NUMBER

Autumn Term

KS2

Topics

- Ordering numbers
- Four operations
- Place value
- Direct number

What do I need to be able to do?

- To put numbers in order from smallest to largest and largest to smallest
- To be able to use the four operations confidently
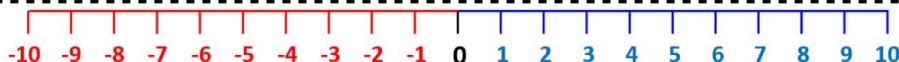- To be able to work with positive and negative numbers

Key Vocabulary

Digit	A single symbol used to make a numeral
Order	Putting things into the correct place following some rule
Place Value	The value where a digit is in the number
Ascending	Arrange from smallest to largest
Descending	Arrange from largest to smallest
Decimal point	A point (small dot) used to separate the whole number part from the fractional part of a number
Subtraction	The result of subtracting one number from another
Double	To multiply by 2
Halve	To divide in to 2 equal parts
Tenth	One part in ten equal parts
Hundredth	One part in a hundred equal parts
Negative	Less than 0

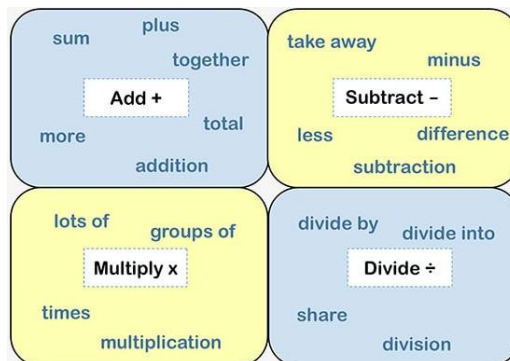-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

Career Links

Being able to confidently work with numbers is a great skill to have and has lots of links with a number of careers such as:

- Accountancy/banking
- Insurance
- Chef
- Construction
- Hairdressing

Other vocabulary

Add +: sum, plus, together, more, total, addition

Subtract −: take away, minus, less, difference, subtraction

Multiply x: lots of, groups of, times, multiplication

Divide ÷: divide by, divide into, share, division

Place value chart

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths	thousandths	ten thousandths	hundred thousandths
HTH	TTh	Th	H	T	O	.	t	h	th	tth	hth
100,000	10,000	1,000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1,000}$	$\frac{1}{10,000}$	$\frac{1}{100,000}$

Whole Number Part — Fractional Part

Decimal Point

Definition	Characteristics
Examples	Non-Examples

Multiplying Integers Rules

$$(+) \times (+) = (+)$$
$$(-) \times (-) = (+)$$
$$(+) \times (-) = (-)$$
$$(-) \times (+) = (-)$$

Year 7 – Knowledge Organiser

WHS

NUMBER

Topics

- Addition and subtraction of decimals
- Multiplication and division of decimals

What do I need to be able to do?

- Add and subtract decimals using the column method.
- Multiply and divide decimals by whole numbers and decimals by decimals using a written method.

Key Vocabulary

Place Value	The value where a digit is in the number
Decimal Point	A point (small dot) used to separate the whole number part from the fractional part of a number
Equivalence	Having the same value
Estimate	To find the value that is close enough to the right answer
Partition	Any of the multiplication results we get leading up to an overall multiplication result

a) 41.8 + 0.15 =

Line up the decimal points

```
   41.80 ⎫
 +  0.15 ⎭ Pad with 0
 ─────────   and add
   41.95
```

b) 0.166 + 2.2 =

Line up the decimal points

```
   0.116 ⎫
 + 2.200 ⎭ Pad with 0
 ─────────   and add
   2.316
```

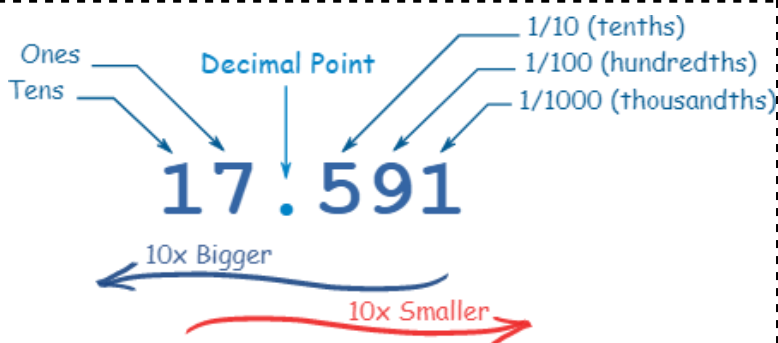### Addition
- Find the decimal
- Line up the decimals
- Fill in empty spots with zero
- Add
- Bring down the decimal in your answer

Subtraction
- Find the decimal
- Line up the decimals
- Fill in empty spots with zero
- Subtract
- Bring down the decimal in your answer

Ones
Tens
Decimal Point
1/10 (tenths)
1/100 (hundredths)
1/1000 (thousandths)

17.591

10x Bigger
10x Smaller

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Multiplying Decimals:

13.75×5.5

forget about decimal points and multiply

```
  1375
 ×  55
 ──────
 75625
```

decimal places of the first number
+
decimal places of the second number
=
decimal places of the third number

```
 13.75  ← 2 d.p.
× 5.5   ← 1 d.p.
 ──────
 75.625 ← 3 d.p.
```

Definition	Characteristics
Examples	**Non-Examples**

Year 7 – Knowledge Organiser

WHS

NUMBER

Topics

- Priority of operations
- Inverse Operations
- Powers and roots

What do I need to be able to do?

- To understand what order operations have to be applied in
- To understand why division and multiplication happen before addition and subtraction
- To understand why inverse operations are used
- Recognise and calculate square numbers and roots.
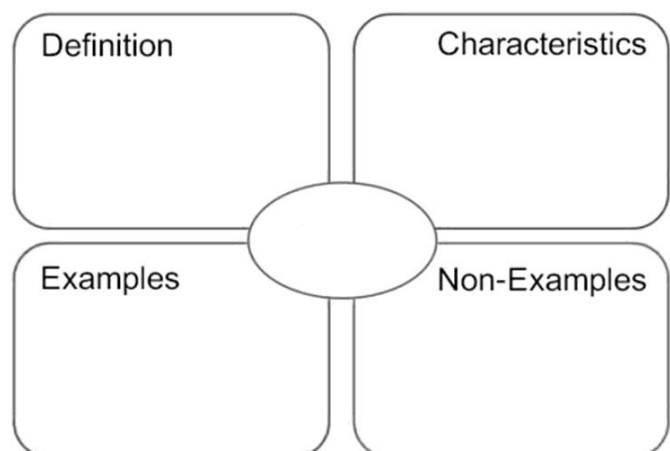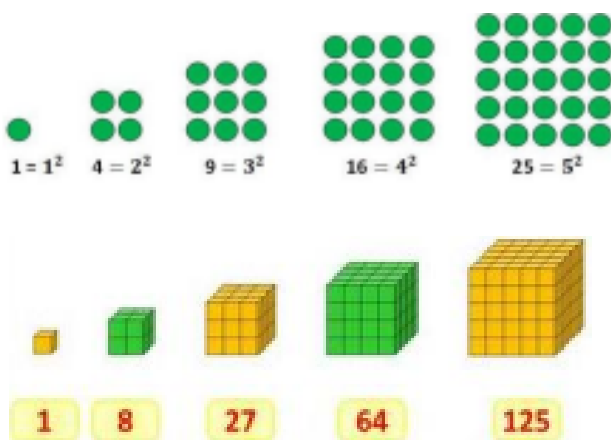- Recognise and calculate cube numbers and roots.

Key Vocabulary

Sum/Addition	The result of adding two or more numbers together
Negative	Less than 0
Order	The rules that say which calculations comes first in an expression
Operations	A mathematical process
Power(Index)	The power (or exponent) of a number says how many times to use the number in a multiplication
Inverse	Opposite in effect. The reverse of.
Square	Multiply by itself
Cube	Multiply by itself twice
Root	The value that, when multiplied by itself, gives the number

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B	**Brackets**	$10 \times (4 + 2) = 10 \times 6 = 60$
I	**Indices**	$5 + 2^2 = 5 + 4 = 9$
D	**Division**	$10 + 6 \div 2 = 10 + 3 = 13$
M	**Multiplication**	$10 - 4 \times 2 = 10 - 8 = 2$
A	**Addition**	$10 \times 4 + 7 = 40 + 7 = 47$
S	**Subtraction**	$10 \div 2 - 3 = 5 - 3 = 2$

$1 = 1^2 \quad 4 = 2^2 \quad 9 = 3^2 \quad 16 = 4^2 \quad 25 = 5^2$

1   8   27   64   125

Definition	Characteristics
Examples	Non-Examples

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