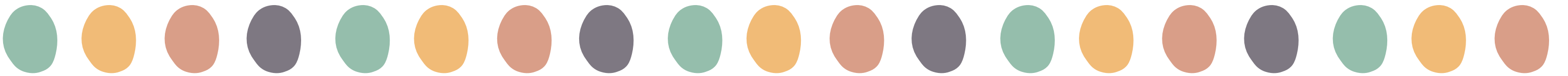


Y5- Overview

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Unit	1	2	3	4	5		6	7	8	9	10	

	Number and place value
	Number facts
	Addition and subtraction
	Multiplication and division
	Fractions
	Geometry
	Other

Autumn 2	Negative numbers (2 weeks)
Ready to progress	
NCETM documents	https://www.ncetm.org.uk/media/q1cft4w30/ncetm_mm_spl_y5_se27_teach.pdf#page=4
Small steps	- To represent a change story using addition and subtraction symbols. - To interpret numbers greater than and less than zero in different contexts. - To read and write negative numbers. - To explain how the value of a number relates to its position from zero. - To identify and place negative numbers on a number line. - To interpret sets of negative and positive numbers in a range of contexts. - To use knowledge of positive and negative numbers to calculate intervals. - To explain how negative numbers are used on a coordinate grid. - To use knowledge of positive and negative numbers to interpret graphs. - To solve problems involving positive and negative numbers in a range of contexts.
Links	NCETM-https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ncetm.org.uk%2Fmedia%2Fv0bp4ret%2Fcp-year-5-unit-3-negative-numbers.pptx&wdOrigin=BROWSELINK OAK https://www.thenationalacademy/teachers/programmes/maths-primary-ks2/units/negative-numbers/lessons?sid-35af97=Als598bx-F&sm=0&src=3 Mastery with greater depth https://www.ncetm.org.uk/media/lp0o2lgv/mastery_assessment_y5.pdf
Reasoning	Possible Answers A number rounded to the nearest 10 is -230. What is the smallest possible number it could be? What Do You Notice? Round -15 to the nearest 10. Round it to the nearest 100. What do you notice about how the number changes when you round it to different place values? Can you think of other numbers like this? Spot the Mistake -4 + 7 = 3 -3 + 5 = 2 What is wrong with this calculation? Can you fix it using addition and subtraction? Always, Sometimes, Never Is it always, sometimes, or never true that when you add a negative number to a positive number, the result will be negative? Working Backwards A train journey starts at -50 meters (below sea level) and rises 80 meters. What is its final position? Can you calculate using addition? The Answer Is... The answer is 6. What is the question that involves both positive and negative numbers? What Do You Notice? -4, -7, -10 What do you notice about these negative numbers? How does their value change as you move from left to right on a number line? Convince Me Convince me that -2 - 6 = -8. How can you show this with a number line or equation?



Negative numbers
(2 weeks)

Problem solving



Click on me

Glossary

- Positive change - An overall amount has increased.
- Negative change - An overall amount has decreased.
- Negative number - Any value less than zero.
- Temperature - Temperature is how hot or cold something is and generally in the UK is measured using the Celsius scale.
- Positive - Numbers greater than zero.
- Negative - Numbers less than zero
- Numeral - A symbol or name that stands for a number
- Negative number - A number less than zero.
- Interval - An interval is what is between two values. On a scale, intervals are shown using a small mark or line to show the space between.
- Temperature - How hot or cold something is.
- Elevation - Used to describe an object's height above a given height, such as sea level.
- Bridging - A strategy which uses addition or subtraction to cross a number boundary.
- Partitioning - Splitting a number or object into smaller parts.
- Coordinates - Coordinates are a set of values that show an exact position.
- Quadrant - Any of the four areas made when a plane is divided by an x and y axis.
- Axis / Axes - The x and y lines that cross at right angles to make a graph or grid.
- Difference - The result of subtracting one number from another.

Stem sentences

• Negative numbers are below zero.'

• 'Negative numbers are less than zero.'

• 'Positive numbers are above zero.'

• 'Positive numbers are greater than zero.'

• Negative numbers are below zero.'

• 'Negative numbers are less than zero.'

• 'Positive numbers are above zero.'

• 'Positive numbers are greater than zero.'

'Negative numbers are below zero.'

becomes 'Negative numbers are to the left of zero.'

'Positive numbers are above zero.'

becomes 'Positive numbers are to the right of zero.'

This should then lead to the following generalisations:

'Negative numbers are less than zero.'

'Positive numbers are greater than zero.'

For both positive and negative numbers, the larger the value of the number, the further it is from zero.

For negative numbers, the further the number is from zero, the colder it is.

For positive temperatures, the further the number is from zero, the warmer it is.

When an object is below sea level, the further the number from zero, the deeper the object

When an object is above sea level, the further the number from zero, the higher the object.

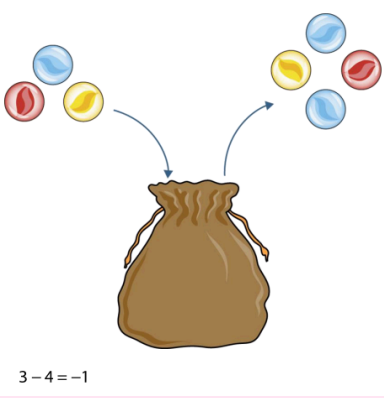
When the y-coordinate is negative, the point is positioned below the x-axis

When the y-coordinate is zero, the point is positioned on the x-axis

When the x-coordinate is negative, the point is positioned to the left of the y-axis.'

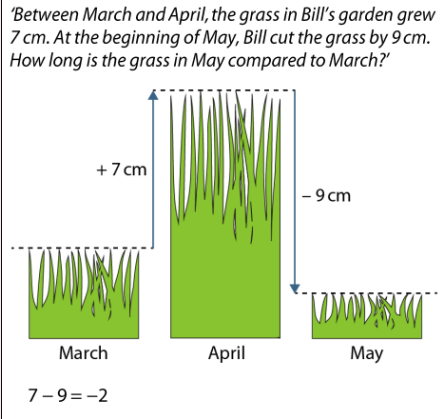
'When the x-coordinate is zero, the point is positioned on the y-axis.'

Representations



3 - 4 = -1

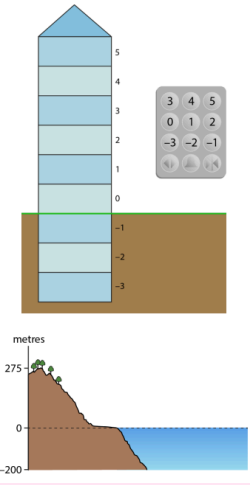
'Between March and April, the grass in Bill's garden grew 7 cm. At the beginning of May, Bill cut the grass by 9 cm. How long is the grass in May compared to March?'



7 - 9 = -2

Temperatures in different places on a given day:

Location	Temperature (°C)
London, England	10
Stockholm, Sweden	-10
North Pole	-40



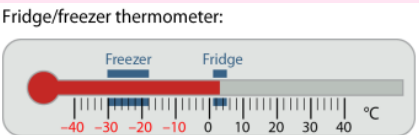
metres

275

0

-200

Fridge/freezer thermometer:

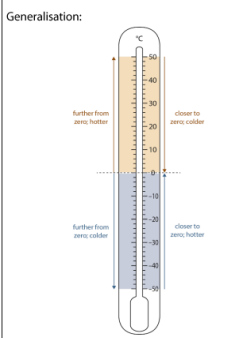


Horizontal number line:

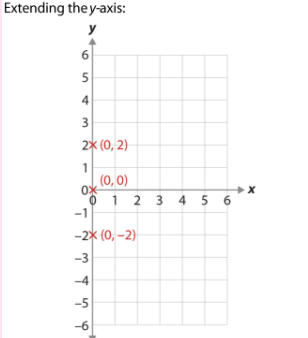


neither positive nor negative

Generalisation:



Extending the y-axis:



Distance from zero:

