Fractions, factors and multiples (2)

- Use common factors to simplify fractions
- Use common multiples to express fractions in the same denomination

Challenge 1

1 Simplify these fractions.

a $\frac{8}{10}$ b $\frac{10}{20}$ c $\frac{15}{25}$ d $\frac{9}{12}$ e $\frac{20}{28}$

f $\frac{12}{18}$ g $\frac{16}{24}$ h $\frac{24}{30}$ i $\frac{22}{26}$ j $\frac{21}{35}$

Example

$\frac{8}{14}$

2 Write five fractions for your partner to simplify. Make sure you know the answers!

Challenge 2

1 Simplify these fractions in two different ways.

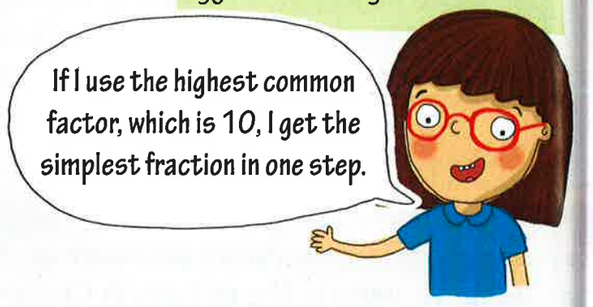
a $\frac{30}{40}$ b $\frac{28}{36}$ c $\frac{20}{40}$ d $\frac{18}{36}$ e $\frac{32}{44}$

f $\frac{18}{24}$ g $\frac{36}{44}$ h $\frac{45}{60}$ i $\frac{27}{45}$ j $\frac{48}{64}$

Example

$\frac{20}{30} \rightarrow \div 2 = \frac{10}{15} \rightarrow \div 5 = \frac{2}{3}$

$\frac{20}{30} \rightarrow \div 10 = \frac{2}{3}$



2 Choose two of these fractions and change them to fractions with the same denominators. Do this ten times. Fractions can be used more than once.

3 Using the fractions in Question 2, can you find any sets of three fractions that can be changed to fractions with the same denominator?

4 Write three fractions that would simplify to the fractions below. Use your knowledge of multiples.

a $\frac{3}{5}$ b $\frac{5}{8}$ c $\frac{4}{7}$ d $\frac{2}{9}$

e $\frac{9}{13}$ f $\frac{7}{12}$ g $\frac{2}{15}$ h $\frac{6}{7}$

Challenge 3

1 Why does the mathematical rule for simplifying fractions state that you should use the highest common factor of the numerator and denominator?

2 Work with a partner.

- Roll the dice four times and record your digits. If you roll a 0, count it as a 10.
- Use the digits to make two proper fractions.
- Look at the denominators. Convert the fractions to two fractions with the same denominator.
- Repeat three times.
- Now roll the dice six times and make three fractions. Convert these to three fractions with the same denominator.
- Repeat three times.

You will need:
- 0–9 dice