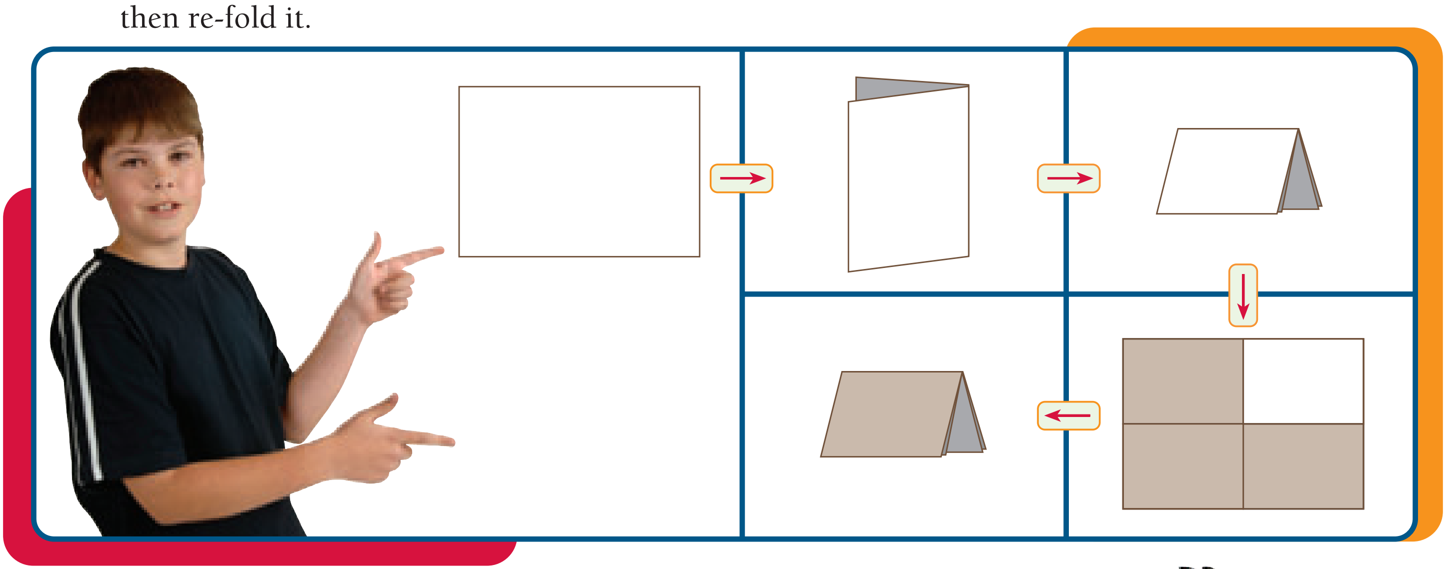
Paper Partitions

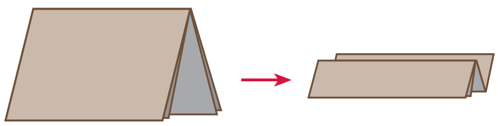
You need ☑ A4 paper ☑ a classmate

Activity One

Fold an A4 sheet of paper into quarters. Open it out, shade three-quarters of it, then re-fold it.



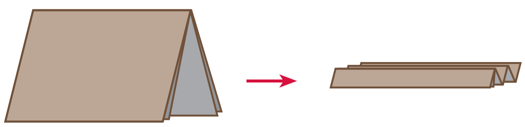
1. Now fold the quarters into thirds, like this:



   a. How many parts will the sheet be folded into? How many of those parts will be shaded?

   b. Open the sheet out and complete: $\frac{3}{4} = \frac{\square}{\square}$

2. Fold another sheet into quarters, open it out and shade three-quarters of it, then fold the quarters into fifths, like this:



   a. How many parts will the sheet be folded into? How many of those parts will be shaded?

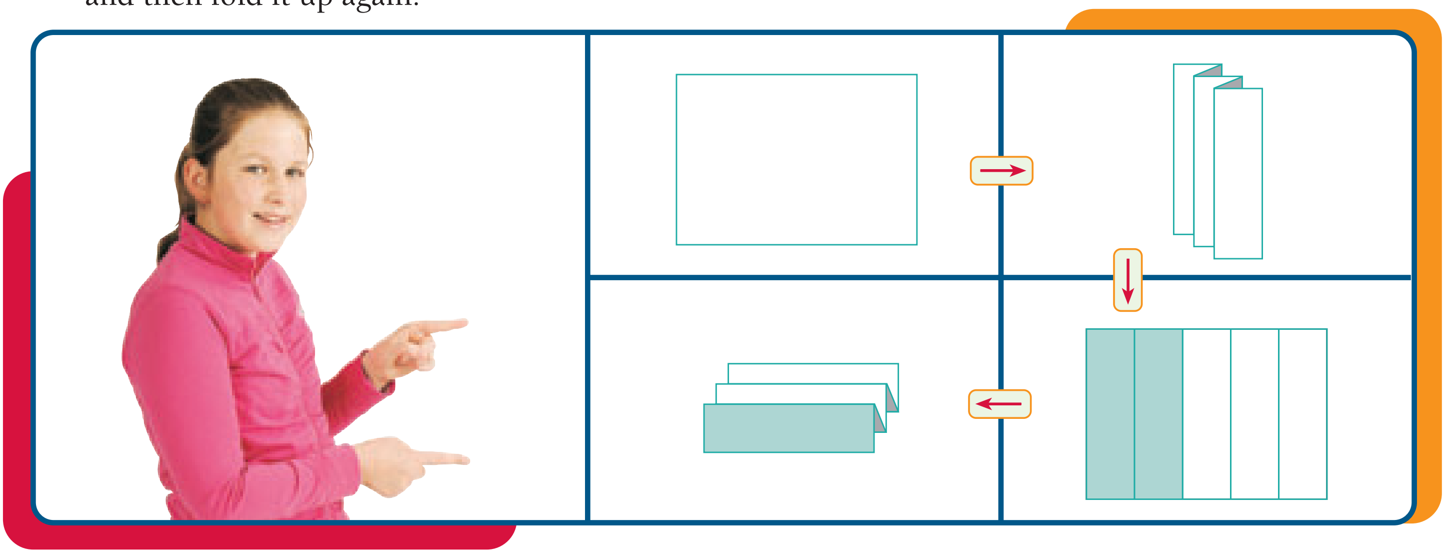
   b. Open the sheet out and complete: $\frac{3}{4} = \frac{\square}{\square}$

3. Fold another sheet into quarters, then fold again to solve these problems:

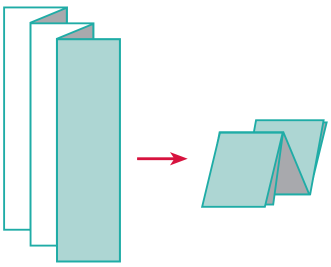
   a. $\frac{3}{4} = \frac{\square}{8}$ b. $\frac{3}{4} = \frac{\square}{16}$ c. $\frac{3}{4} = \frac{\square}{100}$

Activity Two

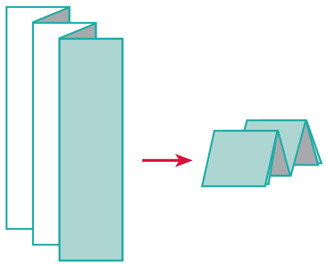
Fold an A4 sheet of paper into fifths. Open it out, shade two-fifths of it, and then fold it up again:



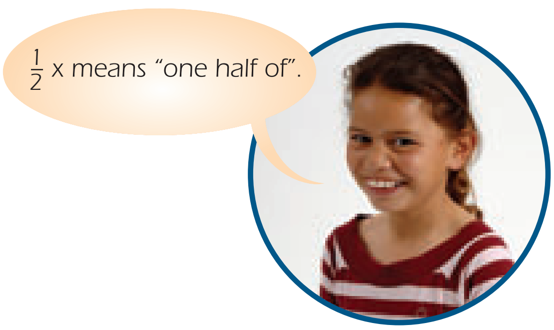
1. If you now fold the fifths into thirds, how many parts will the sheet be folded into? How many of those parts will be shaded?

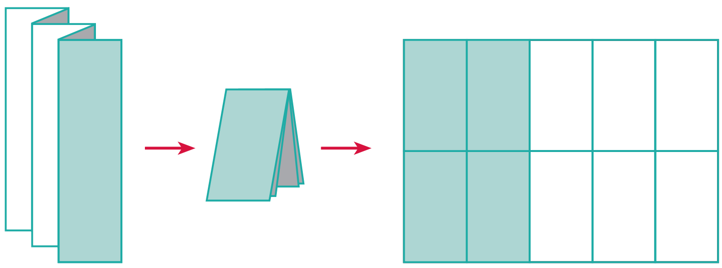


2. If you fold the fifths into quarters, how many parts will the sheet be folded into? How many of those parts will be shaded?



3. If you fold the fifths in half, you could write the equation $\frac{2}{5} = \frac{4}{10}$ and show that $\frac{1}{2} \times \frac{2}{5} = \frac{2}{10}$.





a. Discuss with a classmate how the folded sheet models these two equations.

b. What equations could you write for question **1**?

c. What equations could you write for question **2**?

4. Use paper folding or your own strategy to complete these equations:

a.	$\frac{5}{6} = \frac{\square}{12}$	b.	$\frac{1}{3} \times \frac{5}{6} = \frac{5}{\square}$	c.	$\frac{5}{6} = \frac{15}{\square}$
d.	$\frac{3}{8} = \frac{\square}{24}$	e.	$\frac{1}{4} \times \frac{3}{8} = \frac{3}{\square}$	f.	$\frac{2}{5} \times \frac{2}{3} = \frac{\square}{15}$