Exploring Fractions of a Set

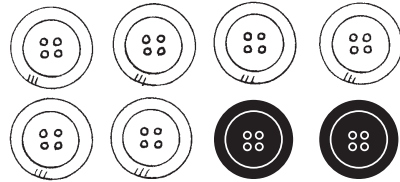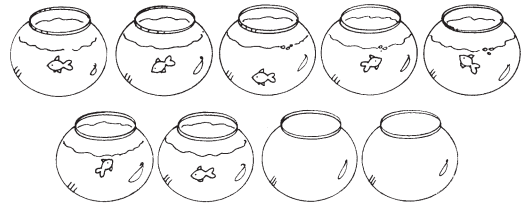At Home At School

Quick Review

To find a fraction of a set, start by counting.

➤ There are 8 buttons.
6 of the 8 buttons are white.
$\frac{6}{8}$ of the buttons are white.
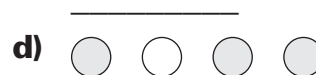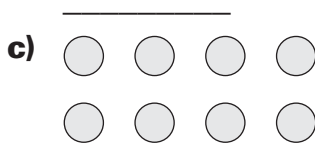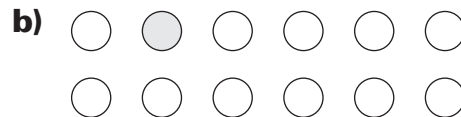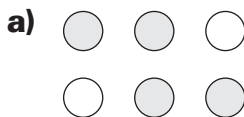$\frac{2}{8}$ of the buttons are black.

➤ There are 9 fish bowls.
7 of the 9 fish bowls have a fish.
$\frac{7}{9}$ of the fish bowls have a fish.
$\frac{2}{9}$ of the fish bowls are empty.

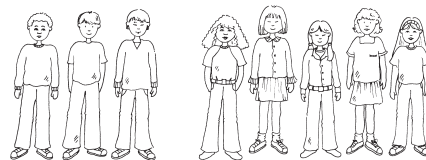## Try These

1. What fraction of each set is shaded?

   a) _____

   b) _____

   c) _____

   d) _____

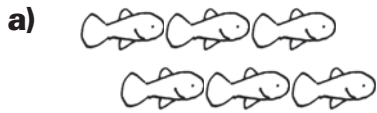2. Here are the children who signed up for the chess club.
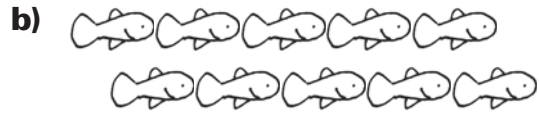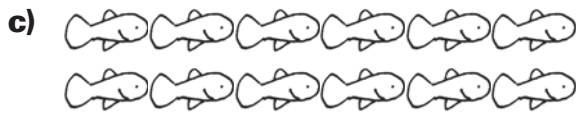
   What fraction are boys? _____

   What fraction of the children are girls? _____

1. Colour some of the fish in each set.
   Write to tell what fraction you coloured.

   a)

   _____

   b)

   _____

   c)

   _____

   d)

   _____
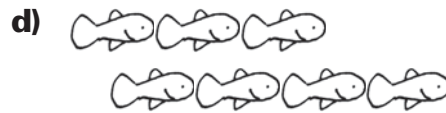
2. **a)** Marvin has 8 pets.
   $\frac{2}{8}$ of the pets are cats.
   $\frac{3}{8}$ of the pets are dogs.
   The rest are hamsters.
   Draw Marvin's pets.
   b) Suppose Marvin gets 1 more cat.
   What fraction of his pets will be cats?

   _____
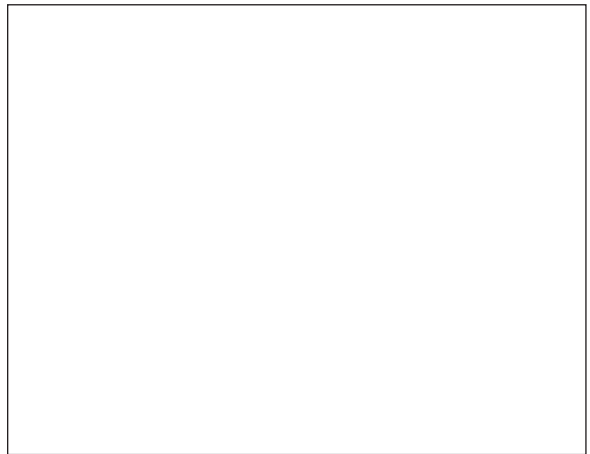
Stretch Your Thinking

Three of Sally's pencils are broken.
That's 1 quarter of Sally's pencils.
How many pencils does Sally have?
Use pictures, words, and numbers
to show your answer.

_____

Finding a Fraction of a Set

Quick Review
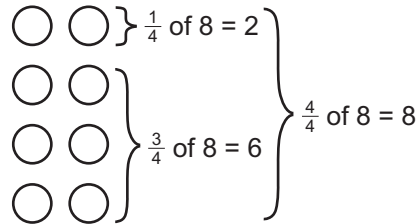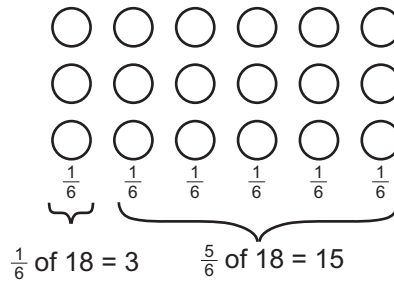
At Home
At School

You can use fractions to show equal parts of a set.

$\frac{1}{4}$ of 8 = 2

$\frac{3}{4}$ of 8 = 6

$\frac{4}{4}$ of 8 = 8

Here is a way to find $\frac{5}{6}$ of 18.

The denominator lets us know we are counting sixths.
Divide 18 counters into 6 equal groups to show sixths.

$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$

$\frac{1}{6}$ of 18 = 3 $\frac{5}{6}$ of 18 = 15

Try These

Draw a picture to show the fraction of each set.

1.

$\frac{1}{2}$ of 10 = _____

2.

$\frac{2}{3}$ of 9 = _____

3.

$\frac{4}{5}$ of 15 = _____

4.

$\frac{1}{4}$ of 12 = _____

1. Write a fraction for the shaded part of each set.

   a)

   b)

   c)

   _____   _____   _____

2. Use counters to find the fraction of each set.

   a) $\frac{1}{2}$ of 14 = _____   b) $\frac{2}{6}$ of 18 = _____   c) $\frac{3}{5}$ of 15 = _____
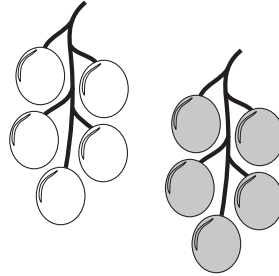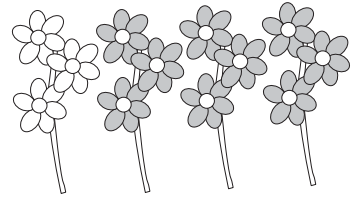
   d) $\frac{3}{8}$ of 16 = _____   e) $\frac{3}{4}$ of 12 = _____   f) $\frac{6}{10}$ of 20 = _____

   g) $\frac{7}{7}$ of 14 = _____   h) $\frac{7}{8}$ of 24 = _____   i) $\frac{2}{3}$ of 15 = _____

3. On Pet Day, 18 children brought a pet to school.
   Two-thirds of the pets were dogs. One-ninth of the pets were cats.

   a) How many dogs were there? _____

   b) How many cats were there? _____

   c) How many animals were neither dogs nor cats? _____

Stretch Your Thinking

1. Choose letters from the box.

   a) Write a word that uses $\frac{1}{2}$ of the letters.

   _____

   b) Write a word that uses $\frac{3}{5}$ of the letters.

   _____

   A I T

   M U L

   R

   O E S