

Year 6 Number: Fractions, Decimals and Percentages Knowledge Organiser

National Curriculum Aims

- identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
- multiply one-digit numbers with up to 2 decimal places by whole numbers
- use written division methods in cases where the answer has up to 2 decimal places
- solve problems which require answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Key Vocabulary

Calculate	To work out the value of something.
Fraction	A number that is part of a whole number which results from dividing one integer by a second integer
Operation	An action which when applied to one or more values gives an output value.
Inverse	The opposite eg the inverse of addition is subtraction.
Addition	The mathematical process of putting things together.
Subtraction	The mathematical process which tells us the difference between two values.
Dividend	The number / value being divided.
Quotient	The result obtained by dividing one number by another.
Percentage	Percent means parts per hundred
Decimal	Smaller than a whole.
Equivalent	An equivalent is something with the same value as something else.



Home Learning

- Practice times tables with your child on the way to and from school.
- When cooking it would be useful to add and subtract ingredient weights in kg - involving decimals.

Core Knowledge and Representations

Subtraction

$$231.44 - 161.25 = 70.19$$

H T U . th hth

$$\begin{array}{r} 1 \quad 1 \quad 3 \quad 1 \\ 2 \quad 3 \quad 1 \quad 4 \quad 4 \\ - 1 \quad 6 \quad 1 \quad 2 \quad 5 \\ \hline 7 \quad 0 \quad 1 \quad 9 \end{array}$$

Addition

$$\begin{array}{r} 2.71 \\ + 42.42 \\ \hline 45.13 \\ \hline 1 \end{array}$$

Multiplication

$$\begin{array}{r} 0.637 \\ \times 2.13 \\ \hline 1911 \\ 1274 \\ 1274 \\ \hline 136221 \end{array}$$

decimals
← 2
← +1
← 3

Division

H T U . th

$$\begin{array}{r} 2 \quad 8 \quad 8 \\ 15 \overline{) 432.0} \\ \underline{30} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

Core Knowledge and Representations

Fractions, Decimals and Percentages Equivalents

Fraction	Percent	Decimal
1	100%	1.0
1/2	50%	0.5
1/3	33.3%	0.33
1/4	25%	0.25
1/5	20%	0.2
1/6	16.6%	0.166
1/8	12.5%	0.125
1/10	10%	0.1

Dividing by 1, 10 or 100

- When you divide by 1 the answer stays the same. $21 \div 1 = 21$
- When you divide by 10, move all the digits one to the right. $210 \div 10 = 21$
- When you divide by 100, move all the digits two places to the right. $2100 \div 100 = 21$

Multiplying by 1, 10, or 100

- When you multiply by 1 the answer stays the same. $21 \times 1 = 21$
- When you multiply by 10, move all the digits one place to the left, putting a zero in the empty space. $21 \times 10 = 210$
- When you multiply by 100, move all the digits two places to the left, putting a zero in the empty spaces. $21 \times 100 = 2100$