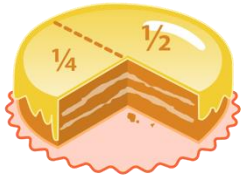
Year 5 maths – Summer 2 Week 1 beginning: 01.06.20

Theme	Fractions Making Equivalent Fractions	Fractions Making Equivalent Fractions	Fractions Making Equivalent Fractions	Fractions Making Equivalent Fractions	Fractions Making Equivalent Fractions
Factual fluency (to aid fluency)	**Write down all the equivalent fractions you know for $\frac{1}{2}$**	**Practice equivalent fractions here**	**Practice adding fractions here**	**Practice subtracting fractions from whole numbers here**	**Practice equivalent fractions here**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge** LINK	**(Lesson 1 resources below)** **MAKING LINKS:** Last term, we learnt how to find equivalent fractions by multiplying and dividing the numerator (top number) and the denominator (bottom number) by the same amount. **THINK: (support below)** Can you help me with this problem? **What other fractions of this cake are possible?**  **SEE: (model below)** Watch the video here. **DO:** Answer the questions below.	**(Lesson 2 resources below)** **MAKING LINKS:** Yesterday we learnt how to find equivalent fractions by multiplying the numerator and denominator by the same amount. **THINK: (support below)** Can you help me with this problem? **Three friends collected sweets at Halloween.**  **Who collected the least amount of sweets?** **SEE: (model below)** Watch the video here. **DO:** Answer the questions below.	**(Lesson 3 resources below)** **MAKING LINKS:** Yesterday we revised how to compare mixed numbers by making the denominators the same. **THINK: (support below)** Can you help me with this problem?  **Two friends ate $\frac{4}{6}$ of one pizza and $\frac{1}{2}$ of another. How much pizza did they eat altogether?** **SEE: (model below)** Watch the video here. **DO:** Answer the questions below.	**(Lesson 4 resources below)** **MAKING LINKS:** Yesterday we revised how to add fractions with different denominators by making the denominators the same first. **THINK: (support below)** Can you help me with this problem?  **Neil poured $\frac{2}{8}$ L of cranberry juice from a bottle that contained $\frac{1}{2}$ L. How much was left in the bottle?** **SEE: (model below)** Watch the video here. **DO:** Answer the questions below.	**(Lesson 5 resources below)** **MAKING LINKS:** Yesterday we revised how to subtract fractions with different denominators by making the denominators the same first. **THINK: (support below)** Can you help me with this problem?  **The shoes cost $2\frac{1}{2}$ times as much as the t-shirt. How much do the shoes cost?** **SEE: (model below)** Watch the video here. **DO:** Answer the questions below.
Methods, tips, clues & checks	**Day 1 resources and answers (below)**	**Day 2 resources and answers (below)**	**Day 3 resources and answers (below)**	**Day 4 resources and answers (below)**	**Day 5 resources and answers (below)**

See below for resources to support you to THINK-SEE-DO

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DAY 1 RESOURCES:

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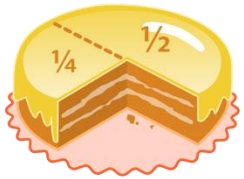
THINK:



What other fractions of this cake are possible?

DO:

1. Find the equivalent fractions.

a. $\frac{3}{5} = \frac{?}{10}$

b. $\frac{3}{5} = \frac{?}{15}$

c. $\frac{3}{5} = \frac{?}{100}$

d. $\frac{3}{4} = \frac{?}{100}$

e. one fifth = _____ fifteenths
one fifth = _____ hundredths

2. Continue these equivalent fraction strings:

a. $\frac{1}{5}$ ___ ___ ___ ___

b. $\frac{1}{6}$ ___ ___ ___ ___

Deepening:

Which of these numbers are easily written as tenths and hundredths? Write a step by step guide to explain your thinking.

$\frac{19}{50}$ $\frac{2}{7}$ $\frac{1}{5}$ $\frac{4}{25}$ $\frac{1}{2}$ $\frac{7}{15}$ $\frac{4}{5}$ $\frac{3}{20}$

SEE: Watch the video here.

First, let's think about other ways we could express $\frac{1}{2}$.

1. Use a fractions wall:

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

2. We can multiply the numerator and the denominator by the same amount to find more equivalent fractions:

We can continue using this method to find many more equivalent fractions such as $\frac{12}{24}$ or $\frac{50}{100}$

Now use this interactive fractions wall to investigate other ways of expressing $\frac{1}{4}$.

We could also think about solving the problem in a different way. We could add up the total amount of cake and then use the total amount of cake to find equivalent fractions. To do this accurately, we need to make sure our denominators are the same.

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

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

$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16}$$

DAY 2 RESOURCES:

THINK:

Three friends collected sweets at Halloween.
Who collected the least amount of sweets?

DO:

1a. Which is greater?

$3\frac{1}{12}$ or $3\frac{1}{13}$

b. Which is smaller?

$\frac{7}{14}$ or $1\frac{7}{12}$

2a. Arrange these numbers from smallest to greatest:

$3\frac{8}{9}$ $5\frac{1}{9}$ $3\frac{2}{3}$

b. Arrange these numbers from greatest to smallest:

$\frac{17}{10}$ $\frac{13}{5}$ $1\frac{3}{5}$

3. Arrange these fractions in ascending order:

$2\frac{4}{7}$ $4\frac{1}{7}$ $2\frac{13}{14}$

4. Arrange these fractions in descending order:

$\frac{23}{12}$ $\frac{17}{2}$ $3\frac{1}{2}$

Deepening:

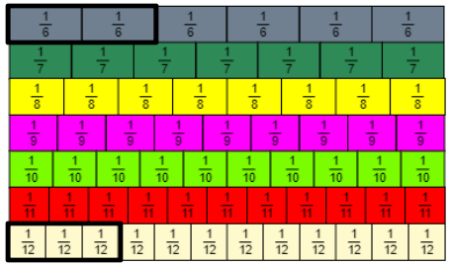
Russell says $\frac{3}{8} > \frac{3}{4}$ because 8 > 4.

Do you agree? Explain your thinking.

SEE:

Look at the number of whole kilograms. We can immediately see that Sally's bag is heavier, so we can immediately eliminate her bag.

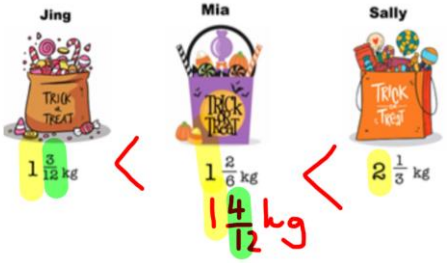
Now I can check the remaining bags:



I know they both had one whole kilogram each so I will focus on comparing the fractions $\frac{3}{12}$ and $\frac{2}{6}$. I can see from my fraction wall that $\frac{3}{12}$ is smaller than $\frac{2}{6}$.

To be sure, I will turn $\frac{2}{6}$ into twelfths to compare them.

$\frac{4}{12}$ is more than $\frac{3}{12}$ so Jing therefore had fewer sweets than Mia (and Sally too).



Watch the video here.

DAY 3 RESOURCES:

THINK:

Two friends ate $\frac{4}{6}$ of one pizza and $\frac{1}{2}$ of another.
How much pizza did they eat altogether?

DO:

1. Add these fractions.

a. $\frac{3}{5} + \frac{9}{10}$ **b.** $\frac{11}{12} + \frac{1}{4}$

2. Add and give your answer as a mixed number in its simplest form.

a. $\frac{3}{4} + \frac{11}{12}$ **b.** $\frac{11}{15} + \frac{2}{3}$

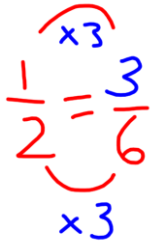
3. Find the sum of

a. $\frac{9}{10} + \frac{3}{4}$ **b.** $\frac{3}{10} + \frac{5}{6}$

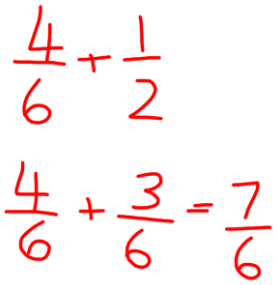
Deepening:
Using the numbers 3, 4, 5 and 6 only once, make this sum have the smallest possible answer. Explain how you know you are correct.

— + —

SEE: Watch the video here.

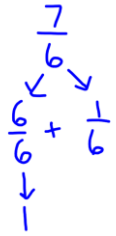


To solve this problem, I need to add the two fractions together ($\frac{4}{6} + \frac{1}{2}$)
Before I do so, I must make sure that the denominators are the same.
$\frac{1}{2} = \frac{3}{6}$



Now that the denominators are the same, I can add the two fractions.

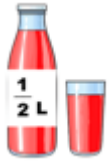
You will remember that when you have a fraction where the numerator (top) is larger than the denominator (bottom), it is known as an **improper fraction.** I can convert it into a **mixed number** like this:



The friends ate $\frac{7}{6}$ of pizza or $1\frac{1}{6}$ pizza (a whole pizza and $\frac{1}{6}$).

DAY 4 RESOURCES:

THINK:



Neil poured $\frac{2}{8}$ L of cranberry juice from a bottle that contained $\frac{1}{2}$ L. How much was left in the bottle?

DO:

1. Find the difference between:

a. $\frac{5}{6}$ and $\frac{2}{3}$

b. 1 - $\frac{1}{7}$

c. $\frac{5}{7}$ - $\frac{1}{3}$

d. $\frac{8}{9}$ - $\frac{1}{2}$

e. $\frac{2}{5}$ - $\frac{1}{10}$

f. $\frac{3}{4} - \frac{5}{12}$

g. $\frac{4}{5} - \frac{2}{15}$

h. $\frac{6}{7} - \frac{5}{14}$

i. $\frac{1}{2} - \frac{1}{18}$

2. Subtract and give your answer in its simplest form.

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

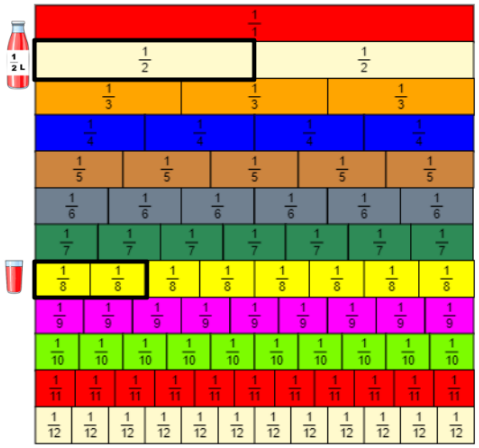
Deepening:

Explain **two different ways** to solve this. Explain as clearly as you can showing your working, using pictures or words.

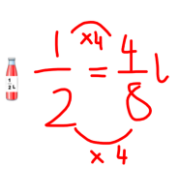
$3\frac{1}{14} - 1\frac{3}{7} =$

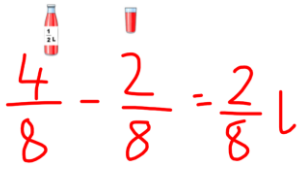
SEE: Watch the video here.

I need to subtract to find out how much is left in the bottle once some of the juice has been poured into the glass.

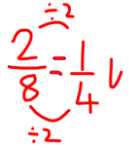


I need to make sure the denominators are the same, so I will turn ½ into eighths. Then I can subtract.





I can also simplify 2/8 by dividing the numerator and denominator by the same amount.



There was $\frac{1}{4}$ **litre of juice** left in the bottle, which I could also write as **0.25 l**. Alternatively, as I know there are 1000ml in 1l, I can divide 1000 by 4 to find one quarter. This means there was **250ml left in the bottle**.

DAY 5 RESOURCES:

THINK:

The shoes cost $2\frac{1}{2}$ times as much as the t-shirt.
How much do the shoes cost?

DO:

1. Multiply to calculate the answer.

a. A large drink costs $1\frac{1}{2}$ times as much as a small drink. The small drink costs £2. How much does the large drink cost?

b. $1\frac{1}{5} \times 8 =$

c. $2\frac{2}{3} \times 6 =$

2. Multiply to calculate the answer.

a. A small bag of sweets weighs $1\frac{1}{2}$kg. A big bag of sweets is 3 times as heavy as the small bag. What is the total weight of the two bags?

b. Ben's daily allowance is £6. Emily's daily allowance is $2\frac{1}{2}$ times as much as Ben's allowance. How much is Emily's daily allowance?

c. A bag of vegetables weighs 3kg. A bag of fruit weighs $2\frac{4}{5}$ times as much as the bag of vegetables. What is the total weight of the bag of vegetables and the bag of fruit?

d. 12 bottles of water are needed to fill a paddling pool to the brim. Each bottle has a capacity of $1\frac{3}{8}$L. Find the capacity of the paddling pool.

Deepening:

Lucy is serving pizza at a party. Each person gets $\frac{3}{4}$ of a pizza. How many pizzas must be bought for the following number of guests:

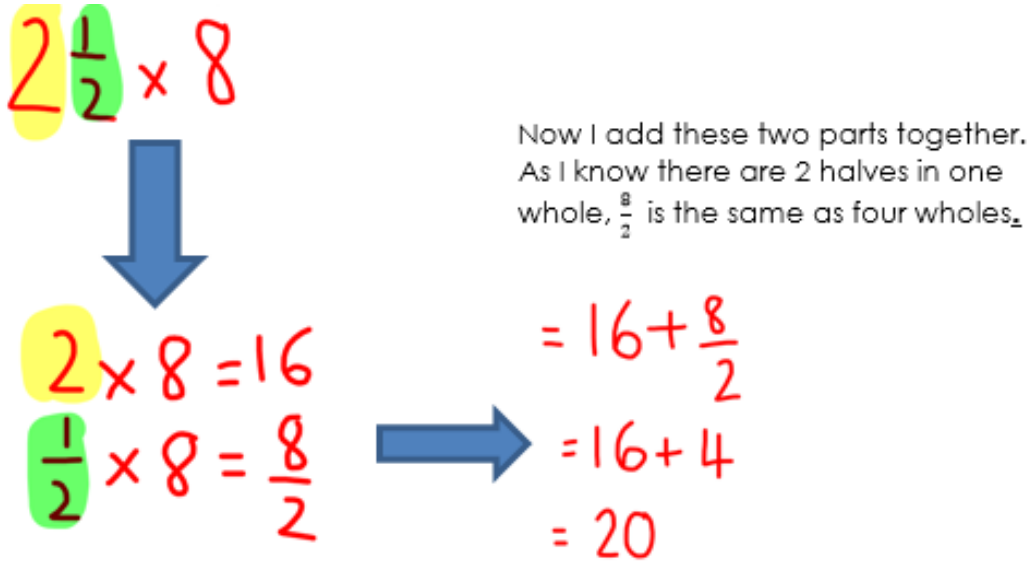
a. 4 guests **b**. 6 guests **c**. 8 guests **d**. 10 guests.

SEE: Watch the video here.

I need to multiply to solve this problem by calculating $2\frac{1}{2} \times 8$.

To do this, I will break $2\frac{1}{2}$ into two parts: 2 and $\frac{1}{2}$.

I can then multiply 2 by 8, and $\frac{1}{2}$ by 8.



The trainers cost £20.

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ANSWERS

Day 1

Question 1

a. $\frac{3}{5} = \frac{6}{10}$

b. $\frac{3}{5} = \frac{9}{15}$

c. $\frac{3}{5} = \frac{60}{100}$

d. $\frac{3}{4} = \frac{75}{100}$

e. three fifteenths
twenty hundredths

Question 2

a. $\frac{1}{5}$ $\frac{2}{10}$ $\frac{3}{15}$ $\frac{4}{20}$ $\frac{5}{25}$

b. $\frac{1}{6}$ $\frac{2}{12}$ $\frac{3}{18}$ $\frac{4}{24}$ $\frac{5}{30}$

Deepening:

$\frac{19}{50}$ $\frac{2}{7}$ $\frac{1}{5}$ $\frac{4}{25}$ $\frac{1}{2}$ $\frac{7}{15}$ $\frac{4}{5}$ $\frac{3}{20}$

Share your explanation with your teacher.

Day 2

Question 1

a. $3\frac{1}{12}$

b. $\frac{7}{14}$

Question 2

a. $3\frac{2}{3}$ $3\frac{8}{9}$ $5\frac{1}{9}$

b. $\frac{13}{5}$ $\frac{17}{10}$ $1\frac{3}{5}$

Question 3

$2\frac{4}{7}$ $2\frac{13}{14}$ $4\frac{1}{7}$

Question 4

$\frac{17}{2}$ $3\frac{1}{2}$ $\frac{23}{12}$

Deepening:

Russell is incorrect because $\frac{3}{4} = \frac{6}{8}$ and $\frac{3}{8} < \frac{6}{8}$.

Therefore $\frac{3}{8} < \frac{3}{4}$

This is because the larger the denominator, the smaller the size of the fraction.

Day 3

Question 1

a. $1\frac{1}{2}$

b. $1\frac{1}{6}$

Question 2

a. $1\frac{2}{3}$

b. $1\frac{2}{5}$

Question 3

a. $1\frac{13}{20}$

b. $1\frac{2}{15}$

Deepening:

$\frac{3}{6} + \frac{4}{5}$

In order to make the smallest possible sum, the smallest numbers need to be the numerators and the largest numbers need to be the denominators. This is because the **larger** the <u>denominator</u> digit, the smaller the size of the fraction. The **smaller** the <u>numerator</u> digit, the smaller the amount of individual fractions.

Day 4

Question 1

a. $\frac{1}{6}$

b. $\frac{6}{7}$

c. $\frac{8}{21}$

d. $\frac{7}{18}$

e. $\frac{3}{10}$

f. $\frac{1}{3}$

g. $\frac{2}{3}$

h. $\frac{1}{2}$

i. $\frac{4}{9}$

Question 2

$\frac{3}{4}$

Deepening:

$1\frac{9}{14}$

One method would be to partition the mixed numbers into whole numbers and fractions and subtract individually.

Another method would be to convert the mixed numbers into improper fractions and subtract.

Day 5

Question 1

a. £3

b. $9\frac{3}{5}$

c. 16

Question 2

a. 6kg

b. £15

c. $11\frac{2}{5}$kg

d. $16\frac{1}{2}$L

Deepening:

a. 3 pizzas
b. 5 pizzas
c. 6 pizzas
d. 8 pizzas