Subject curriculum intent:	We want our pupils to be able to develop functional number skills so that they can be as independent as possible in their adulthood. Depending on the cognitive ability of the pupil, our intention is that pupils are able to use and apply their multiplication, division and fraction skills within every day contexts. For example, altering recipes, calculating items needed, solving problems etc We want our pupils to… 1. develop **fluency** in the fundamentals of mathematics so that they are efficient in using and selecting the appropriate strategies to <u>manipulate numbers</u> including mental methods, underpinned by mathematical concepts 2. can **solve problems by** applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios 3. can **reason mathematically** by following a line of enquiry and develop and present a justification, argument or proof using mathematical language. **In all math lessons, teachers plan engaging lessons with the aim that pupils:** • master skills in maths which they are then able to apply to a range of contexts within the school and home context • embed their new skills and understanding to a range of contexts; thus supporting application and progress in learning • acquire core mathematical skills to support their independence as they progress through the school • are able to apply their understanding; supporting them in other areas of the curriculum

End of KS3 intent/outcome	End of KS4 intent/outcome	End of KS5 intent/outcome
Students will be introduced to the key vocabulary around multiplication and division. Students will be taught to group items to match a multiplication sentence and will be taught to share items into groups to develop division skills. Students will be able to use shapes to recognise common fractions including halves and quarters.	Students will continue to build on their learning from KS3. Students will continue to group or share items to match multiplication and division sentences. Students will begin to use arrays to complete multiplication and division calculations. Students will begin to use fractions in practical settings, using their understanding of fractions when baking for the community café of calculating number of products needed using multiplication/division skills.	Students will continue to build on their KS4 knowledge. Students will apply their knowledge of multiplication and division to real life situations. Students will use skills and apply multiplication or division skills when calculating and amending ingredients in a recipe, grouping laundry or items of clothing, portioning food as well as using and applying to money skills when in a shop.

Intent for this topic:	This half term, pupils will develop their understanding of grouping and sharing. Students will be able to group items based on a given multiplication or division number sentence / problem, as well as sharing items between groups to represent division. Students will follow staff modelling to know how to use everyday equipment to show multiplication and division calculations. When learning about fractions, pupils will use and apply shape skills and use these as a visual aid to represent them; both visual fractions and fractions of numbers.

Key vocabulary taught within this topic:	Times tables, equal, unequal, multiplication, share, divide, multiply, groups, 2 times tables, 3 times table, 4 times tables, 5 times tables, 6 times tables, 7 times tables, 8 times tables, 9 times tables, 10 times tables, 11 times tables, 12 times tables, whole, half, quarters, fraction
Links to other subjects:	- Cook-It - PSHCE
Links to equality and diversity	- Sharing equally - Being fair

KS3- Multiplication and Division

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
Subject specific knowledge **What do pupils need to know?**	To know the word 'share' and respond appropriately.	To know words 'share', 'half' and 'equal' To know method 'one for you, one for me' To know sharing needs to be equal and 'fair' To know cutting objects in half need to be in equal pieces To know the word 'double' and connect to repeated addition. To know doubles to the total of 10 and recall confidently	To know the word 'double' and connect to multiplying by 2. To know doubles to the total of 20 and recall confidently To know key words : multiply and divide To know symbols: x and ÷ To know multiplying is linked to repeated addition To know division is linked to sharing	To know times tables 2s and 10s To know what an 'array' is and how to use it.	To know and use multiplication facts for 2,5 and 10 To know the multiplication of 2 numbers can be done in any order To know what a factor and multiple is	To know and recall multiplication and division facts for 3, 4 and 8 To know how to use formal written methods for multiplying 2-digit numbers

| Subject specific skills

What do pupils need to be able to do? | Is able to pass / share objects amongst peers in response to being asked to 'share'

Is beginning to group objects in 2s and 3s | Is able to use vocabulary: share and half in structured and unstructured conversations

Is able to share objects between two people using correct method.

Is able to double quantities to the sum of 10 (first using concrete resources, then jottings and then recall. | Is able to double quantities to the sum of 20 (first using concrete resources, then jottings and then recall.

Is able to represent the multiplication of 2s and 5s using concrete objects

Is able to represent simple multiplication as a number sentence

Is able to represent simple division as a number sentence

Is able to represent division by sharing objects in 2s | Is able to represent the multiplication of 2, 5 and 10 using arrays

Is able to explore number patterns for multiplication (number square etc)

Is able to share any given amount equally using concrete objects

Is beginning to solve one step division and multiplication problems using arrays with support from an adult | Is able to calculate and write multiplication number sentences using x , ÷ and =

Is able to solve contextual multiplication and division problems using a range of resources | Is able to use an array to give creative multiplication or division number sentences for a multiple

Is able to multiply 2-digit numbers by 1-digit numbers using facts they already know

Is able to solve problems involving multiplication and division; including scaling |
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| Suggested teaching activities

How should I teach this? | Have sweets/classroom objects to share during a party/celebration – passing to peers in the room
Share things grown from allotment
Share use of ball suction tube with turn taking | Cut things grown/bought into two

Share food onto set number of plates/people | Share food onto set number of plates/people | Multiplication songs
Arrays
Number square – colouring squares to represent patterns
Share food/things grown between people equally
    Cut food into ¼
Give colours / shape a specific value. Catch in a net and calculate e.g. if green = 2 and 5 were 'caught' = 10 | Arrays
Number square – colouring squares to represent patterns
Share food/things grown between people equally
    Cut food into ¼
Give colours / shape a specific value. Catch in a net and calculate e.g. if green = 2 | |

KS3- Fractions

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
Subject specific knowledge **What do pupils need to know?**	To know cutting an object creates more smaller pieces	To know when two pieces haven't been cut fairly – equally To know where to cut / draw a line to represent 2 equal parts - halves To know key words: half, equal, same and fair.	To know key word: fraction To know representations of ½ via images, resources and words (half)	To know representations of ¼ via images, resources and words (quarter) To know half of even numbers to 10 To know to use 'sharing model' to find ¼ of numbers/objects e.g. 4 plates, share 16 apples.	To know half of numbers to 20 To know representations of 1/3 and 1/8 via images, resources and words (third/ eighths) To know the equivalence of 2/8 and ¼	To know and read all fractions represented as numbers To know key word: denominator To know the denominator represents the number of equal pieces the whole has been split into
Subject specific skills **What do pupils need to be able to do?**	Is able to experience cutting food into pieces	Is able to roughly cut a piece of food in half Is able to say why something hasn't been cut into equal pieces Is able to independently use key words 'equal' and 'fair' in structured and unstructured setting e.g. play	Is able to recognise and name ½ as two EQUAL parts Is able to correctly use the terminology 'Equal pieces" Is able to find ½ of a shape or quantity	Is able to recognise and name ¼ and 1 of 4 equal parts Is able to find ¼ of an object, shape or quantity	Is able to recognise, find, name and write fractions : 1/3, ¼ 2/4 and ¾ of a shape/set of objects Is able to calculate simple fractions of number e.g. ½ of 6 = 3	Is able to count up and down in tenths by dividing an objects into 10 equal parts Is able to recognise and use fractions as numbers Is able to show, using diagrams, equivalent fractions with

					small denominators
					To be able to add and subtractions with the same denominator
					To be able to compare and order fractions with the same denominator
Suggested teaching activities **How should I teach this?**	• Cut up food • Cut up playdough	• Cut up food/playdough • Talk about fair – fair story	• Fair/equal story • Cut shapes into half – could weigh pieces to see if they are roughly equal • Have shapes made out of playdough and cut using knife	• Cut bread into $\frac{1}{4}$ (can be things grown) • Cut playdough into $\frac{1}{4}$ - could weigh pieces to see if they are roughly equal • Connect to position and direction – quarter turns to move around the soft play room	• Place number of pieces into a fraction of a shape e.g fit two $\frac{1}{4}$ pieces into a half block to represent equivalent fractions • Fraction wall • Lego pieces to represent fractions and equivalent fractions • Connect to position and direction – quarter, half, three-quarter turns when moving around soft play area