Knowledge Grid. Mathematics- Year 7

Week From 39-week plan	**Tier 3 Vocabulary with key definitions** **Tier 3 words** are subject-specific, used within a particular field. For example, the language of scientists, mathematicians, historians, and literary critics. For maths, this includes words like 'denominator', while science lessons might require learners to understand 'homeostasis'.	**Substantive Knowledge** The specific, factual concepts needed for the topic or subject. (Detail for each included in lesson resources)	**Common Misconceptions** Any idea that students do not accurately understand when studying this content, concept or subject. (Updated live by teachers when misconceptions occur)
1 2 3	**<u>Sequences</u>** **Sequence-** a list of items in a given order, usually following a rule **Term-** in algebra, a single number or variable, or a number and variable combined by multiplication or division; in sequences, one of the members of a sequence **Term-to-term-** a rule that describes how you get from one term of a sequence to the next **Linear sequence-** a sequence whose terms are increasing or decreasing by a constant difference **Arithmetic sequence-** an alternative name for linear sequence **Non-linear sequence-** A sequence whose terms are not increasing by a constant difference **Ascending-** Increasing in size. Getting bigger. **Descending-** Decreasing in size. Getting smaller. **Geometric sequence-** a sequence is geometric if the value of each successive term is found by multiplying or dividing the previous term by the same number. **Fibonacci sequence-** the next term in a Fibonacci sequence is found by adding the previous two terms together.	How to continue sequences given a variety of forms. How to generate sequences given rules. How to describe sequences. How to identify linear and non-linear sequences. How to draw graphs of sequences. How to find missing terms in sequences.	Students may assume that sequences are always linear Students may assume that sequences always increase Students may misidentify the term to term rule from the first two terms in a sequence. For instance in the sequence 3, 6, 12, 24 they may incorrectly claim that the term to term rule is +3 each time Students spending more time on the more challenging content may assume that geometric sequences always increase faster than linear sequences
4 5	**<u>Understand algebraic notation</u>** **Coefficient-** the number in front of a variable. For instance the coefficient of 4x is 4 **Commutative-** An operation that can be in any order **Evaluate-** Work out the numerical value of **Expression-**A collection of terms involving mathematical operations. It does not contain an equals sign **Function-** A relationship with an input and output **Inverse-** The opposite of a mathematical operation. It reverses the process. **Operation-** A mathematical process such as addition, subtraction, division or multiplication. **Substitute-** To replace letters with numerical values	How to find inputs and outputs of one-step function machines. How to find inputs and outputs of a series of function machines. How to represent expressions in a variety of ways. The meaning of algebraic expressions. How to substitute numbers into algebraic expressions. How to generate sequences given an algebraic rule.	Misunderstanding the meaning of terms such as $3x$. If x= 4 a common mistake is that $3x = 34$. Less common is for students to mistake this notation for addition so that $3x = 3 + x$. Finding the inverse of a two step function machine- students often find the inverse of the second part of the function machine but then neglect to do it for the first. Students must remember that they need the inverse of both parts. Not appreciating how a variable can cahgne between questions. For instance if x = 5 in question 1, in question 3 x can take a different value.

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	Variable- A numerical value that can change. Often denoted by a letter- for instance, x.		Students not appreciating that $\frac{p}{4}$ means p divided by 4 and not making the link that fraction and division are the same thing. Students not understanding the non-commutativity of division and subtraction. $\frac{a}{3} \neq \frac{3}{a}$ Not understanding the difference between p^2 and $2p$. Incorrectly collecting like terms- especially with numbers and a variable. For instance $3x + 2 = 5x$
6 7	**<u>Equality and equivalence</u>** **Coefficient-** a number in front of a variable, for example for 4x the coefficient of x is 4. **Collect like terms-** put like terms in an expression together as a single term. **Equation-** a statement with an equals sign, which states that two expressions are equal in value. **Equivalent-** numbers or expressions that are written differently but are always equal in value. **Expression-** a collection of terms involving mathematical operations. **Fact family- a list of related facts from one calculation.** **Inverse-** the opposite of a mathematical operation; it reverses the process. **Like/unlike-** terms whose variables are the same, for example 7x and 12x. **Solution-** a value you can substitute in place of the unknown in an equation to make it true **Solve-** find a value that makes the equation true **Term-** in algebra, a single number or variable, or a number and variable combined by multiplication or division; in sequences, one of the members of a sequence	How to find the fact family of a mathematical statement. The difference between like and unlike terms. How to identify whether two expressions are equivalent. How to solve one step equations. How to simplify expressions. The difference between equality and equivalence.	Students not understanding that the meaning of the equals sign is 'the same' rather than 'the answer'. Show students as many instances as possible where a single numerical value is not on the RHS of the equals sign. e.g. 8=3+5 21+3=27-2 Not a misconception as such but avoid questions where students can 'spot' the solution to an equation rather than being forced to use a formal written method. E.g. 3+x=8 vs. 2.81+x=18.291 Students not appreciating that $3x$ and $4x^2$ are not like terms. Students not understanding the difference between equality and equivalence. Staff must be careful in their explanations here- remember that substitution with different values does not prove equivalence- it only demonstrates it. Students trying to 'solve' expressions (often rather than simplifying them).
8 9	**<u>Place value and ordering integers and decimals</u>** **Ascending –** Increasing in size **Descending –** Decreasing in size **Estimate –** Give an approximate answer **Inequality –** A symbol comparing values showing which is greater and which is smaller **Integer –** A whole number **Measure of spread -** shows how similar or different a set of values are. **Median -** the middle number in an ordered list. **Power -** This is written as a small number to the right and above the base number, indicating how many times to use the number in a multiplication.	How to read and write integers. How to compare and order integers. How to round integers to any power of 10. Decimal place value. How to round a number to one significant figure. Writing ordinary numbers in standard index form and vice versa.	Representations with diagrams Misunderstanding of the word **Integer** – students aren't sure whether they can be negative as well as positive. An extremely common question across all year groups being "What is an integer?", Students tend to forget which way round 'Greater Than' and 'Less Than' symbols go. When **estimating** – students either 1) find the exact answer or 2) aren't sure what to round numbers to in order to give an approximate answer.

	Range The difference between the greatest value and smallest value in a set of data **Round -** To give an approximate value of a number that is easier to use. **Significant Figures -** The most important digits in a number that give you an idea of its size. **Standard Form –** A number written in the form A x10n where A is at least 1 and less than 10 and n is an integer.		Students think that round to a **significant figure** is like rounding to the nearest 10,100,1000 etc and forget the actual meaning of values being significant and how to round them. Misconceptions also arise around numbers starting with 0 and what the first significant figure is. Students commonly misunderstand meanings of mean, mode, median and range.
10	**<u>FDP Equivalence</u>**	The meaning of tenths and hundredths.	
11	**Fraction -** Number that compares equal parts of a whole. **Convert -** to change from one form to another. **Proportion -** Part of something when compared to a whole. **Percent -** Parts per hundred. **Pie Chart -** Graph in which a circle is divided into sectors that each represent a proportion of the whole. **Sector -** Part of a circle formed by two radii and a fraction of the circumference. **Diagram -** Simplified drawings showing the appearance, structure, or workings of something. **Number Line -** Line on which numbers are marked at intervals. **Equivalent -** Equal in value. **Division -** the process of splitting a number into equal parts. **Improper Fraction -** Fraction in which the numerator is greater than the denominator. **Mixed Number -** Number presented as an integer and a proper fraction.	How to convert between simple fractions decimals and percentages. How to interpret and use basic pie charts. How to link fractions with division. How to work with fractions that are greater than one.	When students draw diagrams to represent their parts of a whole – misconceptions can arise when their "wholes" are different sizes. Converting between FDP when denominators don't easily multiply to make 100 – e.g 2/7 or 14/30 etc. Misconceptions in pie charts arise when drawing the pie charts and completing angles. Students are often unsure how to use a protractor and write incorrect numbers (inside vs outside) - This skill needs to be taught prior to drawing them. Students often struggle to fill in the intervals on number lines (e.g. 0 to 10 on a number line but 11 markers including 0 – students can sometimes do 1÷11 instead of 1÷10 as each interval should be 1/10). Students often forget the process of converting mixed numbers and improper fractions – How many wholes go in and what to do with the remaining parts.
12	**<u>Revision and assessment</u>**		
13	**<u>Solving problems with addition and subtraction</u>**	The relationship between addition and subtraction.	
14	**Associative** - When you add on multiply numbers, it does not matter how they are grouped. **Balance** An amount of money in an account. **Commutative** When an operation can be in any order. **Credit** An amount of money paid into an account. **Debit** An amount of money taken out of an account. **Decimal** A number with digits to the right of the decimal point. **Difference** In arithmetic, the result of subtracting a smaller number from a larger number. **Equation** A statement with an = which states that two expressions are equal in value. **Equivalence** Numbers are expressions that are written differently but are always equal in value. **Estimating** give an approximate answer. **Frequency** the number of times something happens.	How to use the column methods for addition and subtraction. When to use mental methods for addition subtraction. How to solve problems involving perimeter charts and graphs. How to solve problems in financial mathematics. How to solve problems with tables frequency trees and timetables. How to add and subtract numbers in standard form	Students might forget that **addition** is **commutative** (e.g., 4 + 5 = 5 + 4), but **subtraction** is **not** (e.g., 7 - 4 ≠ 4 - 7). They may try to apply the same rules for both. Some students might not fully grasp that addition and subtraction are inverse operations. For example, when trying to solve a problem like 12 + ? = 20, they might not recognize they need to subtract 12 from 20 to find the missing number. Confusion for when to exchange during addition and subtraction written methods

	Inverse the opposite of a mathematical operation; It reverses the process. **Number Line** align in which numbers are marked intervals. **Profit** If you buy something and then sell it for a higher amount, profit = amount received - amount paid. **Significant Figure** most important digits in a number that give you an idea of its size. **Standard Form** A number written in the form A x 10^n where A is at least one and less than 10 and n is an integer. **Sum** the result of an addition **Total** adding two or more numbers.		
15	**Review week**		
16	**Solving problems with multiplication and division**	Working with factors and multiples. How to multiply and divide by powers of 10 and to convert units. How to use formal methods of multiplication and division and deduce new facts from known facts. How to work out the areas of shapes. How to find the mean of a set of data. How to use the order of operations. How to use multiplication and division in complex situations.	
17	**Commutative** When an operation can be in any order. **Divide** to split a number into equal parts **Estimate** give an approximate answer **Factor** a positive integer that divides exactly into another positive integer **Integer** a whole number **Lowest Common Multiple** the smallest number that is a multiple of every one of a set of numbers **Mean** the result of sharing the total of a set of data equally between them **Median** the middle number in an ordered list **Multiple** the result of multiplying a number by a positive integer **Multiply** repeated addition **Parallel** always the same distance apart and never meeting **Parallelogram** a quadrilateral with two pairs of parallel sides **Product** the result of a multiplication **Range** the difference between the greatest value and the smallest value in a set of data **Trapezium** a quadrilateral with one pair of parallel sides **Triangle** a shape with three straight sides		Students often forget that **multiplication** is **commutative** (e.g., 3 × 4 = 4 × 3), but **division** is **not** (e.g., 12 ÷ 4 ≠ 4 ÷ 12). They might incorrectly apply the same rules for both operations, leading to mistakes. Students may have a limited understanding of division, seeing it only as splitting a number into equal parts rather than understanding it as sharing or grouping in different ways. For example, 12 ÷ 3 can be seen as splitting 12 into 3 parts or finding out how many 3s fit into 12. When dividing numbers with remainders, students might not understand how to properly express the remainder. For example, when dividing 13 by 4, they may incorrectly say the answer is 4 instead of expressing it as 4 remainder 1, or as 4.25 in decimal form. Students might fail to fully grasp that **multiplication** is repeated addition. For example, they might see 3 × 4 as just multiplying numbers and forget it means adding 4 three times (4 + 4 + 4 = 12). Word problems involving multiplication and division often lead to confusion, especially if the problem involves a mixture of operations. Students may struggle to interpret the question correctly, and might not know when to multiply or divide based on the context. When multiplying or dividing decimals, students might fail to properly place the decimal point in their answers, especially if they've been working with whole numbers. This can lead to errors in their final answers.
18	**Fractions and percentages of amounts** **Convert** change from one form to another, for example a percentage to a decimal **Decimal** a number with digits to the right of the decimal point **Denominator** the bottom number in a fraction; it shows how many equal parts one whole has been divided into	How to work out a fraction of an amount. How to work out fractions and percentages using a calculator. How to work out the whole given a fraction of an amount.	Bar models need to be carefully drawn to ensure students understand that parts are equal within a given fraction but take on a different size in a separate fraction e.g. one fifth drawn smaller than one quarter. Decimal values within fractions are often discouraged, so students do not understand how to simplify these later in

	Equivalent numbers or expressions that are written differently but are always equal in value **Fraction** a number that compares equal parts of a whole **Numerator** the top number in a fraction that shows the number of parts **Percentage** the number of parts per hundred **Place Value** the numerical value that a digit has by virtue of its position in a number	How to solve problems with fractions greater than one. How to work out a percentage of an amount. How to solve problems with percentages greater than 100%.	their education. Simple examples referring to equivalent fractions should be introduced e.g. 1.7/5.1 = 17/51 = 1/3 Common misconceptions arising when 'finding the whole' can stem from 'multiply the numerator, divide by the denominator' teaching approaches at KS2. Careful reteaching of this, again using bars, should ensure 'reverse' problems here, and later, are understood at greater depth. "Divide by 10 to find 10%" as a 'trick' can lead students to multiple misconceptions, including 'divide by 5 to find 5%' and 'dividing by 10 to find 10%' in 'reverse' problems. Use of a calculator, including decimal multipliers and the percentage button, should be addressed. 24.7%, for example, is often incorrectly entered as 24.7 since this already contains a decimal. Understanding why we use 0.247 here ("percent means 'out of 100'") should be reinforced. Percentage increase/decrease problems should be addressed in context, for example a decrease of 150% is incorrect and should not be asked for.
19	**<u>Operations and equations with directed number</u>** **Directed numbers** - numbers that can be negative or positive. **Ascending-** - a sequence where every term is greater than the previous term. **Decreasing (or descending) sequence** - a sequence where every term is smaller than the previous term. **Difference** - in arithmetic, the result of subtracting a smaller number from a larger number; in sequences, the gap between numbers in a sequence. **Partition**-break up a number into smaller parts **Zero pairs** - for example, +1 and -1 make zero **Commutative** - when an operation can be in any order. **Inverse** - the opposite of a mathematical operation; it reverses the process. **Product** - the result of a multiplication **Substitute** - to replace letters with numerical values **Expression** - a collection of terms involving mathematical operations. **Solve** - find a value that makes an equation true **Equation** - a statement with an equals sign, which states that two expressions are equal in value. **Balance** - an amount of money in an account.	How to represent directed numbers. How to add and subtract with directed numbers. How to multiply and divide with directed numbers. Substitution and solving equations with directed numbers. Squaring and cubing negative numbers.	Students can have a tendency to think that when you add two negative numbers, the result should be positive. When, in reality, adding two negative numbers, you simply add their absolute values and keep the negative sign. Zero can be a tricky concept in operations with directed numbers. Adding zero to any number doesn't change its value. However, subtracting zero also doesn't change the value. A common mistake is treating subtraction of a negative number as just subtracting a smaller number. In fact, subtracting a negative number is the same as adding its positive counterpart. Many students assume that a variable (e.g. x) is just a placeholder for a specific number, rather than recognising it as representing any value in a set of numbers. Sometimes students mistakenly think that terms like 2x and 3x are the same and can be added or subtracted directly. However, only the coefficients of like terms can be combined. So, 2x + 3x = 5x and not just 5. There can be a tendency for students to not follow the order of operations (BIDMAS).

			One of the most frequent mistakes is failing to perform the same operation on both sides of the equation. For example, when you multiply or divide both sides, you must do so with the same number (unless dividing by zero, which is undefined).
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22	**<u>Addition and subtraction of fractions</u>** **Common denominator** - two or more fractions have a common denominator when their denominators are the same. **Denominator** - the bottom number in a fraction; it shows how many equal parts one whole has been divided into. **Numerator**-the top number in a fraction that shows the number of parts **Descending** - decreasing in size. **Ascending** - increasing in size. **Non-unit fraction** - a fraction with a numerator that is not 1. **Unit fraction** - a fraction with a numerator of 1 Universal set-the set containing all relevant elements **Mixed number** - a number presented as an integer and a proper fraction. **Partition**-break up a number into smaller parts **Equivalent** - numbers or expressions that are written differently but are always equal in value. **Multiple** - the result of multiplying a number by a positive integer. **Lowest common multiple (LCM)** - the smallest number that is a multiple of every one of a set of numbers. **Common denominator** - two or more fractions have a common denominator when their denominators are the same. **Commutative** - when an operation can be in any order. **Improper fraction** - a fraction in which the numerator is greater than the denominator (including the special case of a fraction equal to 1). **Substitute** - to replace letters with numerical values **Increasing (or ascending) sequence** - a sequence where every term is greater than the previous term. **Inverse** - the opposite of a mathematical operation; it reverses the process. **Solve** - find a value that makes an equation true	How to convert between mixed numbers and improper fractions. How to add fractions. Understanding and using equivalent fractions. How to subtract fractions. Working with fractions in algebraic contexts	A common misconception is when the denominators are different, many people mistakenly add the fractions as if they were the same. A common mistake is to simply add or subtract the numerators while keeping the denominator the same. For example, with 1/4 + 2/4, people might incorrectly think the result is 3/8, but the correct answer is 3/4 because you only add the numerators (1 + 2) when the denominators are the same. Another issue arises when dealing with improper fractions. If, for example, you add 5/6 + 2/6, you get 7/6, which is an improper fraction. Some may forget to convert this into a mixed number (1 1/6) A lot of people mistakenly think that the LCM of two numbers is simply their product. For example, with 4 and 6, some may think the LCM is 24 (because 4 × 6 = 24), but the LCM is actually 12. This happens because the LCM is the smallest number that both can divide into, and multiplying the numbers together will often give you a higher number than necessary. The inverse of a number is its reciprocal: This is true for real numbers (e.g., the inverse of 2 is 1/2), but this idea doesn't always hold in other mathematical contexts. For instance, in functions, the inverse of a function is the function that "reverses" the action of the original one, not just a reciprocal.

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25	**Revision and assessment**		
26	**Constructing, measuring and using geometric notation** **Acute -** an angle less than 90°.	How to use letters to name angles and sides. How to interpret geometric diagrams.	
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28	**Angle -** an angle is the amount of turn between two lines about their common point (vertex). **Construct** - draw accurately using a ruler and compasses. **Interior angle** - an angle on the inside of a shape. **Kite -** a quadrilateral with two pairs of adjacent sides that are equal in length. **Line segment** - a part of a line that connects two points. **Obtuse angle** - an angle more than 90° but less than 180°. **Parallel** - always the same distance apart and never meeting. **Parallelogram -** a quadrilateral with two pairs of parallel sides. **Perpendicular** - at right angles to. **Polygon** - a closed 2-D shape with straight sides. **Reflex angle** - an angle more than 180° but less than 360°. **Right angle** - an angle of exactly 90°. **Side** - a line segment that joins two vertices in a 2-D shape. **Trapezium** - a quadrilateral with one pair of parallel sides. **Vertex**- a point where two line segments meet.	How to measure and draw angles. How to identify triangles quadrilaterals and other shapes. How to construct triangles and other shapes from given information. How to construct and interpret pie charts	Using a single letter to describe an angle. Using the wrong scale on the protractor. Classifying shapes as regular when all their sides are equal length, not considering angles. Not using the correct mathematical equipment to accurately construct triangles. Using multiple pie charts to compare frequencies rather than proportions.
29	**Develop geometric reasoning**	The sum of angles at a point and a straight line and how to identify vertically opposite angles.	
30	**Alternate angles -** - a pair of angles between a pair of lines on opposite sides of a transversal.		
31	**Angle -** an angle is the amount of turn between two lines about their common point (vertex). **Co-interior angles** - a pair of angles between a pair of lines on the same side of a transversal. **Conjecture**- a statement that might be true that has not yet been proved. **Corresponding angles** - a pair of angles in matching positions compared with a transversal. **Demonstrate** - show how to do something. **Equal** - having the same value. We use the sign = between numbers and calculations that are equal in value, and the sign ≠ when they are not equal. **Interior angle** - an angle on the inside of a shape. **Line segment** - a part of a line that connects two points. **Parallel** - always the same distance apart and never meeting. **Perpendicular** - at right angles to. **Polygon** - a closed 2-D shape with straight sides. **Proof** - an argument that shows that a statement is true. **Regular polygon** - a polygon whose sides are all equal in length and whose angles are all equal in size.	How to find missing angles in triangles. How to find missing angles in quadrilaterals. How to solve complex angle problems. How to find missing angles in polygons. How to find missing angles in parallel lines. How to prove geometrical facts.	Measuring angles which are “not drawn accurately”. 2 angles on a straight line which do not share a common point sum to 180.

	Transversal - a line that crosses at least two other lines. **Vertically opposite angles** - angles opposite each other when two lines cross.		
32	**<u>Developing number sense</u>**	How to use mental strategies for adding and subtracting. How to use mental strategies for multiplication and division. Making connections between decimals and fractions. Estimating answers to check calculations make sense.	
33	**Number line** - a line on which numbers are marked at intervals. **Addition –** the process of calculating the total of two or more amounts. **Subtraction –** the process of finding the difference between two amounts or quantities. **Associative law for addition** - when you add numbers it does not matter how they are grouped. **Commutative** - when an operation can be in any order.		• Students might struggle with the concept of place value, especially when working with larger numbers. For example, they might confuse the value of digits in numbers like 472, where they might not fully understand that the '4' represents 400, not just 4. • Students may not always grasp the idea that numbers are connected in different ways (e.g., that 10 is a multiple of 5 or that 4 is half of 8). They might also struggle with concepts like odd and even numbers or how numbers increase or decrease in a pattern. • When working on number patterns, some students may mistakenly think that the pattern is based on addition when it's actually based on multiplication, or vice versa. They might also struggle with identifying the next number in a sequence if they haven't yet developed an intuitive sense of numbers increasing or decreasing in regular ways. • Students may struggle to understand that numbers can be represented in multiple ways, such as 2 + 3 being the same as 5 or understanding that fractions like 1/2 and 2/4 are equivalent.
34	**<u>Sets and probability</u>**	How to identify and represent sets. Interpreting and creating Venn diagrams. The vocabulary of probability. How to generate simple sample spaces. How to calculate probabilities.	
35	**Probability –** the extent to which an outcome is likely to occur. **Event –** what is happening. **Outcomes –** the possible results of the event that is taking place. **Universal Set –** a set which has elements of all related sets without repetition. **Set-** a collection of objects or numbers. **Element –** any of the objects that belong to a set. **Member –** part of a set. **Inclusive –** includes the data or values in question.		• When dealing with universal sets, students might struggle to correctly identify what is in the universal set and how it relates to subsets. For instance, they might incorrectly believe that the universal set is just the same as one of its subsets, or they might struggle with understanding the intersection of two sets (elements that are common to both sets). • When learning about probability, students might think that if something has a higher probability, it will always happen. For example, they may wrongly assume that because a coin has a 50% chance of landing heads, it will always land heads half of the time in a series of flips, not understanding that probability represents long-term trends, not short-term outcomes. • Students often struggle with complementary events, thinking that the complement of an event is just the opposite (e.g., flipping heads means the complement is tails), without fully grasping the probability of the complement being 1 minus the probability of the event. For example, if the probability of drawing a red card from a deck is 1/2, the complement is 1 - 1/2 = 1/2, which might confuse students when they first encounter it.

			• Students might not fully understand that two events are mutually exclusive if they cannot happen at the same time. For example, in a die roll, getting a 3 and getting a 5 are mutually exclusive, but students might mistakenly assume that they could occur together in a single roll. • When working with sample spaces, students might not list all possible outcomes or they may think that sample spaces are always finite and simple. For example, when drawing two cards from a deck, students may fail to account for the different combinations of cards that could be drawn, leading to incorrect probability calculations. • In some probability problems, students may assume that real-world events always have uniform probabilities (e.g., assuming that drawing a red ball from a bag of mixed colors is equally likely as drawing any other color), without considering how the setup of the situation can affect the probabilities.
36	**Prime numbers and proof**	Identifying and using factors and multiples.	
37	**Multiple** - the result of multiplying a number by a positive integer. **Integer** - a whole number. **Factor** - a positive integer that divides exactly into another positive integer. **Term -** in algebra, a single number or variable, or a number and variable combined by multiplication or division; in sequences, one of the members of a sequence **Divisor** - the number you are dividing by. **Prime Number** - a positive integer with exactly two factors, 1 and itself **Triangular Number** - a positive integer that is the sum of consecutive positive integers starting from 1 **Square Number** - a positive integer that is the result of an integer multiplied by itself **Expression** - a collection of terms involving mathematical operations. **Highest Common Factor (HCF) -** - the greatest number that is a factor of every one of a set of numbers. **Lowest Common Multiple (LCM)** - the smallest number that is a multiple of every one of a set of numbers. **Product** - the result of a multiplication **Union/Intersect** - the set containing all the elements of A or B or both A and B **Conjecture** - a statement that might be true that has not yet been proved. **Proof** - an argument that shows that a statement is true **Counterexample** - an example that disproves a statement.	Recognising prime square and triangular numbers. Writing numbers as a product of its prime factors. Using prime numbers to find lowest common multiple and highest common factors.	• Some students may mistakenly think that 1 is a prime number, or they might confuse prime numbers with composite numbers (numbers with factors other than 1 and itself). • Some students may think that prime numbers are numbers that are odd • When using proof methods (such as in proving something is prime or not), students may think it's enough to provide an example, rather than formally proving the statement. • Some students may mistakenly assume that larger numbers are always composite, failing to recognize that there are large prime numbers. • When using proof by contradiction to prove that a number is prime or not, students may struggle to properly negate the original statement or assume the wrong contradiction. • Students may assume a number is prime simply because they haven't checked all possible divisors.
38	**Review Week**		
39	**Review week**		