

Multiplication and Division

Year 3 Contents

Planning grid

Starters

MD3S1	2, 5 and 10 times-tables Identifying numbers that are answers in the 2, 5 and 10 times-tables
MD3S2	The 3 and 4 times-tables Applying knowledge of the 3 and 4 times-tables
MD3S3	Multiplying by 10 and 100 Using knowledge of multiplying by 10 and 100
MD3S4	Dividing by 2, 5 and 10 Choosing three numbers to make a division sentence
MD3S5	Sharing and grouping Using sharing and grouping methods to solve divisions
MD3S6	Doubling Finding and using doubles of integers to 20
MD3S7	Doubling multiples of 5 Identifying which multiples of 5 give specified answers when they are doubled
MD3S8	Using multiplication and division facts Using knowledge of multiplication and division facts to solve number puzzles
MD3S9	Halving Finding halves and using partitioning and doubling methods to check answers
MD3S10	Multiplying multiples of 10 Using knowledge of times-table facts to multiply multiples of 10

Lessons

MD3L1	Order of multiplying Making and describing arrays to reinforce that multiplication can be done in any order
MD3L2	Multiplying by 10 Using place value to multiply by 10
MD3L3	Getting back to the start number Dividing to reverse the effect of multiplying and vice versa
MD3L4	Finding doubles Finding doubles of numbers greater than 10
MD3L5	Multiplying 2-digit numbers Multiplying 2-digit numbers by splitting them into their place value components
MD3L6	Remainders Finding remainders using visual representations and knowledge of times-tables
MD3L7	Rounding after division Deciding whether to round up or down after division

Multiplication and Division

Year 4 Contents

Planning grid

Starters

MD4S1	Doubling and halving numbers to 20 Practising giving doubles of whole numbers to 20 and their corresponding halves
MD4S2	Doubling and halving numbers to 50 Practising giving doubles of whole numbers to 50 and the corresponding halves
MD4S3	Multiplication facts for 2, 3, 4, 5 and 10 Using multiplication facts for 2, 3, 4, 5 and 10, and related division facts, to solve number puzzles
MD4S4	Times-tables, doubles and halves Solving problems using knowledge of multiplication facts, and doubling and halving
MD4S5	Making a product Finding all the multiplications involving pairs of whole numbers that have a product of 24
MD4S6	Remainders and money Using times-tables facts to solve divisions with remainders, and relating remainders to money amounts
MD4S7	Doubling and halving multiples of 10 Solving puzzles by doubling and halving multiples of 10 and applying this to solving problems
MD4S8	Doubling and halving multiples of 100 Solving puzzles by doubling and halving multiples of 100
MD4S9	Multiplying by 9 and 11 Using knowledge of how to multiply by 10 to multiply 2-digit numbers by 9 and 11
MD4S10	Multiplying by 6 Using multiplication facts for 2 and 4 to multiply by 6
MD4S11	Multiplying by 8 Use strategies to multiply by 8, to help develop knowledge of the 8 times-table
MD4S12	Times-tables recall Multiplying pairs of single-digit numbers and deducing answers given one single-digit number in a pair
MD4S13	Finding multiplications Identifying multiplications from given products
MD4S14	Multiplying by partitioning Partitioning the 2-digit number in a $TU \times U$ multiplication to make multiplying easier
MD4S15	Finding and using multiplication facts Deducing multiplication facts for 13 from known facts, and using them to solve divisions with remainders
MD4S16	Informal written method for division Consolidating the informal written method of division that involves subtracting multiples of the divisor

Lessons

MD4L1	Doubling and halving Doubling and halving by partitioning first, and using doubles and halves to multiply and divide
MD4L2	Informal method for multiplication Approximating answers to multiplications and solving them using the grid method
MD4L3	Relationships between operations Identifying and applying relationships between multiplication and division
MD4L4	Dividing money amounts Applying understanding of division and remainders in the context of money
MD4L5	Multiplying by partitioning Partitioning numbers so that multiplications can be solved using known facts

Lessons (continued)

MD4L6	Multiplying using factors Using factors of 2-digit numbers to make multiplying easier
MD4L7	Standard method of written multiplication Developing a standard written method of solving $TU \times U$ from the grid method
MD4L8	Using doubling and halving Reinforcing how partitioning can help with doubling and halving, and solving problems involving doubling and halving
MD4L9	Calculating and checking Solving multiplication and division problems and checking the results using an inverse operation
MD4L10	Rounding up or down after division Using division to solve word problems involving remainders, and rounding up or down depending on the context
MD4L11	Known facts and place value Using times-tables facts to multiply 2-digit numbers by single-digit numbers
MD4L12	Dividing bigger numbers Beginning to use a 'chunking' method to solve divisions
MD4L13	Informal method of written division Using a 'chunking' method to divide, and beginning to record the method systematically

Multiplication and Division

Year 5 Contents

Planning grid

Starters

MD5S1	Doubles of numbers to 100 Practising finding doubles of whole numbers to 100 and the corresponding halves
MD5S2	Using times-tables facts Completing multiplication grids given some heading numbers and some entries
MD5S3	What's the number? Using knowledge of times-tables facts to identify a number from clues
MD5S4	Multiplication grid Identifying missing numbers in fragments of a multiplication grid
MD5S5	Product game Identifying pairs of numbers with a given product
MD5S6	Finding division facts Using knowledge of times-tables to deduce all the possibilities for the missing numbers in a division sentence
MD5S7	Doubles of multiples of 10 to 1000 Practising finding doubles of multiples of 10 to 1000 and the corresponding halves
MD5S8	Divisions with decimal answers Dividing whole numbers by single digits to produce decimal answers, and checking answers using multiplication
MD5S9	Using multiplication by 11 Using multiplying by 11 as an aid to adding a sequence of ten numbers where a number in the sequence is the sum of the two previous numbers
MD5S10	Use doubling and halving Using doubling and halving to change ounces to grams and pounds to ounces
MD5S11	Egyptian multiplication Comparing the Ancient Egyptian method of multiplication (which is based on doubling and partitioning) with other methods
MD5S12	Applying division Using mental division strategies to compare the nutritional information for a chocolate bar with that of a banana
MD5S13	Broken calculator multiplications Using factors to enter multiplications on a calculator whose number 2 key is 'broken'
MD5S14	Broken calculator divisions Using factors to enter divisions on a calculator whose number 2 key is 'broken'
MD5S15	Related facts Using a known multiplication fact to find the answers to related multiplications and divisions mentally
MD5S16	Lattice multiplication Using the lattice method of multiplication, and checking answers using mental strategies
MD5S17	Short multiplication Using missing number column multiplications to review the method of short multiplication

Lessons

MD5L1	Doubling and halving Using doubling and halving to make multiplication easier
MD5L2	Fractions of numbers Finding fractions of numbers by using familiar fractions
MD5L3	Written division Developing an informal written method, using multiples of the divisor, for division of HTU by U
MD5L4	Written division with remainders Developing informal written methods for division of HTU by U with remainders
MD5L5	Rounding after division Solving word problems using division where rounding is required
MD5L6	Using brackets Investigating the use of brackets on calculations
MD5L7	Splitting larger numbers Multiplying 2-digit numbers by single-digit numbers, by splitting the 2-digit numbers into smaller parts
MD5L8	Using factors to multiply Using factors to multiply larger numbers
MD5L9	Using factors to divide Using factors to divide larger numbers
MD5L10	Remainders and fractions Expressing remainders as fractions
MD5L11	Using a calculator Using a calculator to solve word problems involving multiplication and division
MD5L12	Multiplying puzzles Solving puzzles that involve finding products of single-digit numbers, doubling and trebling
MD5L13	Using known facts Using the answer from one calculation to help with another
MD5L14	The grid method of multiplication Developing informal written methods to multiply TU × TU

Multiplication and Division

Year 6 Contents

Planning grid

Starters

MD6S1	Multiplication facts Recalling multiplication facts
MD6S2	Doubling and halving decimals Finding doubles and halves of decimals
MD6S3	Doubling and halving multiples of ten Finding doubles and halves of multiples of 10
MD6S4	Multiplying by teens Using known multiplication facts to find larger multiples
MD6S5	Consolidating mental calculation Practising mental multiplication and division of integers and decimals
MD6S6	Estimating answers to divisions Using knowledge of multiplication facts and/or rounding to estimate the answers to divisions
MD6S7	Missing number multiplications Using times-tables facts to identify the missing numbers in diagrams involving multiplication
MD6S8	Making products Using single-digit numbers to make a target product
MD6S9	Shared products Using known multiplication facts to find products that are common to two numbers
MD6S10	Decimal jumps Multiplying single-digit numbers by decimals, with tenths only
MD6S11	Applying times-tables facts Using times-tables facts to multiply multiples of 10, 100 and 1000
MD6S12	Missing number multiplication grids Identifying missing numbers in multiplication grids
MD6S13	Using known facts to divide Finding missing numbers in division sentences
MD6S14	Making multiplications and divisions Using a given set of numbers to make as many multiplication and division sentences as possible
MD6S15	Multiplying by partitioning Using partitioning to multiply 2-digit numbers by 1-digit numbers
MD6S16	Investigating the sum of products Investigating how to arrange given numbers in a sum of two products to produce the largest and smallest answers
MD6S17	Division facts Recalling, or deriving, division facts

Lessons

MD6L1	Making larger multiples Using known multiplication facts up to 10 × 10 to find multiplication facts for larger numbers
MD6L2	Using doubling and halving Using doubling and halving to multiply larger numbers
MD6L3	Egyptian and Russian multiplication Using methods involving doubling and halving to multiply larger numbers
MD6L4	Splitting numbers Multiplying 2- and 3-digit integers, and 2-digit decimals with one decimal place, by breaking them into manageable parts

Lessons (continued)

MD6L5	Multiplication with decimals Using pencil and paper methods to multiply decimal numbers by breaking them into their place value components
MD6L6	Using multiples with division Developing an informal written method, for division of HTU by TU, that uses multiples of the divisor
MD6L7	Related calculations Using the relationship between multiplication and division to help with calculating
MD6L8	Related calculations with decimals Using the relationship between multiplication and division with decimal numbers
MD6L9	Using factors Using factors to help multiply pairs of 2-digit numbers
MD6L10	Dividing decimals Developing informal written methods to divide numbers with one decimal place by single-digit integers
MD6L11	The grid method of multiplication Developing use of the grid method to multiply ThHTU by U and HTU by TU
MD6L12	Solving real life problems Solving single-step and multi-step problems that involve some multiplication or division
MD6L13	Using the calculator's memory Using the memory function of a calculator to solve multi-step problems that involve some multiplication or division
MD6L14	Division and decimals Using a calculator to solve division problems that involve numbers with up to two decimal places