Deepdale Community Primary School - Maths Knowledge Organiser

Topic: Counting and Place Value | Year 6

Key Vocabulary:

units

ones

tens

hundreds

thousands

ten thousands

hundred thousands

millions

ten million

powers of 10

place holder

equal to

estimate

ascending

descending

interval

round

digit

negative number

positive number

Key learning: recognise the place value of each digit up to 10,000,000

3 926 471

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
3	9	2	6	4	7	1

three million, nine hundred and twenty-six thousand, four hundred and seventy-one

3 926 471	
3 926 000	471

3 926 471 — 3 500 000, 426 300, 171

0   1 000 000   2 000 000   3 000 000   4 000 000   5 000 000   6 000 000   7 000 000   8 000 000   9 000 000   10 000 000

Key learning: use negative numbers in context and calculate intervals across zero.

Example using temperature:

On Monday the temperature was -5°C and on Tuesday 4°C. What was the difference between the temperature on Monday and the temperature on Tuesday?

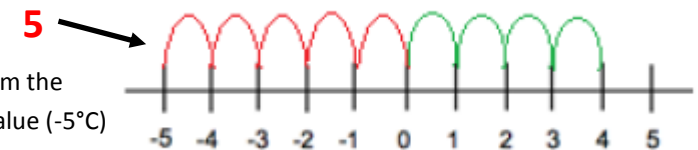This is best worked out using a number line to find the difference

Answer: 9°C

Steps:

Draw an empty number line.
Use the number line and identify the position of the numbers on it.
Use number bond knowledge to identify the jump to zero from the lower value number.
Repeat from zero to the higher value number.
Add the two numbers.

Jump to zero from the lower value (4°C)

4

5

Jump to zero from the lower number value (-5°C)

-5 -4 -3 -2 -1 0 1 2 3 4 5

Key learning: compare and order numbers up to 10,000,000

Ordering

Example: largest to smallest

- When ordering numbers starting with the largest, look at the most significant digit.

  <u>3</u>4 769   <u>8</u>55 824   <u>1</u>09 341   <u>8</u>23 002

- Recognise what this digit is worth.

  30 000   800 000   100 000   800 000

- If two numbers have the same most significant digit, look at the next most significant digit and so on.

  <u>85</u>5 824   <u>82</u>3 002
  850 000   820 000

- Put the numbers in order.

  855 824   823 002   109 341   34 769

Comparing

equals

26 + 38 = 8 × 8

Both calculations have the value 64.

greater than

223 873 > 98 256

The number on the left has 2 hundred thousands and the number on the right has 0 hundred thousands.

less than

901 198 < 1 091 098

The number on the right has 1 million and the number on the left has 0 millions.

Key learning: round any number to a required degree of accuracy

Rounding means making a number simpler but keeping it's value close to what it was. The result is less accurate, but easier to use.

Example:

Round 782,856 to the nearest 10,000

782,856 rounds to 780,000 (to the nearest 10,000) because it is only 2,856 away from this but more than 7,000 away from 790,000.

This is best modelled and understood using a number line:

780 000   Over 7 000 away from here ⟶ 790 000

782 856

2 856 away from here