Name _____ Date _____

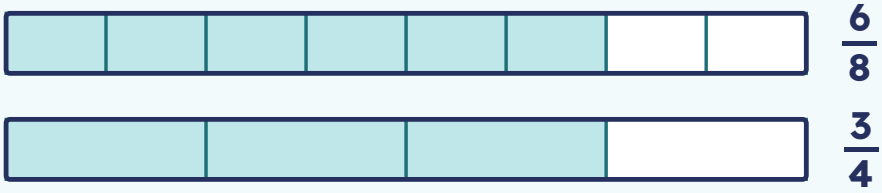
Simplest form

Simplify fractions by dividing the top and bottom by a common factor.

1 Learn



Simplifying (schools often say **cancelling**) writes a fraction with smaller numbers but the **same amount**. Divide the top and the bottom by the same common factor.



The same amount is shaded. Put the eighths in pairs (÷ 2) and they make quarters: $^{6}/_{8} = {}^{3}/_{4}$.

Simplify $^{12}/_{18}$

1. Factors of 12: 1, 2, 3, 4, 6, 12. Factors of 18: 1, 2, 3, 6, 9, 18.
2. The highest common factor (HCF) is **6**.
3. Divide both by 6: 12 ÷ 6 = **2** and 18 ÷ 6 = **3**. So $^{12}/_{18} = {}^{2}/_{3}$.
4. Only 1 divides into both 2 and 3, so $^{2}/_{3}$ is in its **simplest form**.

Flip's tip: always **divide**, never take away. If you use a smaller common factor (like 2), that's fine: just keep going until only 1 divides into both numbers.

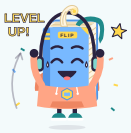
Warm up: find the highest common factor.

4 and 10 ☐	**9 and 12** ☐	**10 and 15** ☐	**8 and 24** ☐

Grown-ups: read Flip's words aloud. Your child may know this as "cancelling". The fraction's size never changes: only the numbers in it get smaller.

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2 Try it together a child and a grown-up, about 10 minutes



Fold and cover

You need: a sheet of paper, a pencil and 6 coins or buttons. (Or a sandwich a grown-up cuts into 8 equal pieces!)

1. Fold the paper in half, in half again, and in half once more. Open it out: you have **8 equal parts**. Draw along the folds.
2. Cover **2 parts** with coins. What fraction is **not** covered? Write it in eighths.
3. Look at the uncovered parts in **pairs** (two eighths make a quarter). How many quarters are uncovered? That's the fraction simplified.
4. Do the other rows. Can you simplify any further?

Parts covered	Not covered (eighths)	Simplest form	We divided by…
2			
4			
6			

Grown-ups: with 4 covered, $^{4}/_{8}$ goes to $^{2}/_{4}$ in pairs, and then to $^{1}/_{2}$: fold the paper in half to show it. Ask "Is $^{2}/_{4}$ as simple as it gets?"

3 Practise

A. Draw a line to match each fraction to its simplest form.

$\frac{4}{6}$ •	• $\frac{3}{4}$
$\frac{5}{10}$ •	• $\frac{1}{5}$
$\frac{6}{8}$ •	• $\frac{2}{3}$
$\frac{4}{20}$ •	• $\frac{1}{2}$

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B. Simplify each fraction fully.

$\frac{9}{12} = \frac{\square}{\square}$ $\frac{10}{16} = \frac{\square}{\square}$ $\frac{15}{20} = \frac{\square}{\square}$

$\frac{14}{35} = \frac{\square}{\square}$ $\frac{18}{24} = \frac{\square}{\square}$ $\frac{24}{40} = \frac{\square}{\square}$

C. Draw a ring round the fractions that are **already** in simplest form.

$\frac{3}{8}$ $\frac{4}{10}$ $\frac{5}{9}$ $\frac{6}{15}$ $\frac{7}{12}$ $\frac{9}{21}$

D. Fill in the missing numbers.

$\frac{12}{30} = \frac{\square}{5}$ $\frac{21}{28} = \frac{3}{\square}$ $\frac{\square}{45} = \frac{1}{3}$

Challenge

Leo simplified $\frac{8}{12}$ by taking 6 away from the top and the bottom. He got $\frac{2}{6}$.

Is he right? How should he simplify it?

I can… Tick when you can.

- ☐ find the highest common factor of the top and bottom numbers
- ☐ divide the top and bottom by the same number
- ☐ check my fraction is in its simplest form