# Week 12, Day 1
Fractions, decimals and percentages

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.
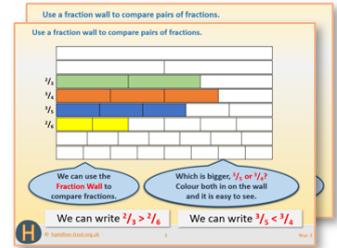
   OR start by carefully reading through the **Learning Reminders**.
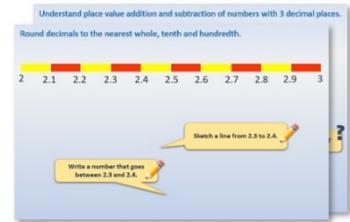
2. Tackle the questions on the **Practice Sheet**.
    There might be a choice of either Mild (easier) or Hot (harder)!
   Check the answers.
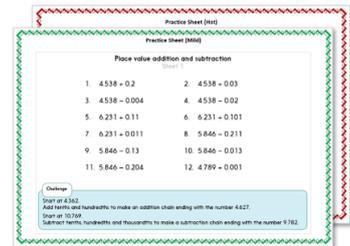
3. Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**

4. Have I mastered the topic? A few questions to **Check your understanding**.
    Fold the page to hide the answers!

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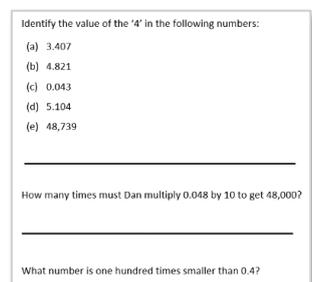
Learning Reminders

Find equivalent fractions, decimals and percentages.

What fraction of the big square is 1 little square?

How can we write this as a decimal?

$^1/_{100} \equiv 0.01$

What is this as a percentage of the whole square?

$^1/_{100} \equiv 1\%$
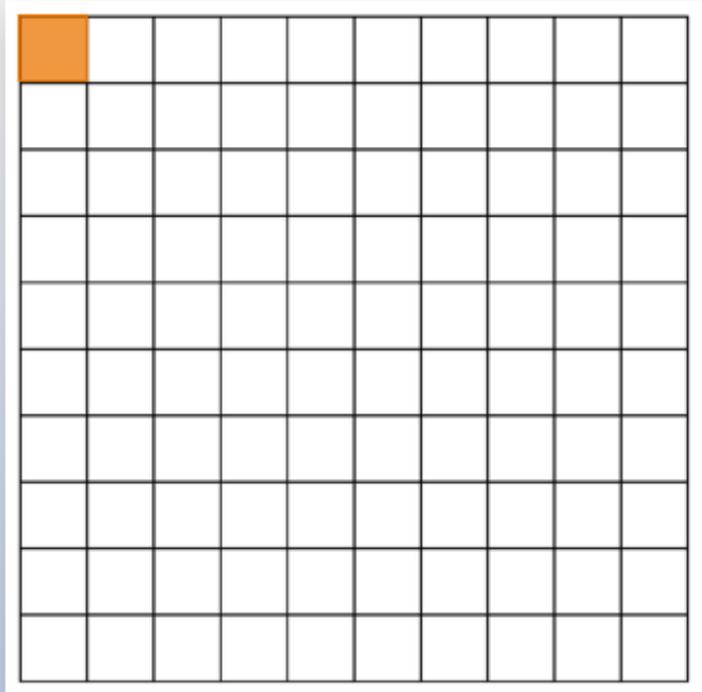
Find equivalent fractions, decimals and percentages.

What fraction is two rows?

What fraction is one row?

How can we write this as a decimal?

And as a percentage?

And five rows?
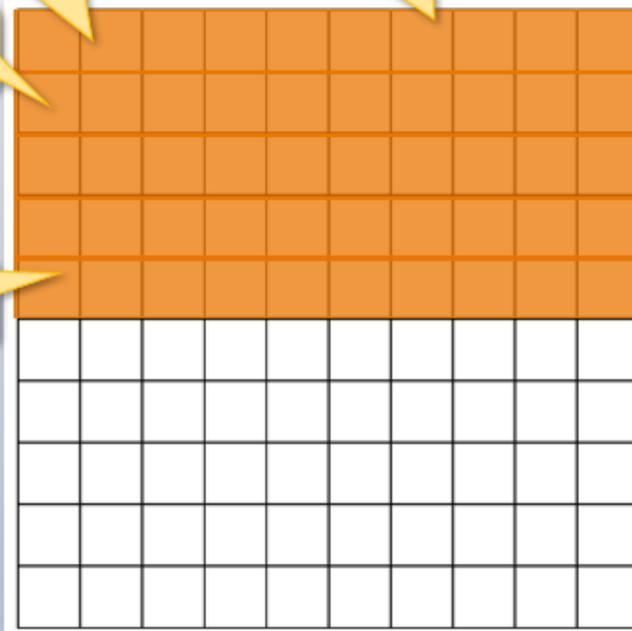
$^{10}/_{100}, \ ^1/_{10}, \ 0.1, \ 10\%$

$^2/_{10}, \ ^1/_5, \ 0.2, \ 20\%$

$^5/_{10}, \ ^1/_2, \ 0.5, \ 50\%$

Learning Reminders

Find equivalent fractions, decimals and percentages.

Write the fraction(s) shaded (simplifying as much as possible), the decimal and the percentage shaded.
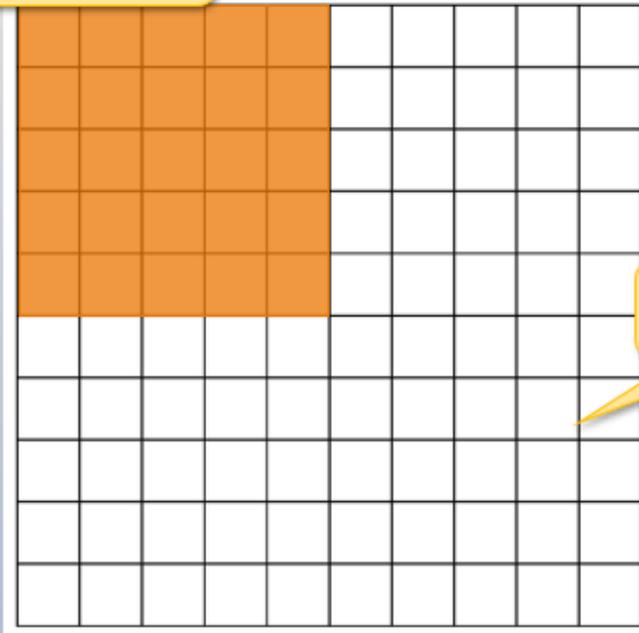
$^{25}/_{10}$, $^1/_4$, 0.25, 25%

How much is not shaded?

$^{75}/_{10}$, $^3/_4$, 0.75, 75%

Find equivalent fractions, decimals and percentages.

Write the equivalent fraction, decimal and percentage.
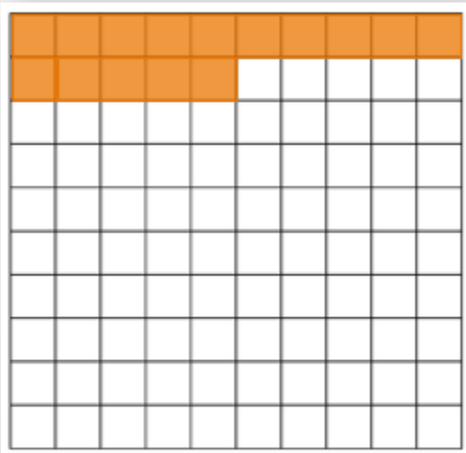
$^{15}/_{100}$, $^3/_{20}$, 0.15, 15%
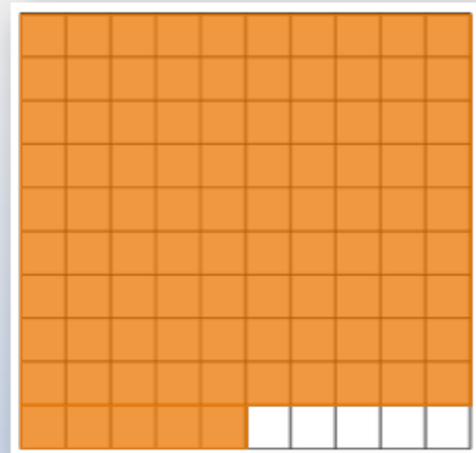
$^{95}/_{100}$, $^{19}/_{20}$, 0.95, 95%

Learning Reminders

Find equivalent fractions, decimals and percentages.

$^2/_5$ 0.3

? **Which is more? How can you compare them?**

We can write both as decimals (0.4 and 0.3) or both as tenths, $^4/_{10}$ and $^3/_{10}$, or even as percentages!

? **Now use equivalence to compare these.**

$^3/_4$ and 60%

75% and 60%
so $^3/_4$ > 60%

0.25 and $^3/_{10}$

25% and 30%
so $^3/_{10}$ > 0.25

Today's tip is to <u>use equivalence</u> to compare fractions, decimals and percentages.

Practice Sheet Mild
Equivalent fractions, decimals and percentages

Fill in the missing fractions, decimals and percentages.

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	
$\frac{3}{4}$		75%
	0.1	10%
$\frac{1}{5}$		20%
$\frac{9}{10}$	0.9	
$\frac{2}{5}$	0.4	
$\frac{1}{4}$		25%

Write >, < or = between each pair.

50% $\frac{7}{10}$

$\frac{3}{5}$ 60%

$\frac{1}{10}$ 1%

$\frac{1}{5}$ 0.3

Challenge

Put these amounts in order, smallest to biggest:

0.4 $\frac{1}{4}$ 44%   0.04

Practice Sheet Hot
Equivalent fractions, decimals and percentages

Fill in the missing fractions, decimals and percentages.

Fraction	Decimal	Percentage
	0.5	
$\frac{1}{20}$		
	0.1	
		20%
	0.9	
		25%
$\frac{1}{8}$		

Write >, < or = between each pair.

$\frac{1}{4}$ 0.3

$\frac{7}{10}$ 80%

$\frac{2}{5}$ 0.25

$\frac{3}{5}$ 60%

Challenge

Order these amounts, smallest to biggest:

77%   1.7   0.17 $\frac{1}{7}$ 1.07

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Practice Sheets Answers

Equivalent fractions, decimals and percentages (mild)

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{3}{4}$	0.75	75%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{9}{10}$	0.9	90%
$\frac{2}{5}$	0.4	40%
$\frac{1}{4}$	0.25	25%

$50\% < \frac{7}{10}$

$\frac{3}{5} = 60\%$

$\frac{1}{10} > 1\%$

$\frac{1}{5} < 0.3$

Challenge

$0.04 < \frac{1}{4} < 0.4 < 44\%$

Practice Sheets Answers

Equivalent fractions, decimals and percentages (hot)

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{20}$	0.05	5%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{9}{10}$	0.9	90%
$\frac{1}{4}$	0.25	25%
$\frac{1}{8}$	0.125	12.5%

$\frac{1}{4}$ <   0.3

$\frac{7}{10}$ <   80%

$\frac{2}{5}$ >   0.25

$\frac{3}{5}$ =   60%

Challenge

$\frac{1}{7}$ <   0.17   <   77%   < 1.07 < 1.7

Work in pairs

What to do:

• Work together to match each 100 square picture to the matching fraction and percentage cards.

• Can you match 100% of the cards before time is up?

S-t-r-e-t-c-h:

£80									
$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%	$\frac{1}{10}$ 10%

Use the bar model to help you to work out 10%, 20% and 50% of £80.

Learning outcomes:
• I understand what percent means.
• I know the equivalent percentages for half and tenths.
• I am beginning to find 10%, 20% and 50% of amounts.

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$$\frac{1}{10}$$

$$\frac{2}{10}$$

$$\frac{3}{10}$$

$$\frac{4}{10}$$

$$\frac{1}{2}$$

$$\frac{6}{10}$$

$$\frac{7}{10}$$

$$\frac{8}{10}$$

$$\frac{9}{10}$$

$$\frac{10}{10}$$

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10%	20%
30%	40%
50%	60%
70%	80%
90%	100%

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Check your understanding
Questions

Write these numbers in order, starting with the smallest:

$^7/_{10}$, 0.6, $^2/_5$, $^{50}/_{100}$

Write a fraction which is greater than 0.4 and less than 0.5.

Write a decimal which is greater than $^5/_8$ and less than $^6/_8$.

What percentage of this grid is shaded?
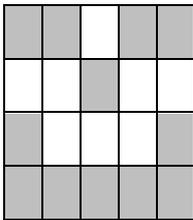
Emilia scores 35 out of 70 in a test. Jay scores 55% in the same test.
Who has the higher score? Explain how you know.

Write these numbers in order, starting with the smallest:

0.43, $^3/_4$, 34%, $^4/_3$, 3.4

Check your understanding
Answers

Write these numbers in order, starting with the smallest:

$^2/_5$, $^{50}/_{100}$, 0.6, $^7/_{10}$

Probably best-solved by converting each to a decimal, i.e. 0.4, 0.5, 0.6, 0.7.

Write a fraction which is greater than 0.4 and less than 0.5.

Various e.g. $^9/_{20}$, $^{45}/_{100}$ (i.e. between $^2/_5$ and $^1/_2$).

Write a decimal which is greater than $^5/_8$ and less than $^6/_8$.

Various e.g. 0.65, 0.7, 0.25 (i.e. between 0.625 and 0.75).

What percentage of this grid is shaded? 60%, since 12 out of 20 sections are shaded. An answer of $^{12}/_{20}$ shows that this has been recognised, but the fraction has not been changed to an equivalent percentage. Another common error is an answer of 12%, showing a conceptual misunderstanding of percentages.
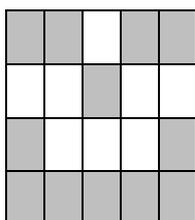
Emilia scores 35 out of 70 in a test. Jay scores 55% in the same test.
Who has the higher score? Explain how you know.

Jay has scored higher since Emilia's score of 35 out of 70 is equivalent to only 50%.

Write these numbers in order, starting with the smallest:

34%, 0.43, $^3/_4$, $^4/_3$, 3.4