STAGE 7: UNIT 4: Proportionate Reasoning

KEYWORDS AND DEFINITIONS

1	Ratio – shows the relative sizes of two or more values of the same unit. Value is separated by a colon eg 3:4
2	Unit – unit of measurement eg cm, ml, m^2
3	Compare (Comparison) - note what is similar or dissimilar between two or more values
4	Cancel – Using factors to write the ratio in the lowest numbers possible, which is usually, but not always a whole number eg 12:8 can be cancelled by dividing each ratio by the Highest Common Factor (HCF) of 4 to give the simplified ratio of 3:2
5	Factor are numbers we can multiply together to get another number: Example: 2 and 3 are factors of 6, because 2 × 3 = 6. Numbers can have many factors but all numbers have at least two factors.
6	Common Factor – the same number (Factor) that can be divided into two or more numbers.
7	Highest Common Factor (HCF) – The highest number that divides exactly into two or more numbers. Example: the HCF of 12 and 16 is 4, because 1, 2 and 4 are common factors of both 12 and 16, and 4 is the Highest Common Factor (HCF).
8	Proportion – a part of a whole eg The proportion of red apples is 2/3, if two of three apples are red. Two quantities are in <u>direct proportion</u> if as one increases the other increases by the same amount eg if we doubled the number of apples and now had six apples, there would be 4 red and 2 green apples.
9	Simplify – cancelling a ratio using common factors eg 4:6 can be simplified to 2:3 by dividing by the common factor of 2
10	Simplest Form - is when the values in a ratio cannot be any smaller while still being a whole number eg 2:3 Simplest Form is also known as Lowest Term
11	Whole Number – A number greater than or equal to 0 that does not have a fractional or decimal part eg 3, 7, 112
12	Unit – unit of measurement eg cm, km, kg

NOTATION

13	Ratios are written by separating with a colon eg a:b or 4:5

PRIOR KNOWLEDGE

14	To know times Tables up to 12 x 12
15	To be able to find the Highest Common Factor (HCF) of 2 or more numbers eg the HCF of 20 and 24 is 4
16	To be able to convert between metric units eg 1.4m is 140cm
17	To know units of time and be able to convert between units of time eg hours to minutes

CORE SUCCESS CRITERIA

18	Write a ratio to compare two or more measurements or objects
19	Convert a ratio to show it in the same units
20	Simplify a ratio by cancelling using common factors
21	Solve problems involving dividing a ratio
22	Be able to convert between different units of measurement
23	Be able to express the solution to a problem