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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Factors and Multiples**  |
| 1. Multiple | The result of multiplying a number by an integer.The **times tables** of a number. | The first five multiples of 7 are:$$7, 14, 21, 28, 35$$ |
| 2. Factor | A number that **divides exactly** into another number without a remainder.It is useful to write factors in pairs | The factors of 18 are:$$1, 2, 3, 6, 9, 18$$The factor pairs of 18 are:$$1, 18$$$$2, 9$$$$3, 6$$ |
| 3. Lowest Common Multiple (LCM) | The **smallest** number that is in the **times tables** of each of the numbers given. | The LCM of 3, 4 and 5 is 60 because it is the smallest number in the 3, 4 and 5 times tables. |
| 4. Highest Common Factor (HCF) | The **biggest** number that **divides exactly** into two or more numbers. | The HCF of 6 and 9 is 3 because it is the biggest number that divides into 6 and 9 exactly. |
| 5. Prime Number | A number with **exactly two factors**.A number that can only be divided by itself and one.The number **1 is not prime**, as it only has one factor, not two. | The first ten prime numbers are:$$2, 3, 5, 7, 11, 13, 17, 19, 23, 29$$ |
| 6. Prime Factor | A factor which is a prime number. | The prime factors of 18 are: $$2, 3$$ |
| 7. Product of Prime Factors | Finding out which **prime numbers multiply** together to make the **original** number.Use a **prime factor tree.**Also known as ‘prime factorisation’. |  |

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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Accuracy**  |
| 1. Place Value | The **value** of where a **digit** is within a number. | In 726, the value of the 2 is 20, as it is in the ‘tens’ column. |
| 2. Place Value Columns | The names of the columns that **determine the value of each digit**.The ‘ones’ column is also known as the ‘units’ column. | Image result for place value columns |
| 3. Rounding | To make a number simpler but keep its value close to what it was.If the **digit to the right** of the rounding digit is **less than 5, round down**. If the **digit to the right** of the rounding digit is **5 or more, round up**. | 74 rounded to the nearest ten is 70, because 74 is closer to 70 than 80.152,879 rounded to the nearest thousand is 153,000.  |
| 4. Decimal Place | The **position** of a digit to the **right of a decimal point**. | In the number 0.372, the 7 is in the second decimal place.0.372 rounded to two decimal places is 0.37, because the 2 tells us to round down.Careful with money - don’t write £27.4, instead write £27.40 |
| 5. Significant Figure | The significant figures of a number are the digits which **carry meaning** (ie. are significant) to the size of the number.The **first significant figure** of a number **cannot be zero**.In a number with a decimal, trailing zeros are not significant. | In the number 0.00821, the first significant figure is the 8.In the number 2.740, the 0 is not a significant figure.0.00821 rounded to 2 significant figures is 0.0082.19357 rounded to 3 significant figures is 19400. We need to include the two zeros at the end to keep the digits in the same place value columns. |
| 6. Truncation | A method of approximating a decimal number by **dropping all decimal places** past a certain point **without rounding**. | 3.14159265… can be truncated to 3.1415 (note that if it had been rounded, it would become 3.1416) |
| 7. Error Interval | A **range of values** that a number could have taken before being rounded or truncated.An error interval is written using inequalities, with a **lower bound** and an **upper bound**.Note that the lower bound inequality can be ‘equal to’, but the upper bound cannot be ‘equal to’. | 0.6 has been rounded to 1 decimal place. The error interval is:$$0.55\leq x<0.65$$The lower bound is 0.55The upper bound is 0.65 |
| 8. Estimate | To find something **close to the correct answer**. | An estimate for the height of a man is 1.8 metres. |
| 9. Approximation | When using approximations to estimate the solution to a calculation, **round each number in the calculation to 1 significant figure**.$≈ $means ‘approximately equal to’ | $$\frac{348+692}{0.526}≈\frac{300+700}{0.5}=2000$$‘Note that dividing by 0.5 is the same as multiplying by 2’ |

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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Basic Number and Decimals**  |
| 1. Integer | A **whole number** that can be positive, negative or zero. | $$-3, 0, 92$$ |
| 2. Decimal | A number with a **decimal point** in it. Can be positive or negative. | $$3.7, 0.94, -24.07$$ |
| 3. Negative Number | A number that is **less than zero**. Can be decimals. | $$-8, -2.5$$ |
| 4. Addition | To find the **total**, or **sum**, of two or more numbers.‘add’, ‘plus’, ‘sum’ | $$3+2+7=12$$ |
| 5. Subtraction | To find the **difference** between two numbers.To find out how many are left when some are taken away.‘minus’, ‘take away’, ‘subtract’ | $$10-3=7$$ |
| 6. Multiplication | Can be thought of as **repeated addition**. ‘multiply’, ‘times’, ‘product’ | $$3×6=6+6+6=18$$ |
| 7. Division | Splitting into equal parts or groups.The process of calculating the **number of times one number is contained within another one**.‘divide’, ‘share’ | $$20÷4=5$$$$\frac{20}{4}=5$$ |
| 8. Remainder | The amount ‘**left over**’ after dividing one integer by another. | The remainder of $20÷6$ is $2$, because 6 divides into 20 exactly 3 times, with 2 left over. |
| 9. BIDMAS | An acronym for the **order** you should do calculations in.BIDMAS stands for **‘Brackets, Indices, Division, Multiplication, Addition and Subtraction’**.Indices are also known as ‘powers’ or ‘orders’.With strings of division and multiplication, or strings of addition and subtraction, and no brackets, work from left to right. | $$6+3×5=21, not 45$$$5^{2}=25$, where the 2 is the index/power.$$12÷4÷2=1.5,not 6$$ |

**Knowledge Organiser**