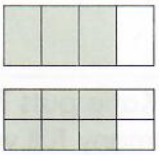
1. _____ = _____



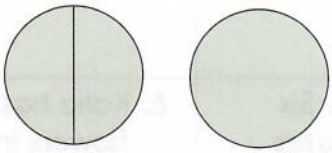
2. _____ = _____



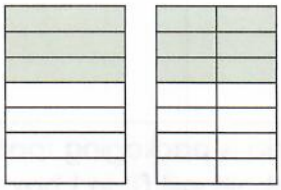
3. _____ = _____



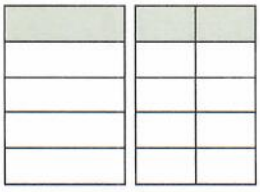
4. _____ = _____



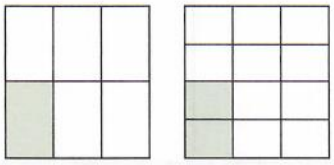
5. _____ = _____



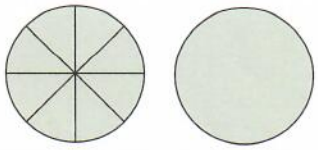
6. _____ = _____



7. _____ = _____

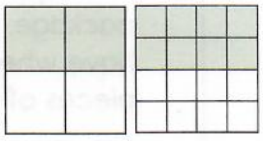


8. _____ = _____

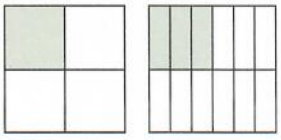


9. _____ = _____

10. _____ = _____



11. _____ = _____



12. _____ = _____

Ask your child to draw circles that represent pizzas. How many different ways can the pizzas be divided so that four people would each get an equal number of slices? Have your child write an equivalent fraction to show each person's serving for each pizza drawn.

Word Problems

Solve each problem.

1. Kyle is packaging jam in cartons. If each carton holds 9 bottles of jam, how many cartons will he need to package 1,934 bottles of jam?

2. Anna has 7,209 cans of soup that need to be boxed. If she puts 9 cans of soup in 1 box, how many boxes will she need?

3. Katherine has 9,315 sunflower seeds. She puts 7 seeds in each package. How many full packages of sunflower seeds does Katherine have when she is finished? How many seeds are left over?

4. Jermaine is bottling 6,488 ounces of root beer. One bottle holds 8 ounces. How many bottles will Jermaine have if he bottles all of the root beer?

5. Mario is packaging footballs in a box. Six footballs will fit in 1 box. How many boxes will Mario need if he has to package 288 footballs?

6. Katie has 2,837 flowers. If Katie puts 7 flowers in each vase, how many full vases will Katie have when she is finished?

7. Leo is bottling soda. Each bottle holds 7 ounces. How many bottles does Leo need if he has 2,786 ounces of soda to bottle?

8. Jenny is packaging fruit. She has 349 apples, 328 pears, and 548 oranges. If she puts 4 pieces of fruit in each package, how many full packages will she have when she is finished? How many pieces of fruit will be left?

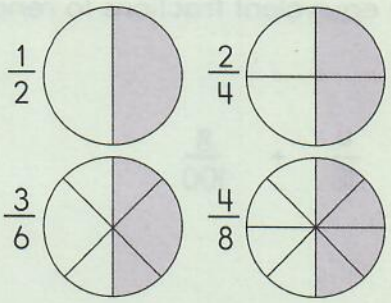
Helping at Home

Explain that the average person spends 1,638 hours each year involved in sports and leisure activities. Ask your child to calculate how many hours are spent in sports and leisure activities each month. Each week? Each day?

Equivalent Fractions

Equivalent fractions are fractions that are equal. To find equivalent fractions, multiply any fraction by 1, or by another name for the number 1. Think about it as multiplying the numerator and the denominator by the same number.

$\frac{1}{2} \times \frac{2}{2} = \frac{\mathbf{2}}{\mathbf{4}}$ $\frac{1}{2} \times \frac{3}{3} = \frac{\mathbf{3}}{\mathbf{6}}$ $\frac{1}{2} \times \frac{4}{4} = \frac{\mathbf{4}}{\mathbf{8}}$



Cross out the fraction that is not equivalent to the first.

1. $\frac{1}{3} = \frac{2}{6}\ \frac{3}{9}\ \frac{4}{8}\ \frac{5}{15}\ \frac{6}{18}$

2. $\frac{1}{4} = \frac{2}{8}\ \frac{3}{6}\ \frac{4}{16}\ \frac{5}{20}\ \frac{6}{24}$

3. $\frac{1}{5} = \frac{2}{6}\ \frac{2}{10}\ \frac{3}{15}\ \frac{4}{20}\ \frac{5}{25}$

4. $\frac{2}{3} = \frac{4}{6}\ \frac{6}{9}\ \frac{8}{16}\ \frac{10}{15}\ \frac{12}{18}$

Fill in the missing number.

5. $\frac{1}{4} = \frac{3}{\square}$

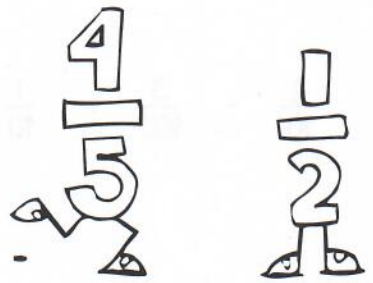
6. $\frac{2}{\square} = \frac{4}{6}$

7. $\frac{5}{8} = \frac{\square}{16}$

8. $\frac{3}{4} = \frac{9}{\square}$

9. $\frac{\square}{6} = \frac{2}{12}$

10. $\frac{2}{3} = \frac{\square}{9}$



Helping at Home

After completing this page, ask your child to choose one item from items 5–10 to illustrate with partitioned circles. The illustration at the top of the page can serve as a model. Ask your child to tell how he or she knows that the fractions are equivalent.

Equivalent Fractions

Use equivalent fractions to rename one fraction or more in each pair. Then, add the fractions.

1. $\frac{4}{10} + \frac{8}{100}$

2. $\frac{3}{100} + \frac{7}{10}$

3. $\frac{1}{100} + \frac{9}{10}$

4. $\frac{3}{10} + \frac{7}{100}$

5. $\frac{9}{100} + \frac{9}{10}$

6. $\frac{11}{10} + \frac{11}{100}$

7. $\frac{2}{100} + \frac{3}{10}$

8. $\frac{5}{10} + \frac{7}{100}$

9. $\frac{2}{10} + \frac{3}{100} + \frac{1}{10}$

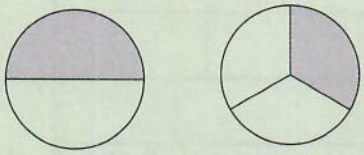
10. $\frac{5}{10} + \frac{7}{100} + \frac{5}{100}$

Helping at Home

Ask your child to explain how many zeros he or she added to the numerator and denominator of one fraction in each item on the page. Then, challenge your child to change both fractions in one item to equivalent fractions with a denominator of 1,000.

Comparing Fractions

To compare fractions, determine which figure has more area shaded. If necessary, calculate equivalent fractions and compare the numerators.



$\frac{1}{2} > \frac{1}{3}$

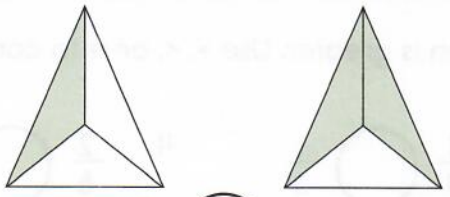
$\frac{1}{2} = \frac{3}{6}$

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

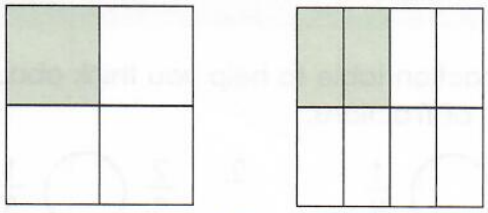
$\frac{3}{6} > \frac{2}{6}$

Write a fraction for the shaded area of each figure. Then, write <, >, or = to compare each pair of fractions.

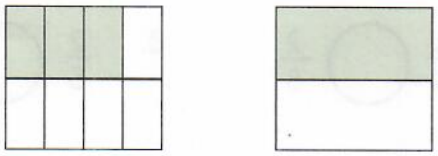
1.



2.

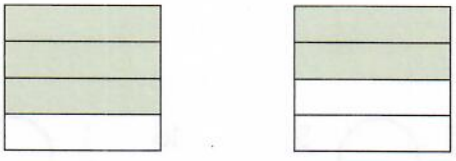


3.

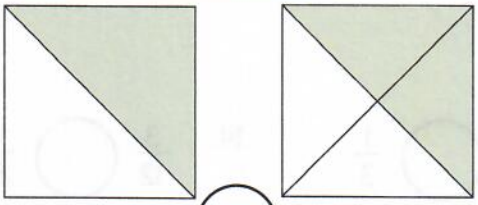


4.

5.



6.



Helping at Home

After completing this page, ask your child to take the extra step of writing equivalent fractions with the same denominator for each pair of shapes. Which method of comparison does your child think is easier—comparing illustrations or comparing equivalent fractions?

Comparing Fractions

The more parts the whole is divided into, the smaller the fraction is.

$\frac{1}{2}$	
$\frac{1}{3}$	
$\frac{1}{4}$	
$\frac{1}{5}$	
$\frac{1}{6}$	
$\frac{1}{8}$	
$\frac{1}{10}$	
$\frac{1}{12}$	

Use the fraction table to help you think about which fraction is greater. Use >, <, or = to compare each pair of fractions.

1. $\frac{1}{2} \bigcirc \frac{1}{4}$
2. $\frac{2}{3} \bigcirc \frac{1}{3}$
3. $\frac{1}{4} \bigcirc \frac{1}{6}$
4. $\frac{2}{6} \bigcirc \frac{1}{3}$
5. $\frac{4}{8} \bigcirc \frac{2}{10}$
6. $\frac{1}{12} \bigcirc \frac{1}{10}$
7. $\frac{3}{4} \bigcirc \frac{2}{8}$
8. $\frac{2}{5} \bigcirc \frac{1}{3}$
9. $\frac{3}{8} \bigcirc \frac{10}{12}$
10. $\frac{2}{8} \bigcirc \frac{1}{4}$
11. $\frac{1}{5} \bigcirc \frac{2}{10}$
12. $\frac{1}{3} \bigcirc \frac{2}{4}$
13. $\frac{1}{6} \bigcirc \frac{1}{3}$
14. $\frac{3}{12} \bigcirc \frac{1}{3}$
15. $\frac{5}{10} \bigcirc \frac{3}{6}$
16. $\frac{1}{2} \bigcirc \frac{6}{10}$

Helping at Home

Ask your child to use the chart at the top of this page to write a set of four equivalent fractions. For example, these fractions are equivalent: $\frac{1}{2}, \frac{3}{6}, \frac{4}{8}, \frac{6}{12}$.