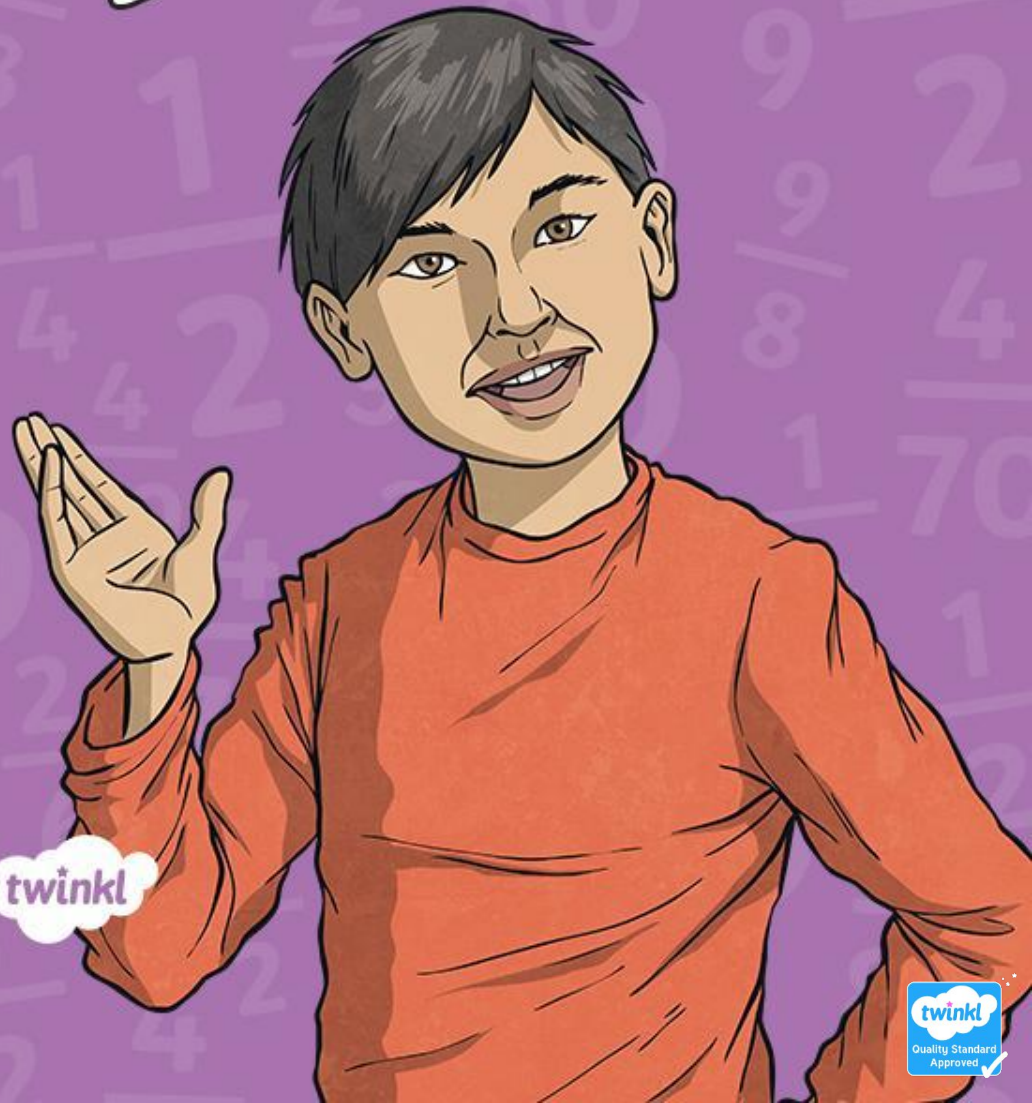




Maths

Fractions

Decimal Equivalents



twinkl

Aim

- I can calculate decimal fraction equivalents.

Success Criteria

- I can write a fraction as a division calculation.
- I can recall quickly the decimal equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{10}$, $\frac{3}{4}$ and $\frac{1}{5}$.
- I can use the written method of short division to calculate a decimal equivalent.
- I can round a decimal equivalent to three decimal places if necessary.
- I can sort decimal equivalents correctly using Venn and Carroll diagrams.

Fraction Spinners



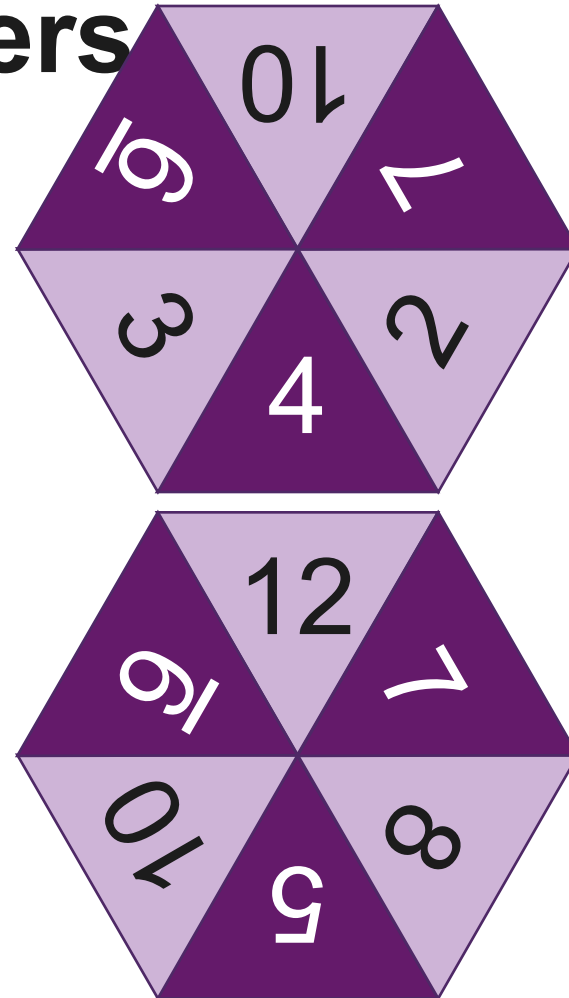
Click the button to spin the two hexagons to generate a fraction at the place where the edges meet.

Perform the actions relating to the fraction created.

Spin to generate fraction

Stand up
if it is greater than half.

Clap your hands
if it can be simplified.



Fractions and



Fractions are another way of writing division.

$$\frac{4}{7} = 4 \div 7$$

Because of this, every fraction has a decimal number equivalent which we calculate by doing the division.



Fractions and



Some decimal number equivalents we can learn as facts:

$$\frac{1}{2} = 1 \div 2 = 0.5$$

$$\frac{1}{10} = 1 \div 10 = 0.1$$

$$\frac{1}{4} = 1 \div 4 = 0.25$$

$$\frac{3}{4} = 3 \div 4 = 0.75$$

Fractions and Division



However, some decimal number equivalents need to be calculated:

$$\frac{7}{8} = 7 \div 8 = ?$$

$$\frac{5}{6} = 5 \div 6 = ?$$

$$\frac{2}{7} = 2 \div 7 = ?$$

$$\frac{1}{9} = 1 \div 9 = ?$$

Calculating a Decimal

When we want to calculate a decimal equivalent of a fraction, we use the written method of short division:

$$\frac{7}{8} =$$

	0	•	8	7	5		
8	7	•	0	60	40		

We add the decimal point and the zeros to the calculation because we know the answer will be a decimal number less than one.

Step 1: Calculate $70 \div 8$

$$\frac{7}{8} = 0.875$$

Immediately before 70 is 64, remainder 6

Step 2: Calculate $60 \div 8$

Immediately before 60 is 56, remainder 4

Step 3: Calculate $40 \div 8$

40 is a multiple of 8, $40 = 5 \times 8$, so $40 \div 8 = 5$

Calculating a Decimal

Have a go at using the written method of short division to find the decimal equivalent of this fraction:

		0	•	2	8	6	7	
2	=	7	2	•	0	60	40	50

If the digit after the thousandths is 4 or less, then the thousandths digit stays the same.
If the digit after the thousandths is 5 or more, then the thousandths digit rounds up.

Step 1: Calculate $20 \div 7$ The multiple of 7 that comes immediately before 20 is 14, $14 = 2 \times 7$, so $20 \div 7 = 2$ remainder 6

Step 2: Calculate $60 \div 7$ The multiple of 7 that comes immediately before 60 is 56, $56 = 8 \times 7$, so $60 \div 7 = 8$ remainder 4

Step 3: Calculate $40 \div 7$ The multiple of 7 that comes immediately before 40 is 35, $35 = 5 \times 7$, so $40 \div 7 = 5$ remainder 5

Step 3: Calculate $50 \div 7$ The multiple of 7 that comes immediately before 50 is 49, $49 = 7 \times 7$, so the next digit after the thousandths is a 7.

Calculating a Decimal

When we want to calculate a decimal equivalent of a fraction, we use the method of short division:

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

		0	.	8	3	3	
6	5						

This decimal equivalent is recurring. This means that the same digit will repeat for infinity! To show this, we place a dot over the recurring digit.

$$\frac{5}{6} = 0.8\dot{3}$$

Step 1: Calculate $50 \div 6$ The multiple of 6 that comes immediately before 50 is 48, so $50 \div 6 = 8$ remainder 2

Step 2: Calculate $20 \div 6$ The multiple of 6 that comes immediately before 20 is 18, $18 = 3 \times 6$, so $20 \div 6 = 3$ remainder 2

Step 3: Calculate $20 \div 6$ The multiple of 6 that comes immediately before 20 is 18, $18 = 3 \times 6$, so $20 \div 6 = 3$ remainder 2

Decimal

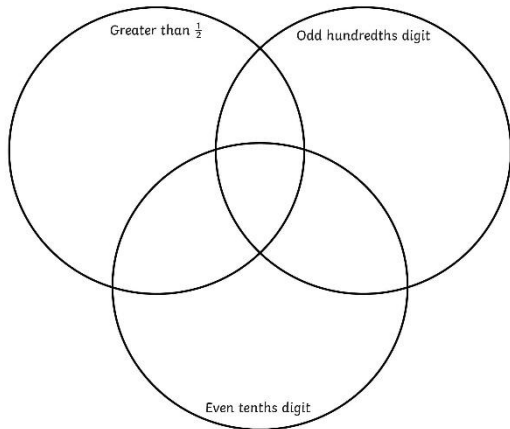


Decimal Fraction Equivalents Number Sort

I can identify the value of each digit in numbers up to 3 decimal places.

Convert each fraction to its decimal equivalent, and then sort the decimal numbers into the correct place on the Venn diagram:

$\frac{1}{2} =$	$\frac{2}{7} =$	$\frac{3}{7} =$	$\frac{4}{7} =$	$\frac{5}{7} =$	$\frac{6}{7} =$	$\frac{7}{5} =$
$\frac{1}{9} =$	$\frac{2}{9} =$	$\frac{4}{9} =$	$\frac{5}{9} =$	$\frac{7}{9} =$	$\frac{8}{8} =$	$\frac{7}{10} =$

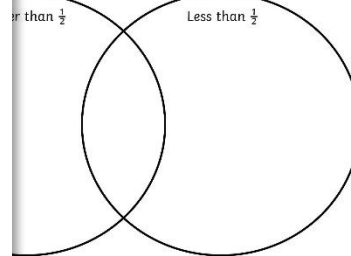


Decimal Fraction Equivalents Number Sort

I can identify the value of each digit in numbers up to 3 decimal places.

Convert each fraction to its decimal equivalent, and then sort the decimal numbers into the correct place on the Venn diagram:

$\frac{3}{4} =$	$\frac{1}{6} =$	$\frac{2}{3} =$	$\frac{5}{6} =$
$\frac{3}{8} =$	$\frac{5}{8} =$	$\frac{3}{10} =$	$\frac{9}{10} =$



Convert each fraction to its decimal equivalent, and then sort the decimal numbers into the correct place on the Venn diagram:

$\frac{6}{7} =$	$\frac{5}{7} =$	$\frac{6}{7} =$	$\frac{2}{3} =$
$\frac{6}{10} =$	$\frac{7}{9} =$	$\frac{5}{8} =$	$\frac{7}{10} =$

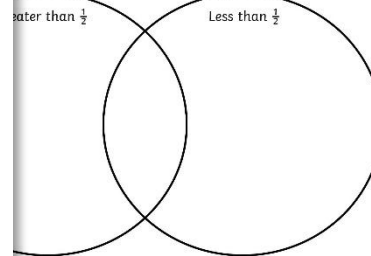
Greater than $\frac{1}{2}$	Less than $\frac{1}{2}$

Decimal Fraction Equivalents Number Sort

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Convert each fraction to its decimal equivalent, and then sort the decimal numbers into the correct place on the Venn diagram:

$\frac{3}{4} =$	$\frac{1}{5} =$	$\frac{2}{5} =$	$\frac{9}{10} =$
$\frac{1}{10} =$	$\frac{3}{10} =$	$\frac{7}{10} =$	



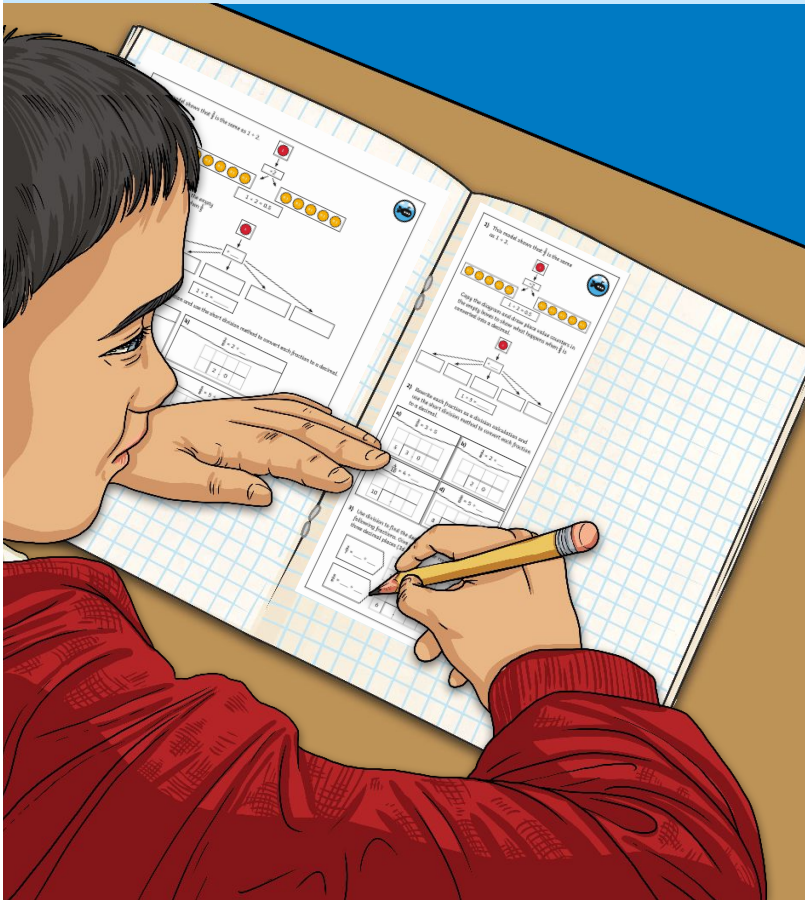
Convert each fraction to its decimal equivalent, and then sort the decimal numbers into the correct place on the Venn diagram:

$\frac{3}{4} =$	$\frac{1}{5} =$	$\frac{2}{5} =$	$\frac{5}{6} =$
$\frac{3}{8} =$	$\frac{5}{8} =$	$\frac{3}{10} =$	$\frac{7}{10} =$

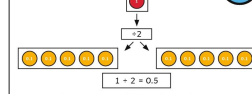
Greater than $\frac{1}{2}$	Less than $\frac{1}{2}$

Diving into Mastery

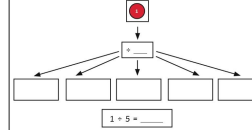
Dive in by completing your own activity!



1) This model shows that $\frac{1}{2}$ is the same as $1 \div 2$.



Copy the diagram and draw place value counters in the empty boxes to show what happens when $\frac{1}{2}$ is converted into a decimal.



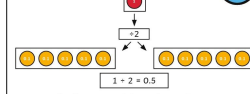
2) Rewrite each fraction as a division calculation and use the short division method to convert each fraction to a decimal.

a) $\frac{5}{10} = 3 \div 5$	b) $\frac{2}{8} = 2 \div \dots$
$\begin{array}{r} 5 \ 3 \ . \ 0 \\ 10 \end{array}$	$\begin{array}{r} 2 \ . \ 0 \\ 8 \end{array}$
c) $\frac{6}{10} = 4 \div \dots$	d) $\frac{8}{8} = 5 \div \dots$
$\begin{array}{r} 6 \ . \ . \\ 10 \end{array}$	$\begin{array}{r} 8 \ . \ . \\ 8 \end{array}$

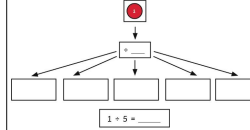
3) Use division to find the decimal equivalents for the following fractions. Give your answer rounded to three decimal places (3d.p.).

$\frac{2}{7} = \dots \div \dots$	$\begin{array}{r} \\ 7 \end{array}$
$\frac{8}{6} = \dots \div \dots$	$\begin{array}{r} \\ 6 \end{array}$

1) This model shows that $\frac{1}{2}$ is the same as $1 \div 2$.



Copy the diagram and draw place value counters in the empty boxes to show what happens when $\frac{1}{2}$ is converted into a decimal.



2) Rewrite each fraction as a division calculation and use the short division method to convert each fraction to a decimal.

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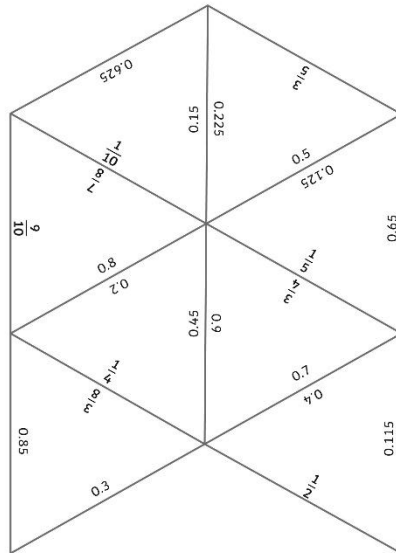
Tarsia Domino



Match the edges of the triangles and squares together by calculating the decimal fraction equivalents.

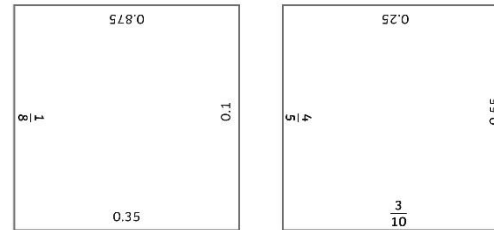
Decimal Equivalent Tarsia Dominoes

Cut out the eight triangles and four squares. Match each fraction to the correct decimal equivalent, to create one large gem stone.



planit

Maths Year 4 Fractions (Decimal Equivalents II), lesson 1 of 3, Decimal Equivalents



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Maths Year 4 Fractions (Decimal Equivalents II)



Aim



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