25.2.21   Fractions

Learning Objective:
We are learning to subtract two mixed numbers.

I will be successful if:
- I can convert mixed fractions to improper fractions.
- I can create a new mixed number by partitioning wholes into parts.
- I can use bar models and number lines to help subtract fractions.

Key Vocabulary

fractions as part of a whole
equal parts
equivalents
representations
numerator
denominator
non-unit and unit fractions
improper fractions
mixed number
multiples
addition
subtraction
difference
partitioning

1) Work out $\dfrac{7}{30} + \dfrac{2}{15} + \dfrac{1}{3}$

2) What is $\dfrac{3}{10}$ less than $\dfrac{9}{10}$?

3) Change $7\dfrac{3}{10}$ to an improper fraction.

4) What is the value of the 2 in the number 6,328?

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Challenge – simplify these fractions to their lowest form

5) $\dfrac{30}{36}$

6) $\dfrac{27}{33}$

7) $\dfrac{48}{54}$

8) $\dfrac{9}{15}$

1) Work out $\frac{7}{30} + \frac{2}{15} + \frac{1}{3}$ $\frac{21}{30}$

2) What is $\frac{3}{10}$ less than $\frac{9}{10}$? $\frac{6}{10}$ or $\frac{3}{5}$

3) Change $7\frac{3}{10}$ to an improper fraction. $\frac{73}{10}$

4) What is the value of the 2 in the number 6,328?

twenty

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Challenge – simplify these fractions to their lowest form

5) $\frac{5}{6}$

7) $\frac{8}{9}$

6) $\frac{9}{11}$

8) $\frac{3}{5}$

Discussion

Today, we are going to look at subtraction calculations where both the numbers are mixed numbers.

How can you use what you've learnt this week to help you with this today?
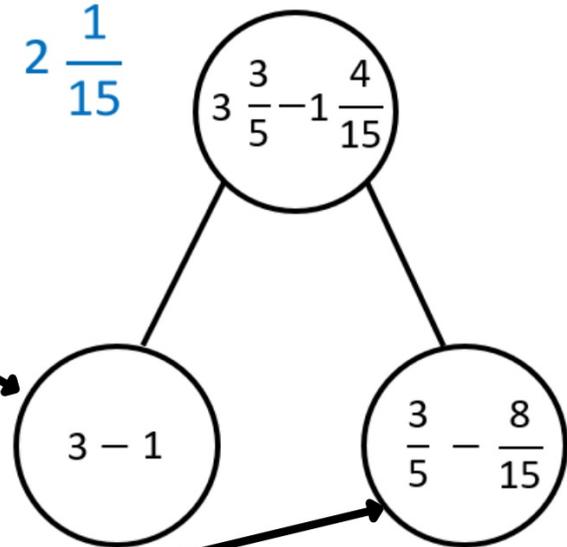
Part whole method

$$3\frac{3}{5} - 1\frac{8}{15} =$$

$$\cancel{3}\frac{3}{5} - \cancel{1}\frac{8}{15} = 2\frac{1}{15}$$
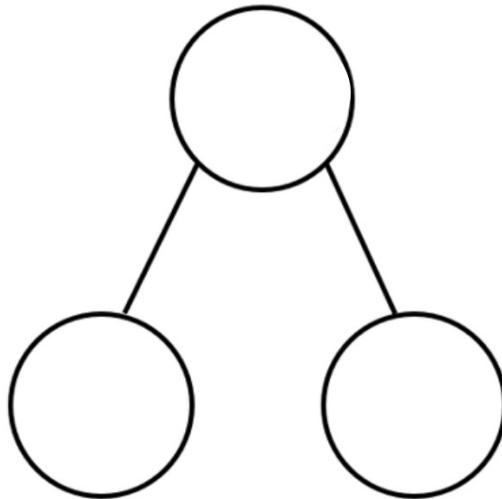
Step 1: Subtract whole numbers $3 - 1 = 2$

Step 2: Subtract fractions $\dfrac{3}{5} - \dfrac{8}{15} =$

$$\frac{9}{15} - \frac{8}{15} = \frac{1}{15}$$

$$3\frac{3}{5} - 1\frac{4}{15}$$

$$3 - 1$$
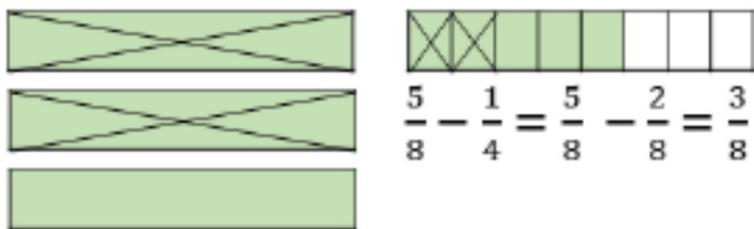
$$\frac{3}{5} - \frac{8}{15}$$

Now, use this method to help you solve this subtraction calculation.

$$3\frac{8}{9} - 2\frac{5}{27}$$

Bar model method

Here is a bar model to calculate $3\frac{5}{8} - 2\frac{1}{4}$

$$\frac{5}{8} - \frac{1}{4} = \frac{5}{8} - \frac{2}{8} = \frac{3}{8}$$

$$3\frac{5}{8} - 2\frac{1}{4} = 1\frac{3}{8}$$
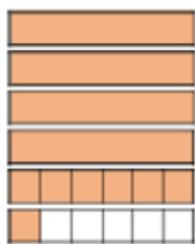
$$3 - 2 = 1$$

Use this method to calculate:

$$3\frac{7}{8} - 2\frac{3}{4} \qquad\qquad 5\frac{5}{6} - 2\frac{1}{3}$$

What did you notice?

Bar model method

Here is a method to calculate $5\frac{1}{6} - 2\frac{1}{3}$

$$5\frac{1}{6} - 2\frac{1}{3} = 4\frac{7}{6} - 2\frac{1}{3} = 4\frac{7}{6} - 2\frac{2}{6} = 2\frac{5}{6}$$

What is happening in each step?
Can you explain each step to a friend?
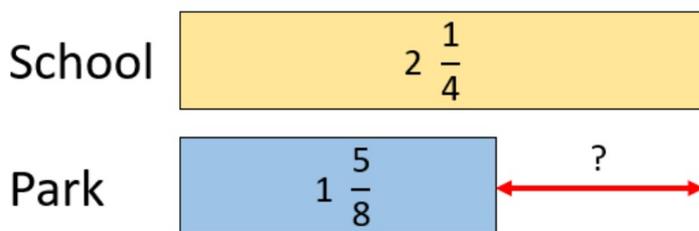
Use this method to calculate:

$3\frac{1}{4} - 2\frac{5}{8}$

Have a go at solving this problem, use the bar model to help you.

From Jack's house to school is $2\frac{1}{4}$ km.
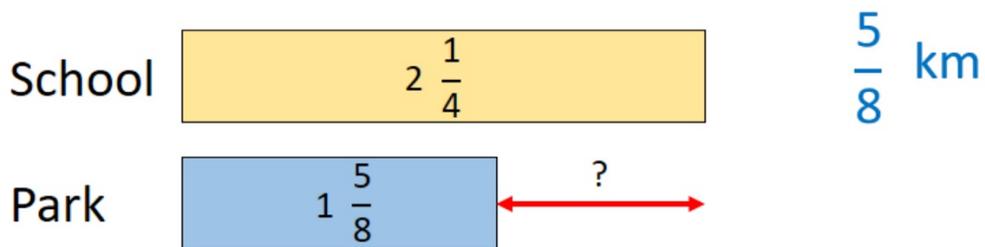
From Jack's house to the park is $1\frac{5}{8}$ km.

How much closer is the park to Jack's house?

School | $2\frac{1}{4}$

Park | $1\frac{5}{8}$ | ?

$$2\frac{1}{4} - 1\frac{5}{8} =$$

Answer

How much closer is the park to Jack's house?

School $\boxed{2\frac{1}{4}}$ $\frac{5}{8}$ km

Park $\boxed{1\frac{5}{8}}$ ⟵ ? ⟶

$$2\frac{1}{4} - 1\frac{5}{8} =$$

$$2\frac{2}{8} - 1\frac{5}{8} =$$

$$\frac{18}{8} - \frac{13}{8} = \frac{5}{8}$$

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Have a go at the questions on the sheet attached.

Reasoning challenges

There are three colours of dog biscuits in a bag of dog food: red, brown and orange.

The total mass of the dog food is 7 kg.

The mass of red biscuits is $3\frac{3}{4}$ kg and the mass of the brown biscuits is $1\frac{7}{16}$ kg.

What is the mass of orange biscuits?

Rosie has $20\frac{3}{4}$ cm of ribbon.

Annie has $6\frac{7}{8}$ cm less ribbon than Rosie.

How much ribbon does Annie have?

How much ribbon do they have altogether?

$2\frac{5}{6}$ is $\frac{15}{12}$ greater than $1\frac{7}{12}$

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