

# Year 6 maths newsletter



## Spring 1

This half-term will be split into three maths topics 'decimals,' 'percentages' and 'algebra'.

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# Decimals

## Three decimal places

Year 6 will recap their understanding of numbers with up to 3 decimal places. They will use physical resources to investigate exchanging between columns

Ones	tenths	hundredths	thousandths
1 1 1	0.1 0.1 0.1 0.1	0.01 0.01	0.001 0.001 0.001 0.001

$3 + \frac{4}{10} + \frac{2}{100} + \frac{6}{1000} \leftarrow 3.426 \rightarrow 3 + 0.4 + 0.02 + 0.006$

1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

## Multiply and divide by 10, 100 and 1000

Children will apply their knowledge of making numbers 10, 100 or 1,000 times bigger or smaller by moving the number 1, 2 or 3 places to the left or right.

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
			2	0	8	
		$\leftarrow \times 10$	2	0	8	
			2	0	8	
				$\rightarrow \div 10$	8	

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
		4	3	5		
$\leftarrow \times 100$	4	3	5			
	4	3	5			
				$\rightarrow \div 100$	5	

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
			1	3	5	1
$\leftarrow \times 1000$	1	3	5	1		
	1	3	5	1		
					$\rightarrow \div 1000$	1

## Fractions to decimals

$\frac{7}{20} = \frac{35}{100} \text{ or } 0.35$   
 $\frac{7}{25} = \frac{28}{100} \text{ or } 0.28$

$\frac{7}{50} = \frac{14}{100} \text{ or } 0.14$   
 $\frac{8}{200} = \frac{4}{100} \text{ or } 0.04$

0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	1
	$\frac{1}{5}$		$\frac{2}{5}$	$\frac{1}{2}$	$\frac{3}{5}$		$\frac{4}{5}$		

# Percentages

## Fractions to percentages

Children will understand that 'percent' means 'out of 100' and use this to convert fractions to percentages.

$\frac{15}{50} = \frac{30}{100} = 0.3 = 30\%$

$\frac{60}{200} = \frac{30}{100} = 0.3 = 30\%$

## Equivalent percentages

Children use their knowledge of common equivalent fractions and decimals to find the equivalent percentage.

Decimal	Fraction	Percentage
0.35	$\frac{35}{100}$	35%
0.27		
0.6		
0.06		

## Percentages (continued)

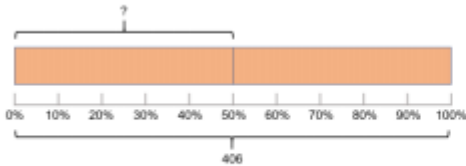
### Percentage of an amount

$$50\% = \frac{1}{2} \text{ so we can divide by 2}$$

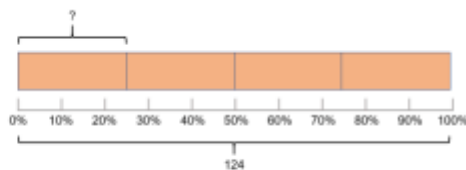
$$10\% = \frac{1}{10} \text{ so we can divide by 10}$$

$$25\% = \frac{1}{4} \text{ so we can divide by 4}$$

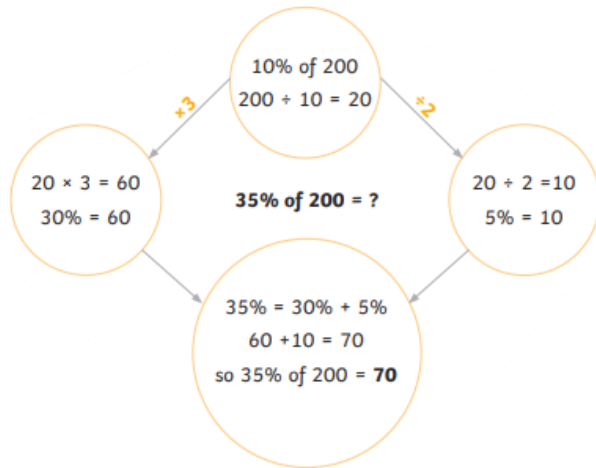
$$1\% = \frac{1}{100} \text{ so we can divide by 100}$$



$$50\% \text{ of } 406 =$$



$$25\% \text{ of } 124 =$$



## Algebra

### Forming expressions

Children are introduced to conventions that we use when writing algebraic expressions. E.g.  $y \times 4$  as  $4y$ .

Add 14 to $a$	$a + 14$
Subtract 20 from $b$	$b - 20$
Multiply $c$ by 4	$4c$
12 more than $d$	$d + 12$
Multiply $e$ by 3 and subtract 5	$3e - 5$
Add 12 to $f$ and then multiply by 2	$2(f + 12)$

### Substitution

Children substitute into simple expressions to find a particular value.

If  $\star = 7$  and  $\heartsuit = 5$ , what is the value of:

$$\star + \heartsuit + \heartsuit$$

If  $a = 7$  and  $b = 5$  what is the value of:

$$a + b + b$$

### Forming equations

Building on the earlier step of forming expressions, children now use algebraic notation to form one-step equations.

Words	Concrete	Algebra
I think of a number		$x$
Add 3		$x + 3$
My answer is 5		$x + 3 = 5$

### Equations with pairs of unknowns

$ab = 18$		$2a + b = 10$	
$a$	$b$	$a$	$b$
1	18	2	6
2	9	3	4
3	6	4	2
6	3	5	0
9	2		
18	1		

## Vocabulary

The following vocabulary is used in the classroom to support learning. Please continue to support your child at home by using the same vocabulary.

decimals	percentages	algebra
Hundredth	per cent (%) out of 100	variable
Thousandth	discount	unknown
decimal place, decimal fraction	equivalent fraction, equivalent decimal	expression
recurring decimal	convert	equation
partitioning	compare	substitution
exchanging	the whole	enumerate

## Further support at home

To support your child at home, we encourage the use of the classroom vocabulary and the same methods/strategies of calculation.

When working with your child at home, you can ask them the following question starters to further demonstrate their understanding.

## Times tables practise

Times Table Rock Stars is a fun and interactive way for your child to practise their times tables at home. By Year 6, children will have been taught all their times tables up to 12 X 12. Please continue to practise and support your child with these at home.

<https://trockstars.com/>

If you have any questions on how to support your child at home or need any log in information, please contact your child's class teacher.