

Maths - Year 6

Calculating 1: Adding and Subtracting Negative Numbers in Context, and Large Numbers

Key Vocabulary

Negative number	An amount below zero.
Magnitude	The size of one number compared to another.
Approximate	Close to the actual, but not exact.
Interval	The distance between two points or the numbers between two values, e.g. the sequence 2, 4, 6 has intervals of 2.
Difference	The value of subtracting one number from another.
Infinity	A number greater than any assignable quantity or countable number.
Bridging	Partitioning the number to be added or subtracted to help with calculating.
Partitioning	Splitting a number in different ways.
Rounding	Increasing or decreasing a number or amount to make it closer to (usually) a multiple of ten, or a whole measuring unit, e.g. rounding 353 to 350 or 89 cm to 1 metre.
Adjusting	Make a small change to a calculation to support working out.
Complements	Numbers that are added together to make a given total.
Equivalence	At least two numbers or quantities are the same or equal to each other.

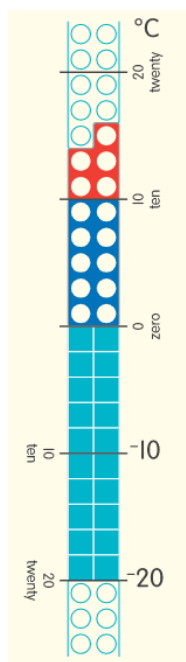
Mathematical Skills

- Order negative and positive numbers correctly and show their positions on a number line.
- Use a number line to show the effect of adding or subtracting a positive number across 0 in context, and write the related number sentence e.g. $-3 + 8 = 5$, $4 - 9 = -5$.
- Explain that calculating the difference between a positive and a negative number involves adding the magnitudes, that is, 'the distance' from 0, of both numbers.
- Choose appropriately between a range of strategies for adding and subtracting large numbers mentally.
- Use an understanding of inverse operations to solve missing number problems involving adding or subtracting large numbers.

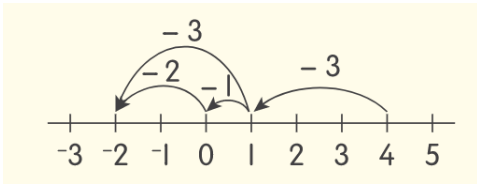
Mathematical Methods

- Using negative numbers.

Object	Approximate surface temperature (°C)
Earth	15
Jupiter	-110
Mars	-65
Mercury	166
Moon	-20
Neptune	-200
Pluto	-225
Saturn	-140
Sun	5500
Uranus	-195
Venus	465

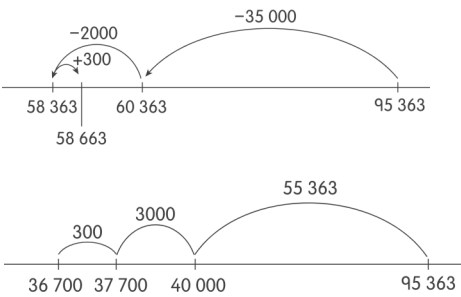


- Finding differences: Adding and subtracting across 0 e.g. On a particular day, the temperature is 4°C at noon, then falls 3°C by 5pm. The temperature falls another 3°C by 10pm.



- Adding and subtracting large numbers.

Ten thousands	Thousands	Hundreds	Tens	Ones
3	6	7	0	4
9	5	3	6	7



	3	6	7	0	4						
+	9	5	3	6	7						
	1	3	2	0	7	1					

- Calculating missing numbers.

$$7828 \text{ kg} + \square \text{ kg} = 13\,355 \text{ kg}$$

$$13\,355 \text{ kg} - 7828 \text{ kg} = \square \text{ kg}$$

Can you..?

- Patsy is struggling with negative numbers. Can you explain to her how to calculate $8 - 27$?
- Mount Everest's peak is 8848 metres above sea level. Challenger Deep is 10,994 metres below sea level. Can you calculate the difference between these extremes? Show your working.