Maths

Fractions

Decimal Equivalents

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

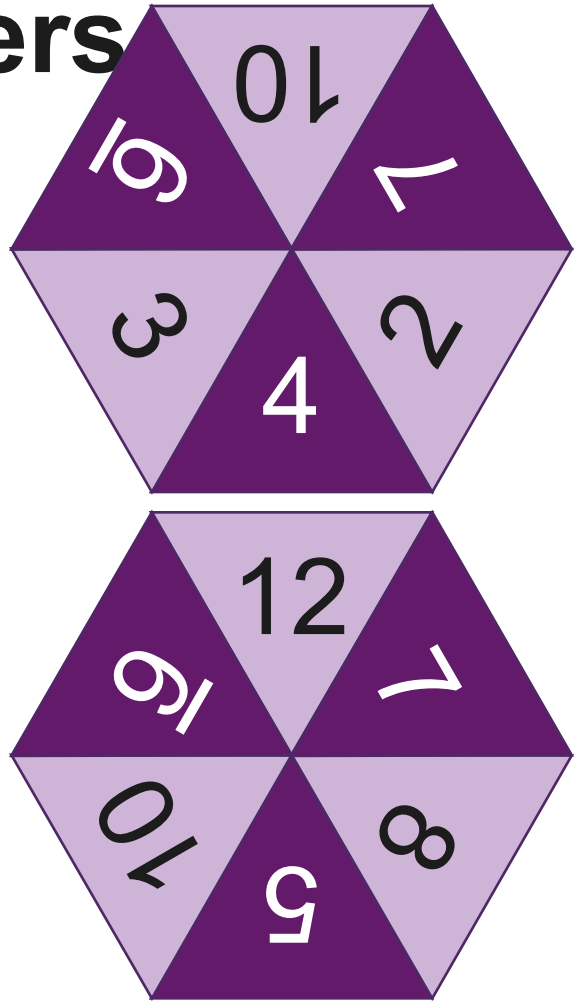
Click the button to spin the two hexagons to generate a fraction at the place where the edges meet.

Perform the actions relating to the fraction created.

Spin to generate fraction

Stand up
if it is greater than half.

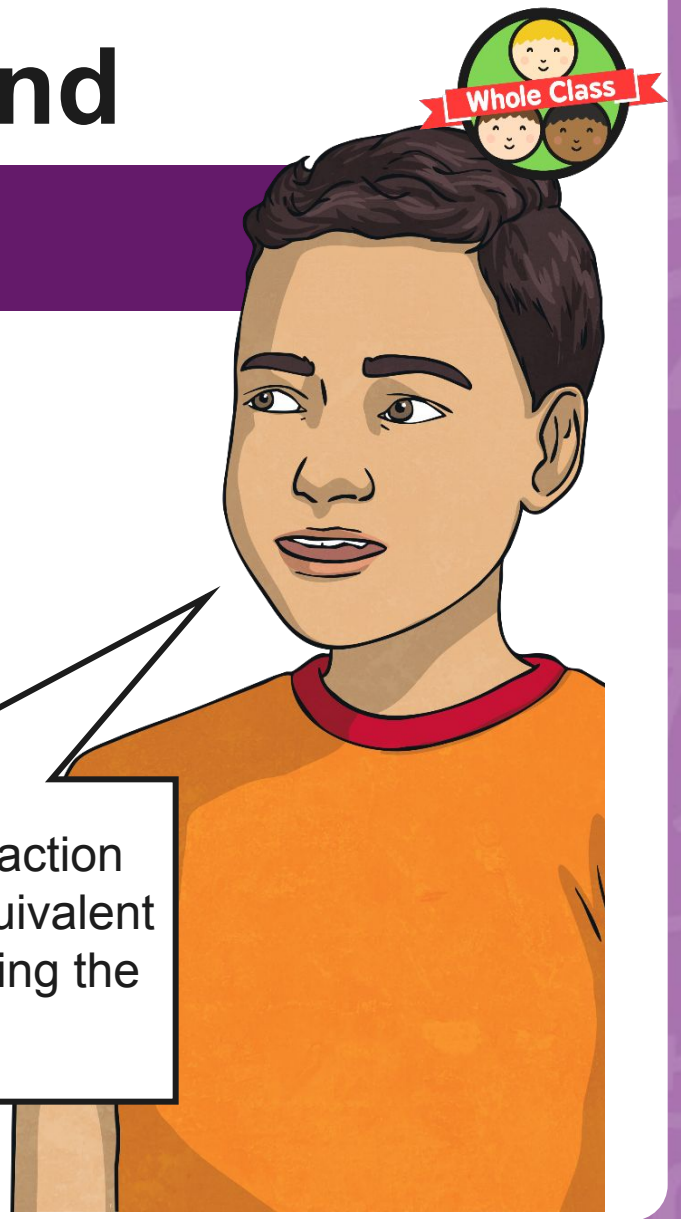
Clap your hands
if it can be simplified.



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

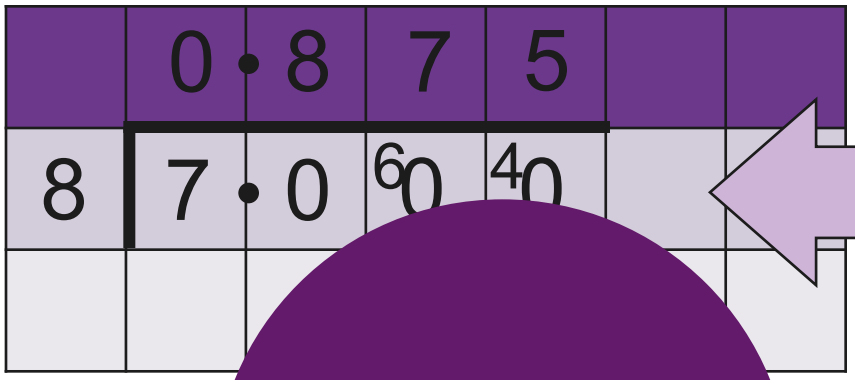
However, some decimal number equivalents need to be calculated:

$\frac{7}{8} = 7 \div 8 = ?$	$\frac{5}{6} = 5 \div 6 = ?$
$\frac{2}{7} = 2 \div 7 = ?$	$\frac{1}{9} = 1 \div 9 = ?$

Calculating a Decimal

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

$\frac{7}{8}$ =



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 ÷ 8 mmediately before 70 is 64, inder 6

Step 2: Calculate 60 ÷ 8 s immediately before 60 is 56, 7 remainder 4

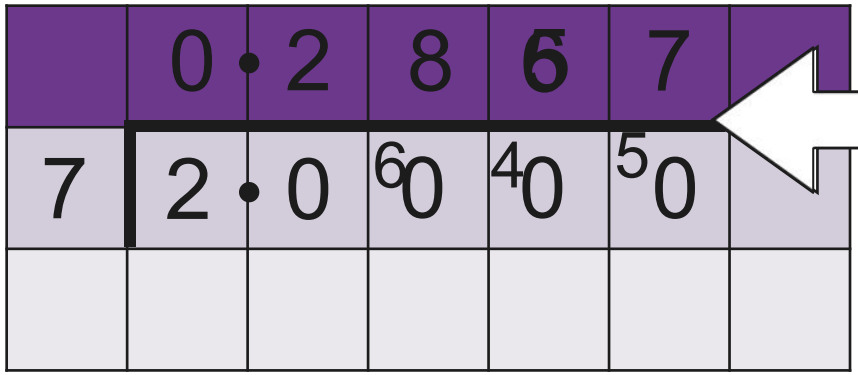
Step 3: Calculate 40 ÷ 8 40 is a multiple of 8, 40 = 5 × 8, so 40 ÷ 8 = 5

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

Calculating a Decimal

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

$\frac{2}{7}$ =



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 ÷ 7 The multiple of 7 that comes immediately before 20 is 14, 14 = 2 × 7, so 20 ÷ 7 = 2 remainder 6

Step 2: Calculate 60 ÷ 7 The multiple of 7 that comes immediately before 60 is 56, 56 = 8 × 7, so 56 ÷ 7 = 8 remainder 4

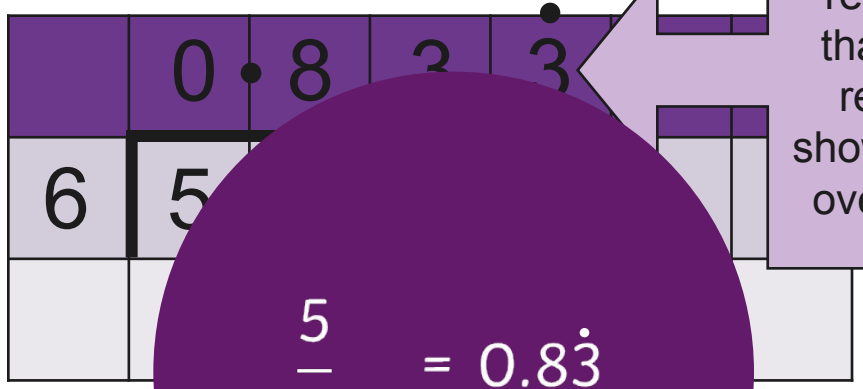
Step 3: Calculate 40 ÷ 7 The multiple of 7 that comes immediately before 40 is 35, 35 = 5 × 7, so 35 ÷ 7 = 5 remainder 5

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

Calculating a Decimal

When we want to calculate a decimal equivalent of a frac
method of short division:

$\frac{5}{6}$ =



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.

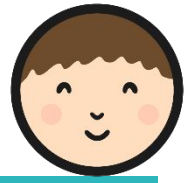
$\frac{5}{6} = 0.8\dot{3}$

Step 1: Calculate 50 ÷ 6 mediately before 50 is 48, nder 2

Step 2: Calculate 20 ÷ 6 The n nes immediately before 20 is 18, 18 = 3 ÷ 6 = 3 remainder 2

Step 3: Calculate 20 ÷ 6 The multiple of 6 that comes immediately before 20 is 18, 18 = 3 × 6, so 20 ÷ 6 = 3 remainder 2

Decimal Equivalents

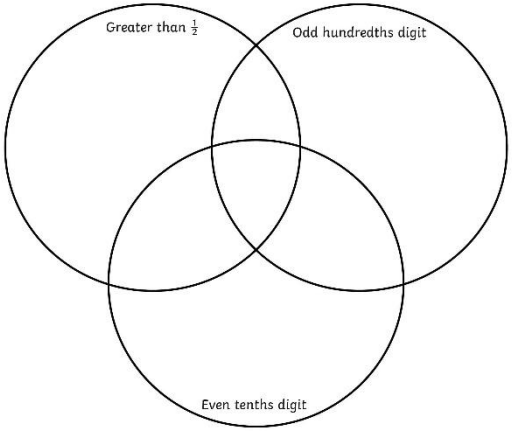


Decimal Fraction Equivalents Number Sort

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:

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



l Fraction Equivalents Number Sort

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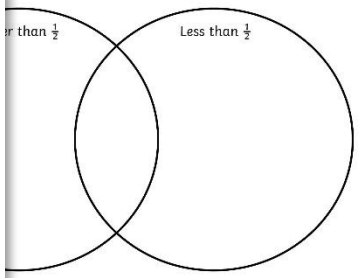
cimal equivalent, and then sort the decimal numbers into the gram:

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



cimal equivalent, and then sort the decimal numbers into the agram:

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

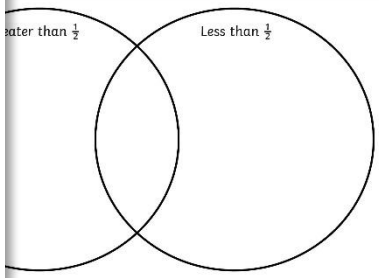
d hundredths digit	Even hundredths digit

al Fraction Equivalents Number Sort

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

s decimal equivalent, and then sort the decimal numbers into the diagram:

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



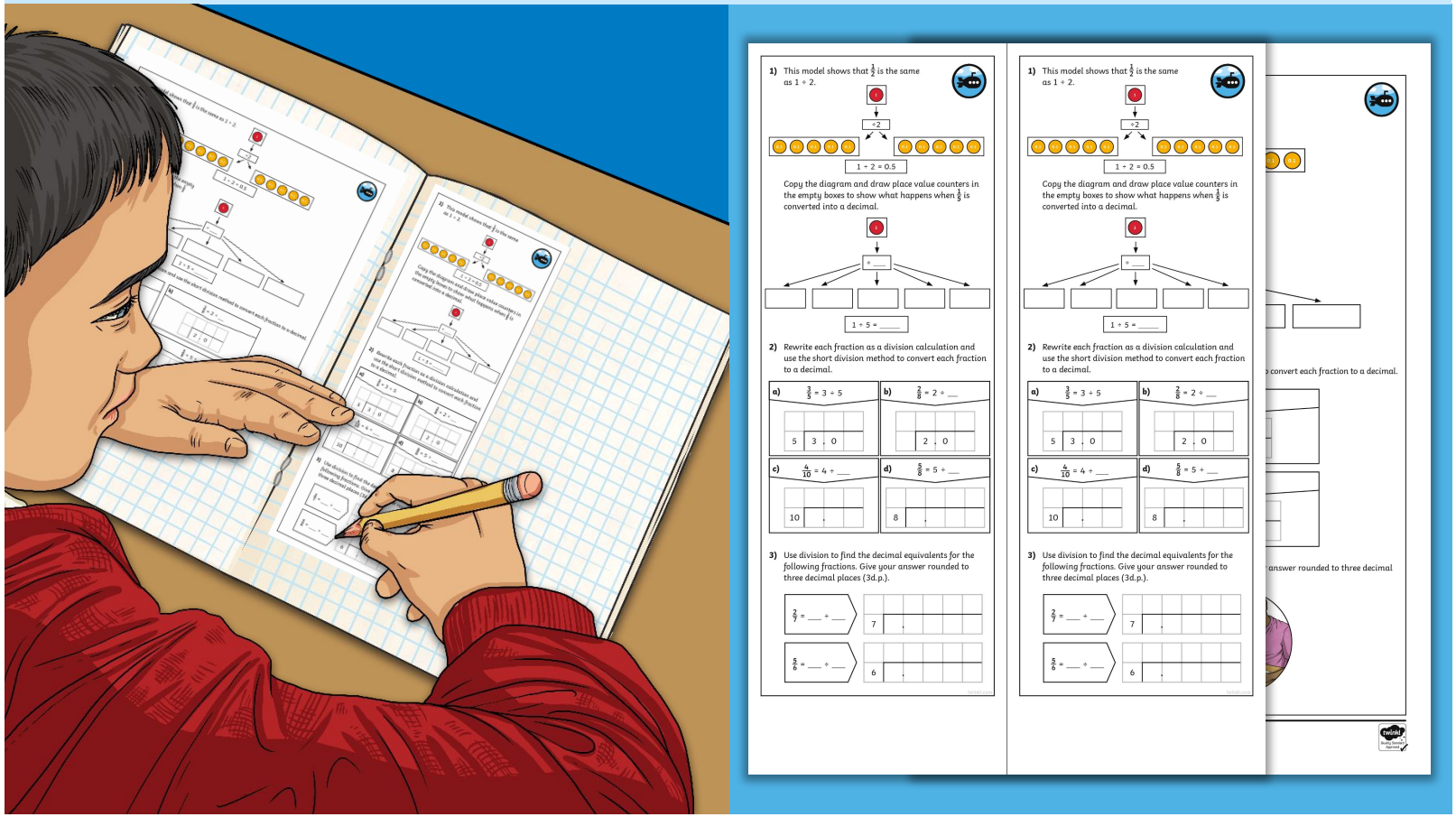
s decimal equivalent, and then sort the decimal numbers into the l diagram:

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

Odd tenths digit	Even tenths digit

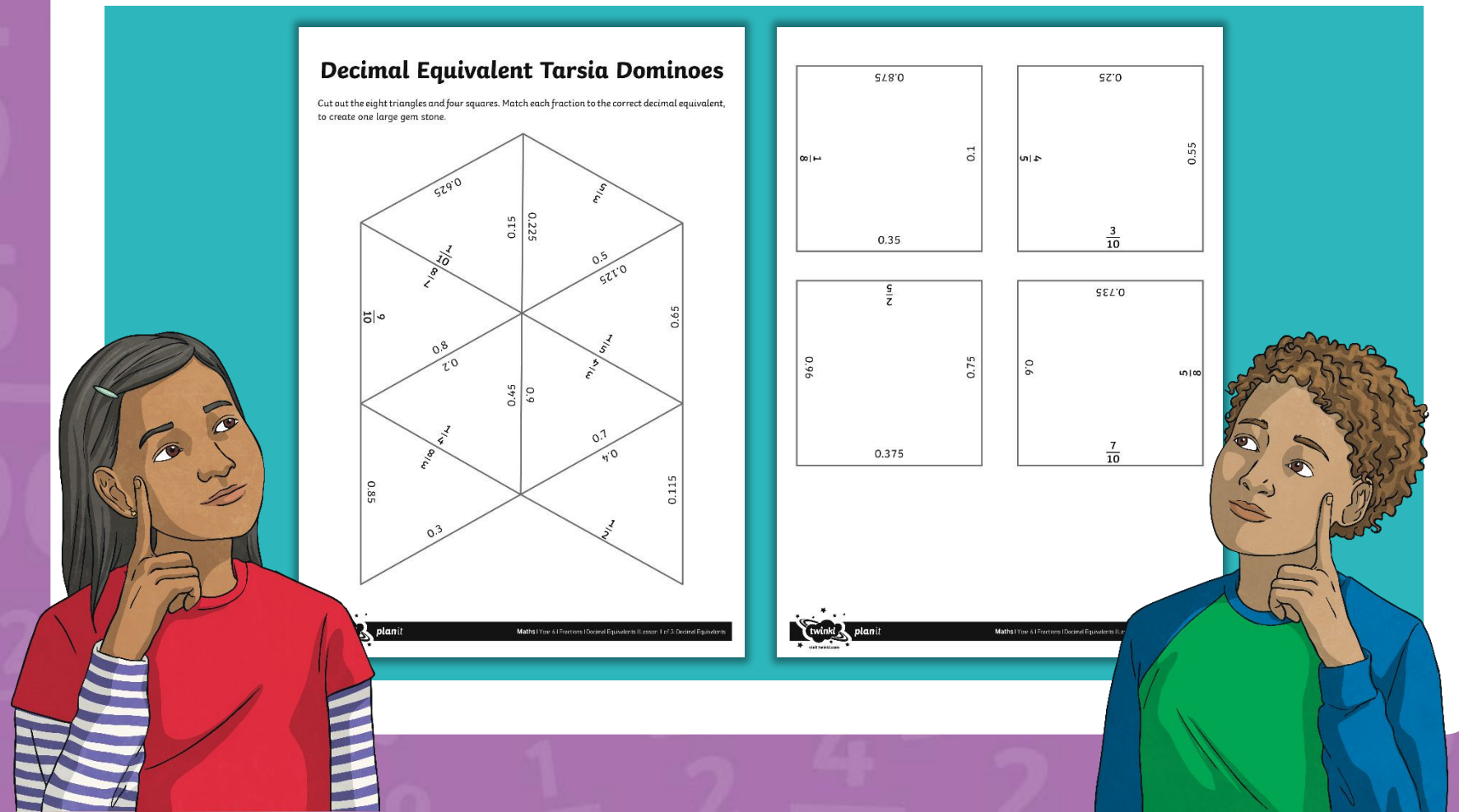
Diving into Mastery

Dive in by completing your own activity!



Tarsia Domino Puzzle

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



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