Lesson 8 | Finding Equivalent Fractions

Problem Solving: Line Graphs

Finding Equivalent Fractions

How do we make equivalent fractions?

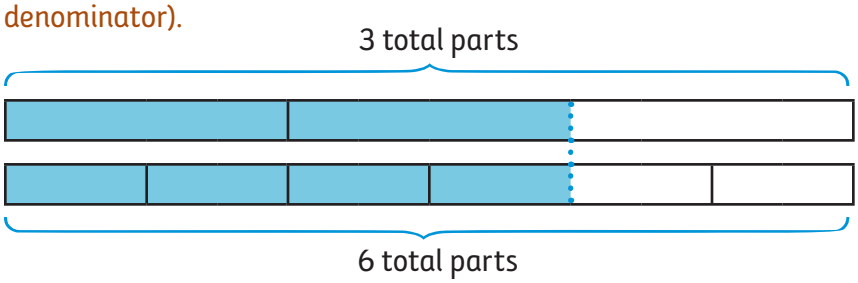
We have looked at equivalent fractions using fraction bars. Here are two more fraction bars we can use to identify equivalent fractions.

STEP 1

Look to see if the shaded parts of the fraction bars line up.

STEP 2

Identify the fractions. We write the total parts for each fraction (the denominator).

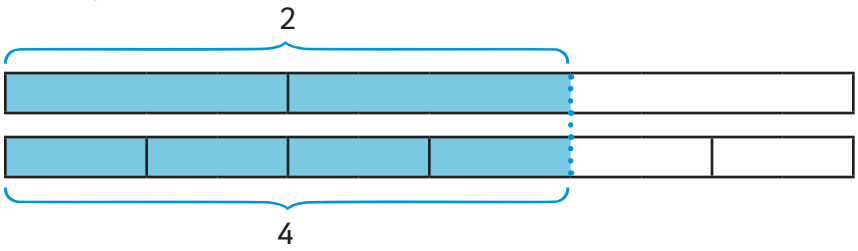


Remember, the total parts tell us the denominator.

- The top bar has a denominator of 3. $\frac{}{3}$
- The bottom bar has a denominator of 6. $\frac{}{6}$

STEP 3

Identify the number of parts in each fraction (the numerator).



- The top bar has a numerator of 2. $\frac{2}{}$
- The bottom bar has a numerator of 4. $\frac{4}{}$

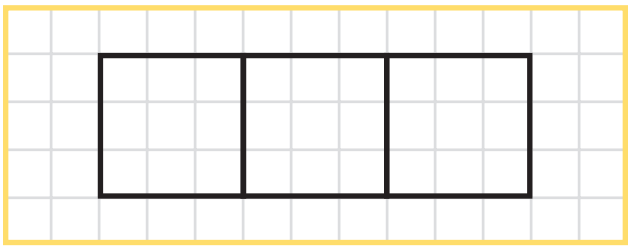
We see that $\frac{2}{3}$ and $\frac{4}{6}$ are equivalent fractions.

Is there another way to make equivalent fractions?

Another way to make equivalent fractions is to use a grid like the one shown in the illustration below. A portion of the grid is divided into thirds. The illustrations show the steps for making $\frac{1}{3}$ equivalent to $\frac{3}{9}$ by drawing horizontal lines within the grid.

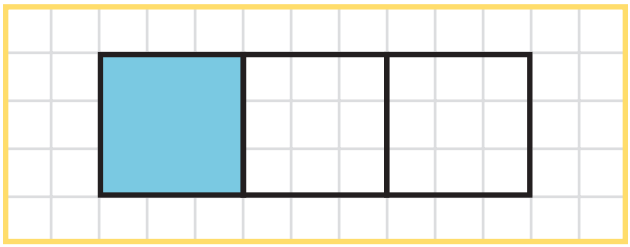
STEP 1

Draw a rectangle divided on a grid.



STEP 2

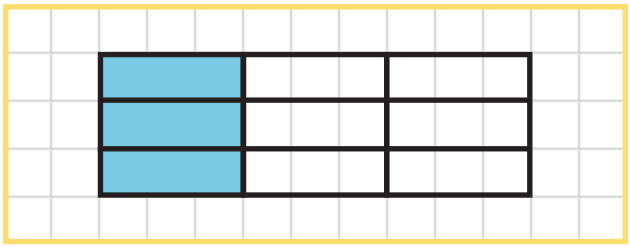
Shade part of the rectangle to make the fraction.



STEP 3

Find an equivalent fraction by drawing horizontal lines in the rectangle.

The horizontal lines make smaller rectangles that are the same size in each third.



Remember fair shares. Each part needs to be the same size.

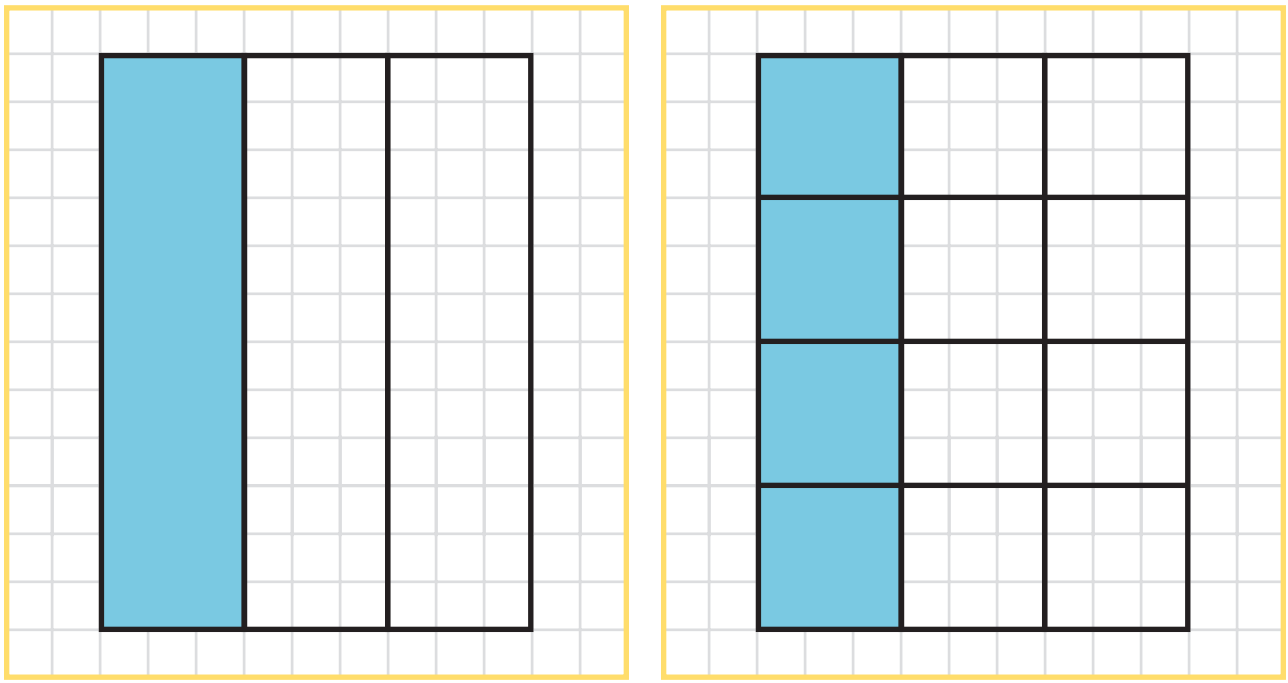
We see that $\frac{1}{3} = \frac{3}{9}$.

We can do the same thing with even larger rectangles.

Example 1

Make $\frac{1}{3}$ equal to $\frac{4}{12}$ using grids.

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



We broke up the rows that showed $\frac{1}{3}$ into smaller squares. We drew heavy lines through all three rows to make 12 squares. Remember fair shares.

Each part has to be the same size.

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

We now have 12 total parts with 4 parts shaded.

Apply Skills
Turn to ***Interactive Text***, page 22.

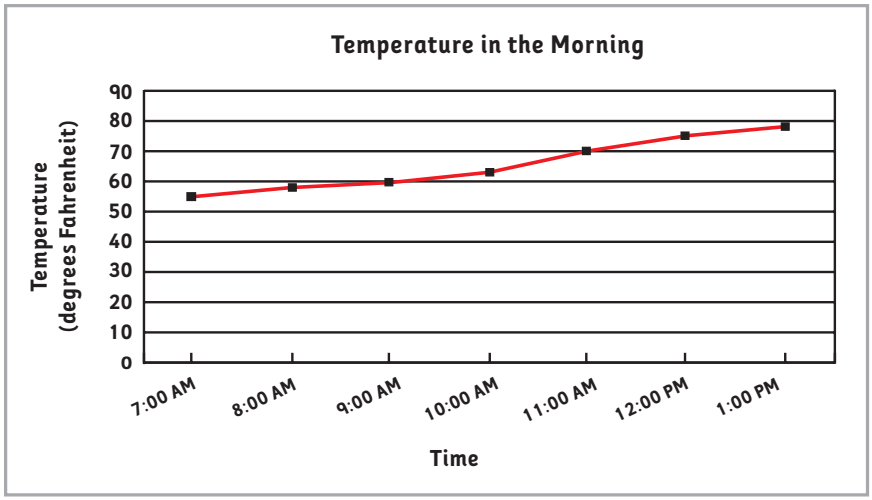
mBook Reinforce Understanding
Use the ***mBook Study Guide*** to review lesson concepts.

Problem Solving: Line Graphs

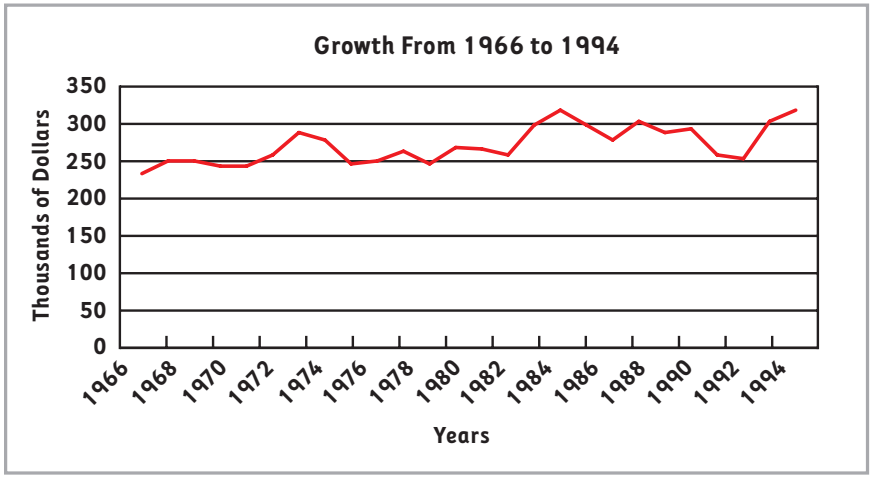
Vocabulary
line graph

What are line graphs?

We discussed both vertical and horizontal bar graphs as well as pictographs. Another type of graph is the **line graph**. Line graphs show changes over time. We use line graphs when the change from one data point to the next is smooth or constant. For example, we can use line graphs to show changes in temperature over time. The data for line graphs is usually measured, not counted.



We can also use line graphs to show trends over a long period of time. Line graphs are much easier to read than a series of very thin vertical bars in a bar graph. Notice that there are no dots on this graph. This is because there are so many data points that the dots would be on top of each other. It's easier just to make a line.



Problem-Solving Activity
Turn to ***Interactive Text***, page 23.

mBook Reinforce Understanding
Use the ***mBook Study Guide*** to review lesson concepts.

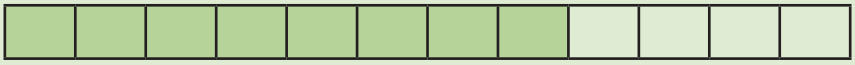
Homework

Activity 1

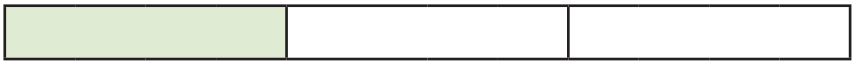
Use the fraction bars to find the equivalent fraction.

Model $\frac{2}{3}$

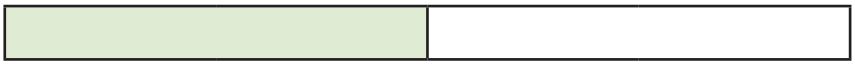
Answer:



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



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



3. $\frac{2}{5}$

Activity 2

Find the median and the mean from the quarterly sales table.

Sales in Thousands of Dollars					
Quarter	**2001**	**2002**	**2003**	**2004**	**2005**
1	45	35	40	65	55
2	65	55	50	75	50
3	85	75	60	85	65
4	90	80	70	95	60

Activity 3 • Distributed Practice

Solve.

1. $216 + 718$

2. $467 - 174$

3. 43×72

4. $16\overline{)336}$

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