

ADDING FRACTIONS WITH DIFFERENT DENOMINATOR



Homework might ask your child to add fractions that have a different denominator, or bottom number.

To do this, they need to find a **common denominator** – a denominator that will work with both fractions.

Find out here:

- what a common denominator is;
- how to find a common denominator for different fractions;
- how to change fractions to the same denominator, and -
- how to get your final answer.

Sometimes, homework questions ask you to add fractions with a different denominator, or bottom number.

For example, they might ask, 'Add $\frac{1}{3}$ and $\frac{1}{8}$ '.

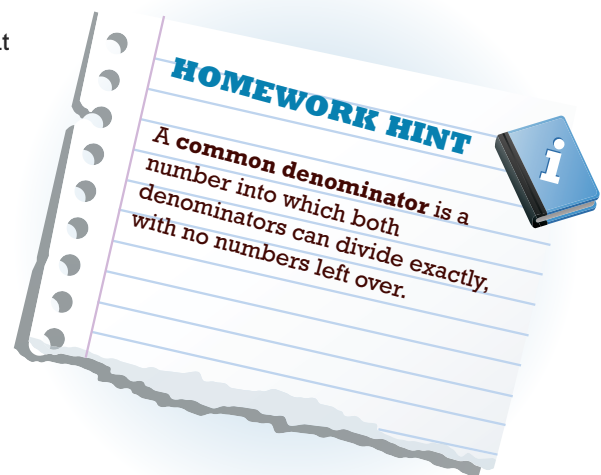
It's just a few extra steps to get the answer.

First, your child has to change both denominators so that they are the same. They have to find the **common denominator** for these fractions.

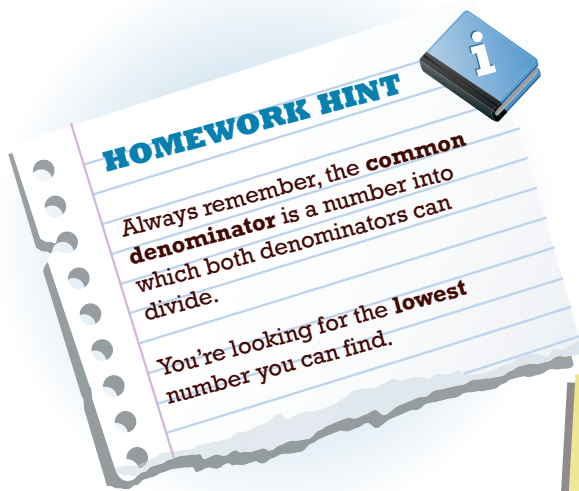
For example, looking at $\frac{1}{3}$ and $\frac{1}{8}$...

...the common denominator is **24**. How do we work this out?

- The first denominator, 3 divides exactly into 24. 24 divided by 3 equals 8.



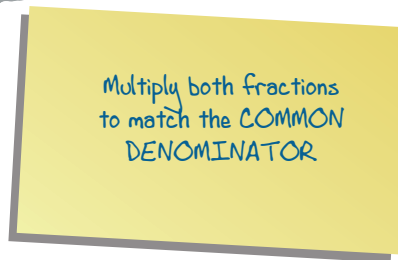
$$24 \div 3 = 8$$



- Also, the second denominator, 8 divides exactly into 24 as well. 24 divided by 8 equals 3.

$$24 \div 8 = 3$$

Once you've found the common denominator, convert the two fractions so that both have the common denominator as their bottom number.



Using our example from before:

- $\frac{1}{3}$ becomes $\frac{8}{24}$.

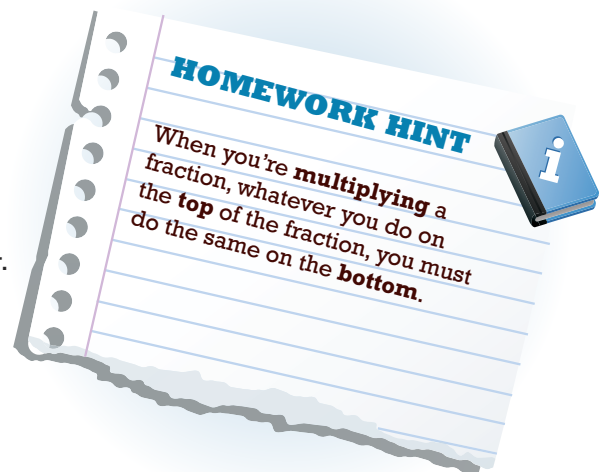
We multiply the bottom by 8 and then the top by 8 to change the fraction to the common denominator.

$$\frac{1}{3} \times 8 = \frac{8}{24}$$

- $\frac{1}{8}$ becomes $\frac{3}{24}$.

$$\frac{1}{8} \times 3 = \frac{3}{24}$$

We multiply the bottom by 3 and then the top by 3 to change the fraction to the common denominator.



So, what's next?

You're ready now to add the converted fractions together.

$$\frac{8}{24} + \frac{3}{24} = \frac{11}{24}$$

So $\frac{1}{3}$ plus $\frac{1}{8}$:

- $= \frac{8}{24} + \frac{3}{24}$;
- $= \frac{11}{24}$.

Just remember to follow all the steps!

$$\frac{1}{3} + \frac{1}{8} = \frac{8}{24} + \frac{3}{24} = \frac{11}{24}$$

HOMEWORK HINT

Your three steps for adding fractions with a **different denominator**:

- Find the common denominator for both fractions.
- Change both fractions so that they both have the new denominator.
- Add the fractions together.)