At-Home Investigation

Comparing the size of fractions:

Today we are going to draw each of the fractions listed below. Draw the lines in with a pen, then take a photo of what you have made to send to your teacher.

- One half $\frac{1}{2}$
- One quarter, two quarters, three quarters $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$
- One eighth, two eighths, five eighths, seven eighths $\frac{1}{8}$ $\frac{2}{8}$ $\frac{5}{8}$ $\frac{7}{8}$
- One third, two thirds $\frac{1}{3}$ $\frac{2}{3}$
- One fifth, two fifths, three fifths, four fifths $\frac{1}{5}$ $\frac{2}{5}$ $\frac{3}{5}$ $\frac{4}{5}$
- One tenth, five tenths $\frac{1}{10}$ $\frac{5}{10}$

$\frac{1}{2}$	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$
$\frac{1}{8}$	$\frac{2}{8}$	$\frac{5}{8}$	$\frac{7}{8}$
$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{5}$	$\frac{2}{5}$
$\frac{3}{5}$	$\frac{4}{5}$	$\frac{1}{10}$	$\frac{5}{10}$

Ordering fractions:

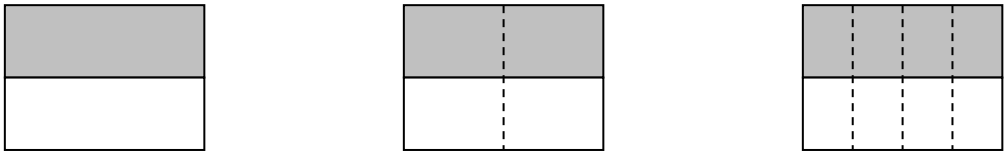
Now that you have made each fraction, order the following fractions from smallest to largest.

Explain how you did it. $\frac{3}{4}$ $\frac{4}{8}$ $\frac{2}{3}$ $\frac{3}{5}$ $\frac{5}{10}$ $\frac{5}{8}$

Equivalent fractions

Different common fractions can be used to represent the same amount. These are called ***equivalent fractions****. Use the diagrams below to help you to identify the common fractions.*

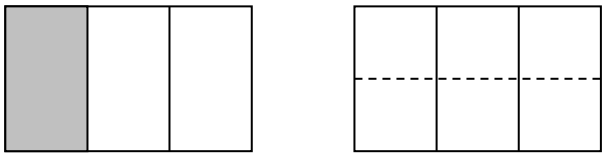
Example:



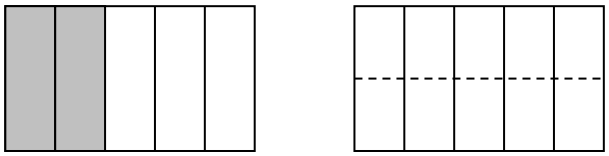
$^{1}/_{2}$ = $^{2}/_{4}$ = $^{4}/_{8}$

Colour the diagrams below and use them to help you answer the questions.

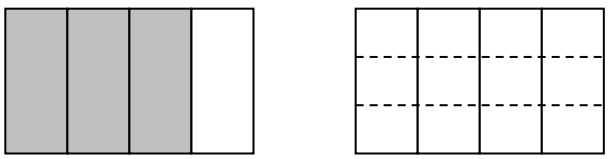
1. $^{1}/_{3}$ = how many sixths? What is the pattern?



2. $^{2}/_{5}$ = how many tenths? What is the pattern?



3. $^{3}/_{4}$ = how many twelfths? What is the pattern?



Look at the numbers in each numerator and denominator in the set of equivalent fractions.
What patterns do you see between the numbers?

Think it through:
Is there a way that you could use your understanding of equivalent fractions to add different fractions together? Try drawing what it would look like to add $\frac{1}{2}$ to $\frac{1}{4}$
If you can, also try adding on $\frac{1}{8}$

Representing fractions in everyday situations

When we know what a fraction of the whole is, we can work out the whole. Also, when we know what the whole is, we can work out the fraction. See if you can figure out how to do this by completing the questions below.

Try to work out the patterns:

Finding a half from one whole:

- What is half of ten?
- What did you do to work it out?
- So if you knew what the whole was, how could you find what half of it was?

Finding the whole from one half:

- If half the money in my pocket was $3, how much was all of the money in my pocket?
- What did you do to work it out?
- If you knew what half was, how could you find what the whole was?

Examples:

- ½ of 10 = 5 $\quad$ 10 ÷ 2 = 5
- ¼ of 12 = 3 $\quad$ 12 ÷ 4 = 3
- $^1/_5$ of 20 = 4 $\quad$ 20 ÷ 5 = 4

The pattern is:

Questions: Find the solutions to the following unit fractions mentally. Check with a calculator.

1. $^1/_3$ of 30 = $\quad$ =
2. $^1/_5$ of 25 = $\quad$ =
3. ½ of 12 = $\quad$ =
4. $^1/_6$ of 30 = $\quad$ =
5. ¼ of 28 = $\quad$ =
6. $^1/_3$ of 18 = $\quad$ =
7. ¼ of 20 = $\quad$ =

How could you use what you have worked out to find 2 of each fraction? E.g. $^2/_3$ of 30

Interleaved practise

Year 6, week 7

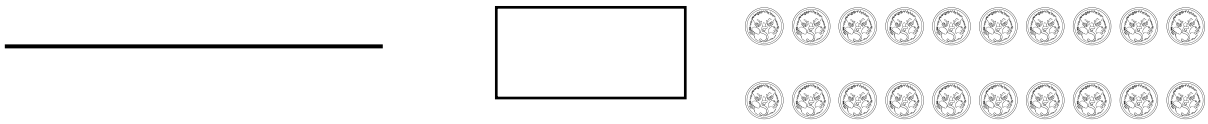
Number:

1. Complete this table

2^2	2 x 2	4	Factors: 1, 2, 4
3^2			Factors:
4^2			Factors:
5^2			Factors:
6^2			Factors:

2. Name two places where you might see negative numbers

3. Write 0.6 as a fraction and show what 0.6 of this line, rectangle and collection of coins represents



4. 0.36 ÷10 = ☐ 0.36 ÷ 100 = ☐ 0.36 x 10 = ☐ 0.36 x 100 = ☐

5. A bottle of milk costs $3.90. If I use one bottle a day, how much will I pay for milk per week? Show how you worked it out.

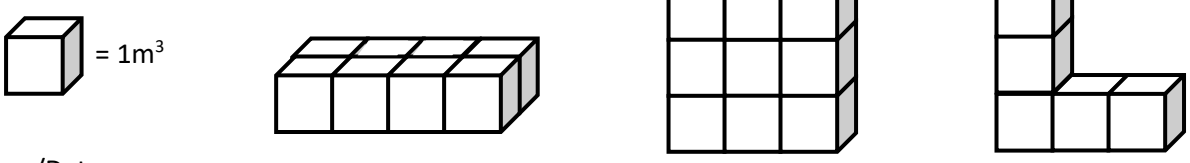
Measurement/Geometry:

6. Fill in the missing numbers:

   1.35 kg = _____ g _____ L = 2450 mL 35.7 cm = _____ mm

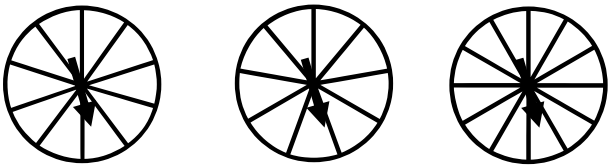
7. Describe the properties of a square based pyramid:

8. Write the volume of these objects in m^3



Chance/Data:

9. Use as many colours as you like to design spinners that have an equal chance of spinning each colour.



C6. Adding fractions with related denominators

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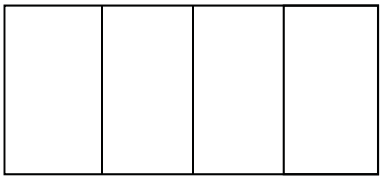
Using pictures is a good way to understand a concept. Today we will learn how to add and subtract fractions with related denominators.

Example:

$^1/_4 + {}^1/_2$



Colour ¼ of the rectangle in blue: how many pieces do you shade? _____

Colour ½ of the rectangle in red: how many pieces do you shade? _____

How many pieces would this make altogether? _____ What fraction is this? _____

What would you have done if it was ½ - ¼? Can you think of how to do it using an eraser?

Try these: some are addition and some are subtraction. For some you will need to cut the shape into more parts before you can add or subtract. Make sure that you think about how many pieces you need altogether before getting started.

1. $^3/_4 + {}^1/_8 =$

2. $^2/_5 - {}^1/_{10} =$

3. $^2/_6 + {}^1/_3 =$

4. $^1/_2 - {}^3/_{10} =$