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Maths Tasks – Blue Challenge

When adding fractions with the same denominator, you must only add the numerators and then put the answer over the same denominator.

e.g.

$$\frac{5}{12} + \frac{2}{12} = \frac{7}{12}$$

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

$$\frac{4}{12} + \frac{5}{12} = \frac{9}{12}$$

$$\frac{1}{10} + \frac{4}{10} = \frac{5}{10}$$

$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

$$\frac{1}{9} + \frac{3}{9} = \frac{4}{9}$$

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

$$\frac{4}{11} + \frac{4}{11} = \frac{8}{11}$$

$$\frac{1}{11} + \frac{4}{11} = \frac{5}{11}$$

$$\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$$

$$\frac{1}{10} + \frac{5}{10} = \frac{6}{10}$$

$$\frac{1}{6} + \frac{3}{6} = \frac{4}{6}$$

$$\frac{2}{9} + \frac{6}{9} = \frac{8}{9}$$

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

$$\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$$

More blue challenge on the next page

For each calculation, work out the answer and write as an improper fraction.

As an extra challenge, can you convert your answer to a mixed number?

$$\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$$

$$\frac{8}{5} + \frac{3}{5} = \frac{11}{5} = 2\frac{1}{5}$$

$$\frac{3}{8} + \frac{6}{8} = \frac{9}{8} = 1\frac{1}{8}$$

$$\frac{7}{8} + \frac{7}{8} = \frac{14}{8} = 1\frac{6}{8}$$

$$\frac{5}{9} + \frac{5}{9} = \frac{10}{9} = 1\frac{1}{9}$$

$$\frac{8}{9} + \frac{6}{9} = \frac{14}{9} = 1\frac{5}{9}$$

$$\frac{6}{4} + \frac{1}{4} = \frac{7}{4} = 1\frac{3}{4}$$

$$\frac{10}{4} + \frac{2}{4} = \frac{12}{4} = 3$$

$$\frac{5}{6} + \frac{4}{6} = \frac{9}{6} = 1\frac{3}{6}$$

$$\frac{6}{6} + \frac{8}{6} = \frac{14}{6} = 2\frac{2}{6}$$

Now solve these calculations where you need to add three fractions.

If the answer is greater than one whole, write your answer as an improper fraction.

As an extra challenge, can you convert your improper fraction to a mixed number?

$$\frac{2}{8} + \frac{4}{8} + \frac{1}{8} = \frac{7}{8}$$

$$\frac{3}{7} + \frac{4}{7} + \frac{2}{7} = \frac{9}{7} = 1\frac{2}{7}$$

$$\frac{4}{9} + \frac{3}{9} + \frac{1}{9} = \frac{8}{9}$$

$$\frac{4}{5} + \frac{3}{5} + \frac{2}{5} = \frac{9}{5} = 1\frac{4}{5}$$

$$\frac{3}{6} + \frac{2}{6} + \frac{2}{6} = \frac{7}{6} = 1\frac{1}{6}$$

$$\frac{6}{6} + \frac{3}{6} + \frac{2}{6} = \frac{11}{6} = 1\frac{5}{6}$$

$$\frac{2}{3} + \frac{4}{3} + \frac{1}{3} = \frac{7}{3} = 2\frac{1}{3}$$

$$\frac{5}{3} + \frac{1}{3} + \frac{3}{3} = \frac{9}{3} = 3$$

$$\frac{6}{10} + \frac{2}{10} + \frac{4}{10} = \frac{12}{10} = 1\frac{2}{10}$$

$$\frac{5}{10} + \frac{7}{10} + \frac{8}{10} = \frac{20}{10} = 2$$

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Maths Tasks – Green Challenge

DIFFERENT DENOMINATORS

Convert one of the fractions to an equivalent fraction with the same denominator as the other fraction.

Examples

$$\frac{5}{8} + \frac{1}{4} = \frac{5}{8} + \frac{2}{8} = \frac{7}{8}$$

Complete the additions.

Use the bar models to help you.

a)



$$\frac{1}{2} + \frac{1}{6} = \frac{2}{3}$$

b)



$$\frac{1}{3} + \frac{1}{6} = \frac{1}{2}$$

c)



$$\frac{2}{3} + \frac{1}{6} = \frac{5}{6}$$

Match the additions that have the same answer.

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

$$\frac{10}{12} + \frac{1}{12}$$

$$\frac{2}{3} + \frac{1}{12}$$

$$\frac{6}{12} + \frac{1}{12}$$

$$\frac{5}{6} + \frac{1}{12}$$

$$\frac{9}{12} + \frac{1}{12}$$

$$\frac{1}{2} + \frac{1}{12}$$

$$\frac{8}{12} + \frac{1}{12}$$

More green challenge on the next page...

Convert one of the fractions to an equivalent fraction with the same denominator.

The denominator to use is shown for you.

Now have a go at converting one of the fractions to an equivalent fraction with the same denominator.

This time, the denominator is not given to you so you will need to look carefully...

The image shows four rows of fraction addition problems. Each row has a fraction with a missing numerator, followed by an equals sign, a fraction with a missing denominator, a plus sign, another fraction with a missing numerator, an equals sign, and a final fraction with a missing denominator. The missing values are indicated by red numbers inside boxes.

$$\frac{2}{3} + \frac{1}{9} = \frac{\boxed{6}}{9} + \frac{1}{9} = \frac{\boxed{7}}{9}$$
$$\frac{1}{2} + \frac{2}{6} = \frac{\boxed{3}}{6} + \frac{2}{6} = \frac{\boxed{5}}{6}$$
$$\frac{3}{8} + \frac{1}{4} = \frac{3}{8} + \frac{\boxed{2}}{\boxed{8}} = \frac{\boxed{5}}{\boxed{8}}$$
$$\frac{7}{12} + \frac{1}{6} = \frac{7}{12} + \frac{\boxed{2}}{\boxed{12}} = \frac{\boxed{9}}{\boxed{12}}$$

$$\frac{2}{3} + \frac{1}{6} = \boxed{\frac{5}{6}}$$

$$\frac{1}{10} + \frac{4}{5} = \boxed{\frac{9}{10}}$$

$$\frac{1}{2} + \frac{1}{4} = \boxed{\frac{3}{4}}$$

$$\frac{1}{5} + \frac{7}{10} = \boxed{\frac{9}{10}}$$

$$\frac{1}{4} + \frac{3}{8} = \boxed{\frac{5}{8}}$$

$$\frac{5}{7} + \frac{3}{14} = \boxed{\frac{13}{14}}$$

$$\frac{1}{3} + \frac{1}{6} = \boxed{\frac{1}{2}}$$

$$\frac{1}{14} + \frac{6}{7} = \boxed{\frac{13}{14}}$$

$$\frac{1}{8} + \frac{1}{2} = \boxed{\frac{5}{8}}$$

$$\frac{2}{7} + \frac{5}{14} = \boxed{\frac{9}{14}}$$

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Maths Tasks – White Challenge

Complete the additions.

Use the bar models to help you.

a)



$$\frac{1}{2} + \frac{1}{4} + \frac{1}{12} = \frac{5}{6}$$

b)



$$\frac{1}{2} + \frac{1}{3} + \frac{1}{12} = \frac{11}{12}$$

c)



$$\frac{2}{3} + \frac{1}{6} + \frac{1}{12} = \frac{11}{12}$$

d)



$$\frac{1}{3} + \frac{1}{4} + \frac{1}{6} = \frac{3}{4}$$

Copy and complete:

$$\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

$$\frac{3}{5} + \frac{1}{6} = \frac{18}{30} + \frac{5}{30} = \frac{23}{30}$$

$$\frac{2}{3} + \frac{1}{5} = \frac{10}{15} + \frac{3}{15} = \frac{13}{15}$$

$$\frac{2}{6} + \frac{1}{4} = \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

More white challenge on the next page...

Complete the additions.

$$\text{a) } \frac{1}{5} + \frac{3}{10} + \frac{7}{20} = \boxed{\frac{17}{20}}$$

$$\text{d) } \frac{3}{16} + \frac{1}{2} + \frac{1}{4} = \boxed{\frac{15}{16}}$$

$$\text{b) } \frac{1}{16} + \frac{5}{32} + \frac{3}{8} = \boxed{\frac{19}{32}}$$

$$\text{e) } \frac{1}{2} + \frac{5}{18} + \frac{1}{9} = \boxed{\frac{8}{9}}$$

$$\text{c) } \frac{1}{4} + \frac{5}{24} + \frac{5}{12} = \boxed{\frac{7}{8}}$$

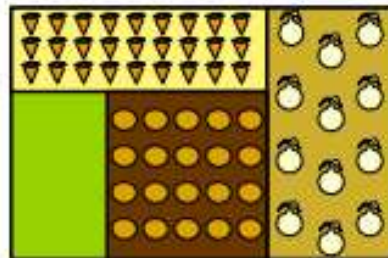
$$\text{f) } \frac{1}{5} + \frac{8}{35} + \frac{2}{7} = \boxed{\frac{5}{7}}$$

Rosie has a vegetable patch.

$\frac{2}{9}$ of the patch contains carrots.

$\frac{5}{18}$ of the patch contains potatoes.

$\frac{1}{3}$ of the patch contains onions.



$$\frac{15}{18} = \frac{5}{6}$$

What fraction of the patch contains carrots, potatoes or onions?

Eva is attempting to answer:

$$\frac{3}{5} + \frac{1}{10} + \frac{3}{20}$$

Jack has added 3 fractions together to get an answer of $\frac{17}{18}$



$$\frac{3}{5} + \frac{1}{10} + \frac{3}{20} = \frac{7}{35}$$

What 3 fractions could he have added?

Can you find more than one answer?

Do you agree with Eva?
Explain why.

Eva is wrong because she has added the numerators and denominators together and hasn't found a common denominator. The correct answer is $\frac{17}{18}$

Possible answers:

$$\frac{1}{18} + \frac{4}{18} + \frac{13}{18}$$

$$\frac{1}{9} + \frac{5}{9} + \frac{5}{18}$$

$$\frac{1}{6} + \frac{5}{9} + \frac{2}{9}$$

$$\frac{1}{18} + \frac{1}{6} + \frac{13}{18}$$

$$\frac{1}{3} + \frac{1}{6} + \frac{4}{9}$$

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Maths Tasks – White+ Extension

Fill in the missing numerators.

a) $\frac{1}{8} + \frac{\boxed{2}}{16} + \frac{3}{8} = \frac{5}{8}$

d) $\frac{1}{8} + \frac{\boxed{6}}{16} + \frac{1}{4} = \frac{3}{4}$

b) $\frac{1}{8} + \frac{\boxed{6}}{16} + \frac{3}{8} = \frac{7}{8}$

e) $\frac{1}{8} + \frac{1}{16} + \frac{\boxed{9}}{16} = \frac{3}{4}$

c) $\frac{1}{4} + \frac{\boxed{2}}{16} + \frac{3}{8} = \frac{3}{4}$

f) $\frac{1}{4} + \frac{1}{16} + \frac{\boxed{7}}{16} = \frac{3}{4}$

Complete the number square.

The total of each column is $\frac{4}{5}$

The total of each row is $\frac{4}{5}$

$\frac{3}{10}$	$\frac{2}{5}$	$\frac{1}{10}$
$\frac{3}{20}$	$\frac{1}{10}$	$\frac{11}{20}$
$\frac{7}{20}$	$\frac{3}{10}$	$\frac{3}{20}$

Create your own problem like this
