A Million Numbers : Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To know what each digit represents in five- and six-digit numbers.	Children will identify the value of each digit in five- and six-digit numbers, extending to look at seven-digit numbers. They will partition and decompose numbers to help them identify the value of each digit. They will match numbers written in words to a numerical figure, and practise writing larger numbers in words.	• Can children recognise place value in numbers up to six digits? • Can children recognise place value in numbers above one million? • Can children write numbers in words?	• Slides • Worksheet 1A/1B/1C/1D • Number Cards 1A/1B/1C • Number Sentence Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to order and compare numbers up to a million.	Children will order and compare numbers with up to seven digits using a variety of real-life contexts, including populations of UK towns and cities. They will use the < and > symbols to compare two or more numbers. They will solve a variety of challenges relating to ordering and comparing numbers.	• Can children compare numbers up to a million? • Can children order numbers up to a million? • Could the children use the < and > signs accurately?	• Slides • Worksheet 2A/2B/2C • Dice • Number Cards • Number and Symbol Cards • Challenge Cards (FSD? activity only)
Lesson 3	To be able to round numbers up to a million to a given degree.	Children will learn how to round numbers to the nearest ten, hundred, thousand, ten thousand and hundred thousand. They will learn to round the same number in different ways for numbers with up to six digits.	• Can children round to the nearest thousand? • Can children round to the nearest ten thousand? • Can children round five- and six-digit numbers?	• Slides • Worksheet 3A/3B • Question and Answer Cards • Quiz Template (FSD? activity only)
Lesson 4	To be able to read Roman numerals to 1000.	Children will identify some ways Roman numerals are used today before recapping how the Roman numeral system works. They will learn to read and write increasingly difficult numbers and use their knowledge to solve a variety of problems.	• Can children read Roman numerals to 100? • Can children read Roman numerals to 500? • Can children read Roman numerals to 1000?	• Slides • Worksheet 4A/4B/4C • Roman Numerals sheet • Domino Cards 4A/4B/4C (FSD? activity only)
Lesson 5	To be able to recognise years written in Roman numerals.	Children will recap how to read Roman numerals to a thousand. They will learn to read years as Roman numerals, identifying the birth year of a variety of famous people or the release year of various famous films.	• Can children read Roman numerals to 1000? • Can children explain some ways in which Roman numerals are used today? • Can children recognise years written as Roman numerals?	• Slides • Worksheet 5A/5B/5C • Famous People Cards • Roman Numeral Help Sheet • Film Year Cards 5A/5B (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

What's the Total?: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to add numbers mentally and use rounding to estimate answers.	Children will answer a series of quick-fire addition problems as a warm-up before using mental addition (where possible) to work their way through an addition maze. Children are encouraged to use rounding to estimate totals to help them. They can also use these skills to help them add three numbers together to reach a given total.	• Can children recall addition facts mentally? • Can children use rounding to estimate the answers to addition calculations? • Can children add several numbers together using mental methods?	• Slides • Addition Mazes 1A/1B/1C • Number Cards 1A/1B (FSD? activity only) • Challenge Cards 1A/1B (FSD? activity only) • Bingo Game Cards • Bingo Game Questions sheet
Lesson 2	To be able to add more than two numbers together using the decomposition and expanded methods.	Children will start by identifying missing numbers in number chains that increase in steps of powers of ten. They then go on to recap the decomposition and expanded methods of addition, using these methods to add three numbers together.	• Can children count on in steps of powers of ten? • Can children use the decomposition method to add more then two numbers together? • Can children use the expanded method to add more than two numbers together?	• Slides • Question Card 2A/2B/2C • Worksheet 2A or squared paper • True or False Cards 2A/2B (FSD? activity only)
Lesson 3	To be able to use column addition to add several numbers together.	Children will recognise similarities and differences between the expanded and formal column addition methods before recapping in detail how the formal column addition method works. They will use this method to add two or three numbers together in a variety of contexts.	• Can children describe the similarities and differences between the expanded method and formal column addition? • Can children use column addition to add two or more numbers accurately? • Can children use rounding to estimate and check the answer to a calculation?	• Slides • Challenge Card 3A/3B/3C • Worksheet 3A • Question Sheet 3A/3B (FSD? activity only) • Book Page Cards (FSD? activity only)
Lesson 4	To be able to solve missing number addition problems.	Children will start by adding several numbers (all steps of powers of ten) to a given number mentally. They will then go on to recap how the formal column addition method works before solving missing number problems involving column addition. Children will add two or three numbers together from two-digit to four-digit numbers. They can also investigate how to find all possible calculations when inserting four digits into a missing number calculation.	• Can children explain how the formal column addition method works? • Can children solve calculations accurately using the column addition method? • Can children solve missing number problems using column addition?	• Slides • Worksheet 4A/4B/4C/4D/4E • Challenge Card 4A/4B (FSD? activity only)
Lesson 5	To be able to use column addition to solve addition problems.	Children will use column addition to solve problems involving distance. They will look at a distance chart to find the distances between different UK cities or international airports and use this information to calculate the length of different journeys to several places. Children are encouraged to use rounding to check their answers.	• Can children use the column addition method correctly? • Can children use the column addition method to solve addition problems? • Can children check their answers?	• Slides • Worksheet 5A • Journey Cards 5A/5B/5C • Distance Chart 5A/5B/5C/5D • City Cards (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan **www.planbee.com**

What's the Difference?: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to use mental methods and number lines to find the difference between two numbers.	Children will start off with some simple mental subtraction problems before exploring how counting up on number lines can help work out the difference between two numbers. They are encouraged to use as few jumps as possible to help develop their mental subtraction skills. They can then investigate finding the smallest and largest differences in sets of numbers, or work out the answers to subtraction questions when the answers are represented as symbols.	• Can children answer simple subtraction problems mentally? • Can children find the difference between two numbers using a number line? • Do children understand the link between addition and subtraction?	• Slides • Challenge Card 1A/1B/1C • Match Me Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to solve subtraction problems mentally using increasingly large numbers.	During the teaching input, symbols are used to represent values. After ensuring they understand how the symbols work, they will then go on to use these symbols to subtract amounts mentally in jumps of 1000, 500, 200, 100, 50, 10 and 1. They are encouraged to solve increasingly tricky problems mentally, picturing a number line to help them if necessary. Their independent learning provides further opportunities to develop these skills.	• Do children have a firm understanding of place value in four- and five-digit numbers? • Can children subtract simple multiples of ten, a hundred or a thousand mentally? • Can children subtract larger numbers mentally, including those with digits in more than one place value column?	• Slides • Challenge Cards 2A/2B/2C • Symbol Key • Letter Value Cards (FSD? activity only) • Phrase Cards (FSD? activity only)
Lesson 3	To be able to use the decomposition method to reinforce the formal column method of subtraction.	Children will recap the decomposition method of subtraction, focussing particularly on what happens when we exchange. Problems are represented visually as well as numerically to support this. They then go on to compare and link the decomposition and formal column subtraction methods. During their independent learning, they will further enforce their understanding of exchanging through investigations or written descriptions.	• Can children solve subtraction calculations using the decomposition method? • Can children solve subtraction calculations using the formal column method? • Can children explain the process of exchanging and use it correctly when solving subtraction calculations?	• Slides • Worksheet 3A/3B/3C/3D • Calculation Cards 3A/3B/3C (FSD? activity only) • Challenge Card (FSD? activity only)
Lesson 4	To be able to use the formal column method to solve subtraction problems.	This lesson starts by considering the methods examined in the earlier lessons, discussing which are easiest and most efficient. The slides then go through some real-life subtraction problems which children are encouraged to solve using formal column subtraction involving numbers up to six digits. They will then either use subtraction to find the difference between the areas of different countries or play a game to support their fluency with column subtraction.	• Can children identify different subtraction methods and discuss their effectiveness? • Can children use the formal column method to solve four-digit calculations? • Can children use the formal column method to solve five-digit calculations?	• Slides • Country Area Cards • Worksheet 4A/4B/4C • Game Board 4A/4B (FSD? activity only) • Calculation Cards 4A/4B (FSD? activity only)
Lesson 5	To be able to use formal column subtraction in the context of money.	Children will start by working out how much money is in two wallets by counting the notes and coins. They are then challenged to find the difference between these two amounts using column subtraction. The slides explain how to use decimals within column subtraction and children are given plenty of opportunities to practise this.	• Can children use the formal column subtraction method? • Do children understand how to use formal column subtraction using decimals in the context of money? • Can children check their work for accuracy?	• Slides • Worksheet 5A/5B/5C/5D • Game Board 5A/5B (FSD? activity only) • Instruction Card 5A/5B (FSD? activity only) • Dice and counters (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Measuring Shapes: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to measure and calculate the perimeter of regular and irregular polygons.	Children will identify the perimeters of shapes and objects, then measure the sides of polygons and add them together to find their perimeters.	• Do children understand the term perimeter? • Can children measure regular polygons and calculate the perimeter? • Can children measure and calculate the perimeter of compound shapes?	• Slides • Worksheet 1A/1B/1C • Plain paper • Challenge Cards (FSD? activity only) • Centimetre square paper (FSD? activity only)
Lesson 2	To be able to use the formula for the area of a rectangle to calculate the rectangle's area.	Children will firstly learn how to find the area of rectilinear shapes by counting squares, then learn how to find the area of rectangles using the formula length x width.	• Can children find the area by counting squares? • Can children find the area by using the formula length x width? • Can children find the area of compound shapes?	• Slides • Worksheets 2A/2B/2C/2D • Rulers • Squared paper (FSD? activity only)
Lesson 3	To be able to solve problems involving area and perimeter.	Children will solve problems by finding the area and perimeter of rectilinear shapes. They may also investigate the way in which shapes of with pairs of sides which are factors of the same product will have the same area.	• Can children estimate the area of irregular shapes, explaining their reasoning? • Can children solve real-life problems relating to perimeter and area? • Can children estimate the area of a shape accurately?	• Slides • Worksheets 3A/3B/3C • Challenge Cards • Centimetre-squared paper • Metre sticks (FSD? activity only) • Chalk (FSD? activity only) • Trundle wheels (FSD? activity only)
Lesson 4	To be able to estimate the volume of cuboids.	Children will begin to calculate the volume of cuboids either by constructing cuboids of given dimensions using 1cm³ maths cubes or by visualising the number of 1cm³ cubes required to make a described cuboid.	• Do children know what the term 'volume' means? • Can children make sensible estimates about the volume of a cube or cuboid? • Can children calculate the volume of a cube or cuboid using 1cm3 blocks?	• Slides • Worksheet 4A/4B/4C • 1cm3 blocks • Cuboid Templates (FSD? activity only) • Help Card (FSD? activity only)
Lesson 5	To be able to calculate the volume of a cuboid.	Children will learn to calculate the volume of cuboids using the formula length x width x height. They may then practise this, either by calculating the volumes of cuboids of given dimensions, or by constructing cuboids using nets, then measuring them.	• Do children understand what the term 'volume' means? • Can children estimate the volume of a cuboid? • Can children calculate the volume of a cuboid using the formula length x width x height?	• Slides • Worksheet 5A/5B/5C/5D • Cuboid Net Templates (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Fractions and Proportion : Maths : Year 5 : Autumn Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to identify equivalent fractions, represented visually.	Children will identify exactly what a fraction is before using diagrams and fraction walls to help them identify equivalent fractions. Children will use the < > and = signs to make fraction statements correct.	• Do children know what equivalent fractions are? • Can children identify equivalent fractions that are represented visually? • Can children match pairs of equivalent fractions?	• Slides • Matching Cards • Fraction Sorting Cards 1A/1B • Worksheet 1A • 'Would you rather?' Cards (FSD? activity only) • Fraction Wall (FSD? activity only)
Lesson 2	To be able to recognise and identify equivalent fractions.	Children will start to identify that looking at the relationship between denominators in fractions is useful to help find equivalent fractions. They will learn how to apply the same operation to the numerator as the denominator to identify equivalent fractions without the need for visual representations.	• Can children identify equivalent fractions that are represented visually? • Do children know that to find equivalent fractions you need to multiply the numerator and denominator by the same number? • Can children find pairs of equivalent fractions without visual representations?	• Slides • Worksheet 2A/2B/2C • Fraction Cards (FSD? activity only)
Lesson 3	To be able to convert improper fractions into mixed numbers.	Children will identify what improper and mixed number fractions are before learning how to convert improper fraction to mixed number fractions, and vice versa.	• Can children change simple improper fractions into mixed number fractions? • Can children change more challenging improper fractions into mixed number fractions? • Can children convert mixed number fractions into improper fractions?	• Slides • Worksheet 3A • Domino Cards 3A/3B
Lesson 4	To be able to add and subtract fractions with a common denominator.	Children will learn how to add an d subtract fractions with a common denominator, converting the answer to a mixed number fraction if necessary. They will then move on to adding mixed number fractions, converting to improper fractions to make them easier to add or subtract.	• Can children add fractions with a common denominator? • Can children subtract fractions with a common denominator? • Can children express answers as improper fractions and mixed number fractions?	• Slides • Worksheet 4A/4B/4C • Challenge Cards 4A/4B (FSD? activity only) • Spinner (FSD? activity only)
Lesson 5	To be able to order proper, improper and mixed number fractions.	Children will learn how to order proper, improper and mixed number fractions. They will think about the best way to convert fractions to make them easier to order, and use the <, > and = signs to express the value of fractions.	• Can children order fractions that all have the same denominator? • Can children convert fractions so that they have a common denominator? • Can children use the <, > and = symbols to express the value of fractions?	• Slides • Worksheet 5A/5B/5C • Fraction Wall • True or False Cards 5A/5B (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Methods for Multiplying and Dividing : Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to use short multiplication to multiply two- and three-digits by a single digit.	Children will start by playing a game to encourage recall of known multiplication facts. They will then go on to consider which methods they are already familiar with for solving multiplication problems, before looking in more detail at formal short multiplication, starting with two-digit by one-digit and progressing to three-digit by one-digit calculations as they become more confident.	• Can children recall multiplication facts for tables up to 12x12? • Can children use formal short multiplication to solve two-digit by one-digit calculations? • Can children use formal short multiplication to solve three-digit by one-digit calculations?	• Slides • Worksheet 1A/1B/1C • Dice • Spinners • Secret Code Sheet 1A/1B (FSD? activity only)
Lesson 2	To be able to use short multiplication to solve problems involving up to four-digit by one-digit calculations.	This lesson starts by showing children a completed short multiplication calculation and asking them to check whether it is correct. They will then talk through each step in the process of solving short multiplication calculations, first with three-digit and then with four-digit calculations. There is also the opportunity to solve missing number calculations and tackle some multiplication challenges.	• Can children recall times tables facts accurately for multiplication tables up to 9x9? • Can children use short multiplication accurately to solve calculations with up to four digits? • Can children use their understanding of the short multiplication method to solve problems?	• Slides • Challenge Cards 2A/2B/2C • Number Word Search 2A/2B (FSD? activity only)
Lesson 3	To be able to use the chunking method to solve division problems.	Children will recap the relationship between multiplication and division before looking in detail at the chunking method of division. After solving some division problems using chunking, children will use short multiplication (the inverse) to check that their calculations are correct, and vice versa.	• Can children use known number facts to divide numbers mentally? • Can children use the chunking method correctly to solve division calculations involving numbers up to four digits? • Can children use short multiplication to check chunking calculations, and vice versa?	• Slides • Worksheet 3A • True or False Cards 3A/3B/3C • Challenge Sheet 3A/3B (FSD? activity only)
Lesson 4	To be able to solve multiplication and division problems in context.	Children will consolidate their understanding of the short multiplication and chunking division methods to solve a variety of real-life problems. The slides go through several examples of questions to solve as a class, including key prompt questions to help children identify what they need to do in order to successfully solve word problems. They can then tackle a variety of word problems and challenges independently.	• Can children identify what a word problem is asking them to find out? • Can children take appropriate steps to solve a word problem, including choosing the correct operation? • Can children check that their answer is accurate?	• Slides • Word Problem Sheet 4A/4B/4C • Challenge Cards (FSD? activity only)
Lesson 5	To explore the lattice method of multiplication and compare it to other known methods.	This lesson introduces children to the lattice method of multiplication. Firstly, they are shown a calculation that has been completed using this method and challenges them to use what they notice to explain how the method works. They can then go through some calculations as a class to familiarise themselves with this method. They are encouraged to describe why the method works and not just describe the steps needed to solve each problem, as well as to compare this to other known multiplication methods to assess ease, efficiency and accuracy.	• Can children recall multiplication facts for all times tables up to 9x9? • Do children understand how and why the lattice method of multiplication works? • Can children use the lattice method correctly?	• Slides • Lattice Calculations 5A/5B/5C • Points Cards 5A/5B/5C • Calculation Cards 5A/5B/5C (FSD? activity only) • Challenge Card (FSD? activity only)

Angles and Triangles: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to estimate, draw and measure acute and obtuse angles.	Children will identify whether angles on a line or around a point are either acute, right, obtuse or reflex angles. They will then estimate the sizes of angles in degrees (°), then measure them.	• Can children draw and estimate angles? • Can children recognise acute and obtuse angles? • Can children use a protractor?	• Slides • Worksheet 1A/1B/1C/1D • Angle Cards • Protractors • Sticky notes (FSD? activity only)
Lesson 2	To be able to measure and calculate angles on a straight line and around a point.	Children will learn how many degrees are in a quarter, half, three-quarter and full turn. They will use this information to help them find one or more missing angles on a straight line or around a point.	• Do children know how many degrees there are in a quarter, half, three-quarter and full turn? • Can children use their knowledge of angles to calculate missing angles on a line or around a point? • Can children use a protractor to measure angles on a line or around a point?	• Slides • Worksheet 2A/2B/2C • Protractors • Clock Angles 2 (FSD? activity only) • Blank Clock Faces 2 (FSD? activity only)
Lesson 3	To use knowledge of properties to identify, draw and describe 2-D shapes.	Children will learn in certain properties of 2-D polygons, such as having parallel sides, or having equal opposite/adjacent pairs of inside angles. They will then either draw shapes accurately according to given properties, or sort shapes according to various properties.	• Can children draw shapes from simple properties? • Can children draw shapes from more complex properties? • Can children identify complex shape properties?	• Slides • Challenge Cards 3A/3B/3C • Protractors and rulers • Shape Cards 3A/3B (FSD? activity only) • Clue Cards (FSD? activity only)
Lesson 4	To be able to identify and classify triangles.	Children will explore the special properties of different triangles such as equilateral, isosceles and scalene triangles. They will use maths vocabulary to describe triangles, and sort triangles according to various properties.	• Can children identify the four types of triangles by looking at their properties? • Can children calculate missing angles in triangles? • Can children draw triangles and measure the angles?	• Slides • Worksheet 4A/4B/4C/4D • Protractors
Lesson 5	To identify angles around a point which total 360°.	Children will apply their knowledge of angles and degrees around a point as they undertake an investigation by making rotating patterns using triangles, finding ones which will not overlap when rotated around a point.	• Can children rotate triangles around a point? • Can children find angles around a point which total 360°? • Can children identify patterns and rules about triangles according to their properties?	• Slides • Worksheet 5A/5B/5C • Protractors • Rotating Shapes 5A/5B (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different…?' activity within the lesson plan

Changing Time: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To understand the relationship between different measures of time.	Children will define different measures of time, such as second, minute, hour, day, week and year, and express how they are related to each other. They will use this information to express, e.g. how many hours there are in three days.	• Can children name and define a variety of measures of time? • Do children understand the relationship between various measures of time? • Can children convert between different measures of time?	• Slides • Word Cards • Sentence Cards 1A/1B • Game Instruction Card 1A/1B • Timers • Challenge Card (FSD? activity only)
Lesson 2	To be able to solve problems involving converting units of time.	Children will solve word problems relating to the duration of events. In order to answer accurately, children will need to convert units of time. Problems will include all four operations.	• Can children convert between units of time? • Can children solve problems involving converting between units of time? • Can children use all four operations to solve problems involving converting between units of time?	• Slides • Worksheet 2A/2B/2C • Question Cards 2A/2B/2C • Operations Sheet • Answer Cards (FSD? activity only)
Lesson 3	To be able to solve problems involving the use of clocks.	Children will read analogue and digital clocks accurately, using this skill to help them solve problems relating to the duration of events. They will work out the difference between two times shown on a clock and convert minutes to hours, and vice versa.	• Can children accurately read analogue and digital clocks? • Can children work out the difference between times shown on two clocks? • Can children solve problems involving telling the time and converting units of time?	• Slides • Worksheet 3A/3B/3C • Daily Timetable 3A/3B/3C • Clock Cards 3A/3B (FSD? activity only)
Lesson 4	To be able solve time problems involving timetables.	Children will read timetables shown in 24-hour digital time. They will use the information to answer questions, complete missing information and solve problems relating to the duration of events. Problems are given in the context of the Orient Express.	• Can children read a timetable accurately, including times shown in 24-hour time? • Can children fill in missing information in a timetable? • Can children use a timetable to answer questions?	• Slides • Worksheet 4A/4B/4C • Question Cards 4A/4B (FSD? activity only)
Lesson 5	To be able to solve problems involving converting units of time.	Children will explore the duration of the Apollo Space Missions. They will use the information to convert units of time in order to compare the lengths of the different missions.	• Can children solve problems involving converting days to hours and vice versa? • Can children solve problems involving converting minutes to seconds and vice versa? • Can children use a variety of appropriate methods to solve problems involving time?	• Slides • Worksheet 5A/5B/5C • Apollo Mission Fact Cards

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Squares, Cubes and Factors: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to recognise and use square numbers.	Children will learn what a square number is and how to multiply a number by itself to find its square. Children will recognise square numbers to a hundred and start to calculate squares of larger numbers. They will begin to use square numbers in calculations.	• Do children understand what a square number is? • Can children identify square numbers to 100? • Can children square larger numbers?	• Slides • Worksheet 1A/1B/1C • Sometimes, Always or Never Card (FSD? activity only)
Lesson 2	To be able to identify and use cubed numbers.	Children will recap what square numbers are and match square numbers to their square roots. They will then go on to investigate cubed numbers, using visual representations to support them. They will calculate cubed numbers for cube roots to ten and begin to understanding the term 'to the power of'.	• Do children understand what cubed numbers are? • Can children identify cubed numbers for cube roots to 10? • Can children work out what a number cubed is?	• Slides • Worksheet 2A/2B • Picture Cards • Help Sheet (FSD? activity only) • Bingo Grid sheet (FSD? activity only)
Lesson 3	To be able to find factors of numbers.	Children will recap what factors and multiples are before being challenged to find all the factors pairs for various two-digit numbers. They can solve investigations to further their understanding.	• Do children understand what factors and multiples are? • Can children identify factor pairs? • Can children find all the factor pairs for a given number?	• Slides • Worksheet 3A/3B/3C • Multiplication Grid • Challenge Card 3A/3B (FSD? activity only)
Lesson 4	To know and apply divisibility tests.	Children will recap how to find all the factor pairs of two-digit numbers before using and applying divisibility tests to find factors of three- and four-digit numbers.	• Can children find factors of numbers? • Can children apply divisibility tests to find factors of numbers? • Can children use divisibility tests to find factor pairs?	• Slides • Worksheet 4A/4B/4C 🖐 • Number Cards 4A/4B • Challenge Sheet 4A/4B (FSD? activity only) • Divisibility Tests sheet (FSD? activity only)
Lesson 5	To be able to create equivalent number sentences using knowledge of factors, squares and cubes.	Children will use their understanding of squares, cubes and factors to find equivalent mathematical statements. They will recognise that, e.g. 8 x 16 is the same as $2 \times 4 \times 4^2$, and use this to make many different statements for the same number fact.	• Can children use their knowledge of factors to find equivalences? • Can children use their knowledge of squares and cubes to find equivalences? • Do children understand why finding equivalent statements can be helpful?	• Slides • Worksheet 5A/5B/5C • Statement Cards 5A • Help Sheet • Multiplication Grid • Challenge Cards (FSD? activity only)

Length, Weight and Capacity: Maths : Year 5 : Autumn Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to convert between different units of metric measure.	Children will identify a variety of units of measurement that can be used to measure length, weight and capacity, and identify which of these units would be best for measuring a variety of objects. They will explore the relationship between various units of measurements and be able to convert from one to another, using decimals where necessary.	• Can children identify metric measures and use them in the correct contexts? • Can children convert metric measurements from e.g. metres to centimetres and vice versa? • Can children order measurements?	• Slides • Domino Cards • Worksheet 1A/1B/1C • Measurement Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to order and compare measurements with up to two decimal places.	Children will identify the value of each digit in measurements with up to two places in order to order and compare measurements with up to two decimal places. Children will reinforce their understanding of which different units of measurement are used to express length, weight and capacity. They will also learn how to order and compare measures that are expressed in different units of measurement, such as centimetres and metres.	• Can children identify the value of each digit in measurements with up to two decimal places? • Can children order and compare measurements with one decimal place? • Can children order and compare measurements with two decimal places?	• Slides • Worksheet 2A • Measurement Cards 2A/2B/2C • Length Cards 2A/2B (FSD? activity only) • Weight Cards 2A (FSD? activity only) • Capacity Cards 2A (FSD? activity only)
Lesson 3	To be able to use solve problems involving length and weight.	Children will solve a variety of word problems relating to the length and weight of wild animals. They will start to estimate lengths and weights, using given facts to help them. They will use all four operations to compare and calculate the length and weight of a variety of animals.	• Can children use appropriate units of measure when working with length and weight? • Can children solve problems relating to length and weight? • Can children make sensible estimates relating to length and weight?	• Slides • Worksheet 3A/3B/3C • Animal Fact Cards • Challenge Sheet (FSD? activity only)
Lesson 4	To be able to estimate capacity and measure accurately to check estimates.	Children will estimate the capacity of a variety of containers, using prior understanding to inform their choices. They will then measure capacity accuracy to check their estimates.	• Can the children estimate capacity accurately? • Can they measure accurately in litres? • Can they measure accurately in millilitres?	• Slides • Worksheet 4A/4B/4C • Range of measuring jugs • Range of containers to measure • Water • Digital cameras (FSD? activity only) • Question Cards (FSD? activity only)
Lesson 5	To be able to solve problems involving money and measures.	Children will use their understanding of money and capacity to solve a variety of problems in the context of magic potions. Children will use all four operations to compare measurements and calculate the costs of different amounts of potions, as well as solving scaling problems.	• Can children solve problems involving measurements using all four operations? • Can children convert pounds to pence and vice versa? • Can children solve scaling problems?	• Slides • Challenge Cards 5A/5B/5C • Worksheet 5A/5B (FSD? activity only) • Magic Potions Price List (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Exploring Decimals: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to use decimal notation for tenths and hundredths.	Children will understand the link between tenths and hundredths expressed as both fractions and decimals, and be able to convert from one to the other. They will identify the value of each digit in numbers with two decimal places and put numbers with two decimal places together from their decomposed pieces.	• Can the children use decimal notation for tenths and hundredths? • Do they know the value of each digit? • Can they order decimals to two decimal places?	• Slide • Worksheet 1A/1B/1C • Domino Cards • Game Cards 1A/1B • Decimal Bingo sheet (FSD? activity only) • Decimal Bingo Teacher Sheet (FSD? activity only)
Lesson 2	To be able to order and compare numbers with up to two decimal places.	Children will estimate the place of decimals on a number line to show their value, checking their answers. They will then compare numbers with up to two decimal places, using their understanding of place value to explain their reasoning. They will identify numbers that can go between two decimals on a number line and order sets of numbers with up to two decimal places.	• Can the children use decimal notation for tenths and hundredths? • Do they know the value of each digit? • Can they order decimals to two decimal places?	• Slides • Decimal Cards 2A/2B/2C • Worksheet 2A (FSD? activity only) • Beanbags and trundle wheels (FSD? activity only)
Lesson 3	To be able to round decimals to the nearest whole number.	Children will learn how to round numbers with one or two decimal places to the nearest whole number. They will round decimal numbers to the nearest whole number to add totals together to find approximate answers.	• Can the children round tenths? • Can they round tenths and hundredths? • Can they round decimals accurately in different contexts?	• Slides • Mini whiteboards • Worksheet 3A/3B/3C • Challenge Sheet (FSD? activity only) • Challenge Card A/B/C (FSD? activity only)
Lesson 4	To be able to use and understand decimals in real life contexts.	Children will round amounts of money to the nearest whole pound, adding the rounded numbers together to find approximate totals in real-life contexts. Higher-ability children are challenged to calculate actual totals to compare with their approximate answers.	• Can the children round small money amounts? • Can they round money amounts? • Can they calculate actual money totals?	• Slides • Mini whiteboards • Worksheet 4A/4B/4C/4D • Calculators • Shopping catalogues or access to online catalogues (FSD? activity only)
Lesson 5	To be able to round decimals to the nearest tenth.		• Can children round numbers with up to two decimal places to the nearest whole number? • Can children round numbers with two decimal places to the nearest tenth? • Can children add numbers with one decimal place?	• Slides • Game Board 5A/5B/5C • Number Cards 5A/5B/5C • Counters • Challenge Cards (FSD? activity only) • Challenge Answer Cards (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Calculating Decimals: Maths : Year 5 : Spring Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to add decimals together to create a whole number.	Children will start by recapping the place value of each digit in numbers with two decimal places. They will then consider what they need to add to decimals with one or two decimal places to make a whole number, using diagrams and number lines to help them if necessary. They will also relate this to money, adding amounts to a given total to create amounts, such as £2.00.	• Do children know that fractions and decimals are both ways of expressing part of a whole? • Can children explain what each digit in a number with up to two decimal places represents? • Can children add two decimals together to produce a whole number?	• Slides • Number Cards 1A/1B/1C • Worksheet 1A/1B (FSD? activity only)
Lesson 2	To be able to read, write and compare numbers with up to three decimal places, and relate these to fractions.	Children will be introduced to thousandths, both in decimal and fraction form. They will write fractions as decimals, and vice versa, as well as writing numbers in digits from a written description. They will then start to compare decimals by looking at the place value of each digit.	• Can children recognise the value of each digit in numbers with up to three decimal places? • Can children read and write numbers with up to three decimal places? • Can children compare numbers with up to three decimal places?	• Slides • Worksheet 2A/2B/2C • Instruction Card (FSD? activity only) • Number Cards 2A/2B/2C (FSD? activity only) • Game Board (FSD? activity only) • Counters (FSD? activity only)
Lesson 3	To be able to order and compare decimals with up to three decimal places in real-life contexts.	Children will think about some instances in which decimals are used in real-life situations. They will then focus on the weight of different pets, comparing and ordering the weights up to three decimal places. They will start to use mental strategies to solve problems, such as 'Fluffy weighs 3.26 kg. Rufus is 0.12 kg heavier. How heavy is Rufus?'	• Can children identify some of the ways in which decimals can be used in real-life contexts? • Can children compare numbers with up to three decimal places? • Can children order numbers with up to three decimal places?	• Slides • Worksheet 3A/3B/3C • Animal Cards 3A/3B/3C • Height Cards (FSD? activity only) • Clue Cards (FSD? activity only)
Lesson 4	To be able to add and subtract decimals with up to three decimal places.	Children will explore how they can use column addition and subtraction to add and subtract decimals. They will focus on making sure the place value columns are aligned when numbers are of different lengths (e.g. 3.2 + 4.28). They will use this strategy to solve puzzles and word problems.	• Can children add numbers with up to three decimal places? • Can children subtract numbers with up to three decimal places? • Can children solve problems involving numbers with up to three decimal places?	• Slides • Worksheet 4A/4B/4C • Number Board 4A/4B/4C (FSD? activity only)
Lesson 5	To be able to add and subtract fractions with the same denominator and denominators that are multiples of the same number.	Children will recognise identical calculations that are expressed in both decimals and fractions. They will use this as the basis to start exploring how only the numerator needs to be added or subtracted in calculations. They will start adding and subtracting fractions, converting tenths, hundredths and thousandths to be common denominators where necessary. They will convert fractions to decimals.	• Can children relate numbers with up to three decimal places with their corresponding fractions? • Can children add and subtract fractions with the same denominator? • Can children add and subtract fractions with denominators that are multiples of the same number?	• Slides • Game Board 5A/5B/5C • Calculation Cards 5A/5B/5C • Target Board 5A/5B (FSD? activity only) • Worksheet 5A (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Investigating Shapes: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	Use the properties of rectangles to deduce related facts and find missing lengths and angles.	Children will identify common and distinctive properties of a variety of quadrilaterals and use conventional markings to show pairs of parallel lines. They will then use this information to find missing lengths and angles of rectangles and composite rectilinear shapes.	• Do children know the properties of quadrilaterals, rectangles, squares and oblongs? • Can children identify pairs of parallel lines and use their conventional markings? • Can children find missing lengths and angles of rectangles?	• Slides • Worksheets 1A/1B/1C • Protractors • Rectangles Challenge Rules (FSD? activity only)
Lesson 2	To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Children will look closely at a range of regular and irregular polygons, identifying differences between them. They will then practise measuring angles inside polygons and drawing them accurately. Some children may calculate the inside angles of regular polygons using a formula.	• Do children know all the properties of regular polygons? • Can children use rulers and protractors to measure and check if polygons are regular? • Can children make a variety of different regular polygons accurately?	• Slides • Worksheets 2A/2B/2C • Protractors • Make A Tangram (FSD? activity only)
Lesson 3	To identify, measure and draw diagonal lines.	Children will identify perpendicular and diagonal lines around and inside shapes, then either draw, measure and label shapes or investigate how the angles of certain shapes affect how they may be tessellated.	• Can children explain what perpendicular and diagonal lines are? • Can children measure and draw diagonal lines? • Can children make conjectures about lines formed between sides?	• Slides • Worksheets 3A/3B/3C • Pairs of compasses and protractors • Diagonal Lines Challenge (FSD? activity only)
Lesson 4	To identify 3-D shapes and explore their properties, including those of their 2-D plane surfaces.	Children will identify the plane surfaces of a range of polyhedrons, then identify, draw or make sets of 2-D shapes which, when put together may form a polyhedron.	• Can children identify 3-D shapes, including cubes and cuboids, from 2-D representations? • Can children explain the differences between cubes and cuboids? • Can children visualise and design 3-D shapes?	• Slides • Worksheets 4A/4B/4C • Constructing 3-D Shapes (FSD? activity only) • 3-D construction toys such as K'NEX, Meccano or Polydron (FSD? activity only) • Regular Polyhedrons (FSD? activity only)
Lesson 5	To identify, visualise and design 3-D shapes.	Children will identify the properties of a range of 3-D shapes with curved surfaces. They will then explore how they may be constructed using nets, and how they may be combined to create composite 3-D models.	• Can children describe the properties of shapes with curved surfaces? • Can children compare shapes with curved surfaces to polyhedrons? • Can children combine simple 3-D shapes to make more complex shapes?	• Slides • Worksheets 5A/5B/5C • Cardboard boxes, wooden/plastic 3-D shapes, 3-D construction toys etc. (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Decimals and Fractions: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to match equivalent decimals and fractions.	Children will start by thinking of different ways of expressing the shaded proportion of a shape using fractions and decimals. They will then go on to recap the value of each digit in numbers with three decimal places, and the difference between proper, improper and mixed number fractions. They are then challenged to find equivalents between decimals and fractions in a variety of forms, and how to convert from one to the other.	• Do children understand that fractions and decimals are both ways of expressing proportion? • Can children match fractions with their decimal equivalents? • Can children convert fractions to create equivalent fractions?	• Slides • Worksheet 1A • Proportion Cards 1A/1B/1C • Game Board 1A/1B (FSD? activity only) • Game Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to compare and order fractions whose denominators are all multiples of the same number.	Children will recap the difference between a numerator and a denominator before exploring how they can compare and order fractions whose denominators are all multiples of the same number. The process for converting fractions so that they have a common denominator is then used to help children find as many different equivalents for a fraction as they can.	• Do children know the difference between a numerator and a denominator? • Can children compare fractions whose denominators are all multiples of the same number? • Can children order fractions whose denominators are all multiples of the same number?	• Slides • Worksheet 2A/2B/2C • Fraction Cards 2A/2B (FSD? activity only)
Lesson 3	To be able to add and subtract fractions whose denominators are multiples of the same number.	Building on their learning from the previous lesson, children will explore how they can add and subtract fractions whose denominators are all multiples of the same number. They will convert fractions so that they have a common denominator to make addition and subtraction easier. They will also convert any appropriate answers from an improper to a mixed number fraction.	• Do children understand the difference between a numerator and a denominator? • Can children convert fractions whose denominators are all multiples of the same number so that the denominators are common? • Can children add and subtract fractions with common denominators?	• Slides • Worksheet 3A • Challenge Card 3A/3B/3C • Fraction Chains 3A/3B (FSD? activity only)
Lesson 4	To be able to multiply proper fractions by whole numbers.	Children will find out how they can multiply a proper fraction by a whole number, firstly with the assistance of diagrams, then by converting the whole number to a fraction and multiplying the numerator by the numerator and the denominator by the denominator. They can then convert any answers that are improper fractions into mixed number fractions.	• Can children use diagrams to solve calculations that involve multiplying a fraction by a whole number? • Can children solve calculations that involve multiplying a fraction by a whole number without using a diagram to support them? • Can children convert an improper fraction to a mixed number fraction?	• Slides • Worksheet 4A/4B/4C • Game Cards 4A/4B (FSD? activity only) • Game Board (FSD? activity only)
Lesson 5	To be able to multiply proper and mixed number fractions by whole numbers.	Children will recap how to multiply a proper fraction by a whole number before looking at how they can multiply a mixed number fraction by a whole number. They will do this by converting the mixed number into an improper fraction. With increasingly challenging calculations, children can apply this to real-life problems and recap their learning throughout the week.	• Can children convert between proper, improper and mixed number fractions? • Can children multiply proper fractions by whole numbers? • Can children multiply mixed number fractions by whole numbers?	• Slides • Worksheet 5A/5B/5C • Game Board 5A/5B (FSD? activity only) • Instruction Card (FSD? activity only) • Dice and counters (FSD? activity only) • Plenary Question Sheet

Let's Calculate : Maths : Year 5 : Spring Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to understand and use brackets in calculations involving all four operations.	Children will explore the function of brackets in a calculation and start to solve calculations involving one set of brackets. They will be encouraged to solve such problems mentally wherever possible. They will also read and understand a two-step word problem, expressing the problem as a single calculation involving brackets. They can also explore different ways of writing a calculation where the answer is known.	• Can children multiply, divide, add and subtract numbers mentally? • Do children understand the function of brackets within a calculation? • Can children choose the correct order in which to solve calculations involving brackets?	• Slides • Domino Cards 1A/1B/1C • Challenge Cards 1A/1B (FSD? activity only)
Lesson 2	To understand the function of the equals sign and use this to find multiple ways of solving the same problem.	Children will explore and understand the function of the equals sign in a calculation. They will find multiple ways of solving the same equation, such as $35 \div 5 = 3^2 - 2$ or $35 \div 5 = (40 + 9) \div 7$. They will also solve missing number problems in equations. Children are encouraged to solve calculations using all four operations, brackets and square numbers.	• Do children understand the function of the equals sign within calculations? • Can children find multiple ways of solving the same calculation? • Can children solve missing number problems?	• Slides • Challenge Cards 2A/2B/2C • Calculation Cards (FSD? activity only)
Lesson 3	To be able to solve problems that involve scaling by simple fractions.	Children will start by answering some quick-fire problems involving all four operations, solving the problems mentally wherever possible. They will then go on to solve a variety of problems that involve scaling by simple fractions, e.g. finding half more or a quarter less than a given amount.	• Can children find fractions of numbers? • Can children use mental methods to solve simple problems that involve scaling by simple fractions? • Can children use written methods to solve more challenging problems that involve scaling by simple fractions?	• Slides • Worksheet 3A/3B/3C • Game Board 3A/3B (FSD? activity only) • Game Cards 3A/3B (FSD? activity only) • Instruction Card (FSD? activity only)
Lesson 4	To be able to solve word problems involving all four operations.	Children will start by considering the process they need to follow to successfully solve word problems. They will then be asked to solve a variety of word problems, with the focus being on understanding what the question is asking and choosing the correct operation to solve the problem. There is also the option to solve a variety of problems that will require them to understand the vocabulary associated with all four operations.	• Can children identify what a question is asking them to work out? • Can children choose an appropriate method to solve a word problem? • Can children check their answers for accuracy?	• Slides • Worksheet 4A/4B/4C/4D • Word Problems 4A/4B/4C • Help Card
Lesson 5	To be able to solve multi-step word problems involving all four operations.	Children are challenged to solve a variety of multi-step problems, thinking about how they can express the working out they need to do in a single calculation involving brackets. They will need to choose which operations are needed and check their answers. There are also some challenging number riddles to solve.	• Can children identify what a multi-step word problem is asking them to do? • Can children solve word problems that involve multiple steps? • Can children express their working out as a number sentence?	• Slides • Word Problem Cards (green, orange and blue) • Worksheet 5A/5B/5C • Riddle Cards 5A/5B (FSD? activity only)

Converting Measures: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to use all four operations to solve problems involving measure.	Children will recap the units of measurement your class are already familiar with and reiterate how to convert between different units of measure. They will then be challenged to solve a variety of word problems relating to length, weight and capacity using all four operations, converting answers to a more appropriate unit of measurement if applicable.	• Do children understand the relationship between various units of measurement? • Can children use all four operations to solve problems relating to measure? • Can children convert units of measure?	• Slides • Worksheet 1A/1B/1C • Question Cards 1A/1B (FSD? activity only) • Answer Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to solve problems involving scaling.	Children will solve scaling problems involving measures by converting quantities needed in recipes when the number of people a recipe feeds is adjusted. Children will tackle simple doubling and halving problems as well as more challenging scaling calculations.	• Do children understand what scaling is? • Can children solve problems involving scaling? • Can children convert units of measure?	• Slides • Recipe Cards 2A/2B/2C • Blank Recipe Cards • Tape measures, metre sticks, rulers, trundle wheels, etc. (FSD? activity only)
Lesson 3	To identify and understand imperial units of measure.	Children will identify some common imperial measures for length, weight and capacity, and how they are related to one another (for example, that there are twelve inches in a foot). They then use this information to solve problems involving converting between units of measure.	• Can children identify common imperial measures relating to length, weight and capacity? • Do children understand how various imperial measures are related to each other? • Can children convert from one imperial measure to another, such as from feet to inches?	• Slides • Worksheet 3A/3B/3C • Information Card • Fact Cards (FSD? activity only) • Challenge Card (FSD? activity only)
Lesson 4	To understand and use equivalences between metric and imperial units of measure.	Children are challenged to use conversions between metric and imperial measures relating to length. Using approximate conversions between inches and centimetres, and miles and kilometres, your class will solve a variety of problems.	• Do children understand the difference between imperial and metric measurements? • Can children identify a variety of imperial measurements and relate these to similar metric measurements? • Can children find approximate equivalences between imperial and metric measurements?	• Slides • Worksheet 4A/4B/4C • Access to online maps • Challenge Card (FSD? activity only)
Lesson 5	To understand and use equivalences between metric and imperial units of measure.	Children will use approximate conversions to convert between metric and imperial units of measure for weight and capacity. They will convert recipes with mixed measures into either metric or imperial using approximate equivalences. They can also test approximate equivalences of capacity for themselves as they measure out different amounts of water in both imperial and metric measures.	• Do children understand the difference between imperial and metric measurements? • Can children identify a variety of imperial measurements and relate these to similar metric measurements? • Can children find approximate equivalences between imperial and metric measurements?	• Slides • Worksheet 5A/5B/5C • Information Card • Capacity Cards (FSD? activity only) • Water and measuring jugs (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan **www.planbee.com**

Graphs and Diagrams: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to interpret a reading that lies between two unnumbered divisions on a scale.	Children will learn to interpret readings on unnumbered scales. Arrows will point to a point on a scale, challenging children to work out the value of the point, starting with whole numbers (including negative numbers) and extending to more challenging decimals.	• Can the children interpret a reading on a scale showing simple whole numbers? • Can they interpret more complex numbers on a scale? • Can they interpret negative numbers and decimals on a scale?	• Slides • Mini whiteboards • Worksheet 1A/1B/1C
Lesson 2	To be able to construct and interpret line graphs.	Children will find out what the kind of data that can be presented in line graphs. They will identify the features of line graphs and learn to construct and interpret simple line graphs for themselves.	• Can the children draw a line graph with the vertical scale specified? • Can they draw a line graph without support? • Can they draw and interpret line graphs?	• Slides • Worksheet 2A/2B/2C • Challenge Cards (FSD? activity only) • Access to internet (FSD? activity only)
Lesson 3	To understand where intermediate points on line graphs have and don't have meaning.	Children will recognise line graphs where the intermediate points have meaning and where they do not. They will read and interpret line graphs where there is meaning between points, and consider possible meanings for unlabelled line graphs.	• Do children recognise line graphs where the intermediate points have meaning? • Do children recognise line graphs where the intermediate points do not have meaning? • Can children construct and interpret line graphs?	• Slides • Worksheet 3A/3B/3C/3D • Graph paper • Information Sheet (FSD? activity only)
Lesson 4	To be able to construct and interpret a line graph.	Children will interpret information on a line graph before constructing their own line graphs, making decisions about which scale to use and including all other necessary features. Higher-ability children will start to construct graphs with two sets of data.	• Can the children draw a line graph with the vertical scale specified? • Can they draw a line graph without support? • Can they draw and interpret line graphs?	• Slides • Worksheet 4A/4B/4C • Graph paper
Lesson 5	To draw and compare two or more sets of data on a single line graph.	Children will explore how multiple sets of data can be expressed in charts and graphs. They will then focus on multiple sets of data being represented by line graphs. They will identify the key features of such graphs and have the chance to read, construct and interpret line graphs with multiple data sets independently.	• Can children associate multiple sets of data in a table to that shown in corresponding charts and graphs? • Can children plot two lines on a line graph? • Can children compare multiple data sets on a line graph by asking and answering questions?	• Slides • Worksheet 5A/5B/5C/5D • Spreadsheet software (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different…?' activity within the lesson plan

Subtraction Methods: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to solve missing number subtraction problems.	Children will recap their understanding of the formal written method for subtraction and the steps to carry out this method for subtraction. They use their understanding to identify mistakes in existing working as well as missing numbers in increasingly difficult calculations.	• Can children explain the formal written method of subtraction? • Can children use the formal written method of subtraction? • Are children able to solve missing digit problems for subtraction?	• Slides • Worksheets 1A/1B/1C • Game Sheet (FSD? activity only) • Game Instructions (FSD? activity only)
Lesson 2	To choose suitable mental and written methods for subtraction.	The children have the chance to share and explore several different methods of calculating a subtraction problem by looking at mental and written methods including: compensation, partitioning, formal written method and number line. They have the opportunity to test out each method and make decisions on the suitability of a written or mental method for different problems and how to spot if a problem suits a particular method.	• Can children use mental or formal written methods to solve subtraction problems? • Can children decide which methods are more suitable for a given problem? • Can children use reasoning to explain which method is more suited to a problem?	• Slides • Worksheets 2A/2B/2C • Challenge Cards (FSD? activity only) • Large paper (sugar paper) (FSD? activity only) • Felt tips (FSD? activity only)
Lesson 3	To use the inverse operation to check an answer.	The children will look at the different ways to check their answers, focusing on using the inverse operation. The children become the teacher and mark the answers of another individual's work as well as using their understanding to solve 'I'm thinking of a number...' puzzles.	• Can children identify the inverse operation? • Can children write the inverse calculation? • Can children check answers and correct mistakes?	• Slides • Worksheets 3A/3B/3C • Domino Cards 3A/3B/3C
Lesson 4	To solve problems involving multiple subtrahends.	Following on from the previous lessons, the children explore the different methods for subtracting multiple values from a number. They investigate the efficiency for different methods and use what they find to settle on a preferred method for their independent work.	• Can children use reasoning to explain their method and reasons why they chose it? • Are children able to solve problems involving more than one subtrahend? • Are children able to solve multi-step problems involving subtraction?	• Slides • Worksheets 4A/4B/4C • Subtraction Cards (FSD? activity only) • Number Cards (FSD? activity only)
Lesson 5	To solve addition and subtraction word problems using the bar model representation.	This lesson allows the children to expand their use and understanding of bar models to support them when solving word problems. The children use the bar models to show understanding of what the problem is asking them to do, as well as using the models to show their thought processes when working through the problem.	• Can children represent a word problem with a bar model? • Can children use bar model representations to choose the appropriate function and method to solve the problem? • Can children solve multi-step word problems based on addition and subtraction?	• Slides • Worksheets 5A/5B/5C • Number Chase Cards (FSD? activity only) • Number Chase Answer Sheet (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Solving Multiplication and Division: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To know how to use the short division method	In this first lesson, children are introduced to the formal method of short division. As a class, they will work through several examples where a two-digit number is divided by a one-digit number, moving on to including examples where exchanging is needed and remainders are part of the final answer. In their independent activities, children will practise this skill by solving given number sentences and matching up dividends, divisors and quotients to create correct number sentences. In the alternative activity, they compare the short division method with the chunking method.	• Can children explain how to use the short division method? • Can children divide a two-digit number by a one-digit number using the short division method? • Can children solve number sentences using the short division method that involve exchanging and remainders?	• Slides • Worksheet 1A/1B/1C • Division Cards (FSD? activity only) • Chunking vs Short Division Game (FSD? activity only) • Thought Bubble Cards (FSD? activity only)
Lesson 2	To know how to use the short division method for three-digit numbers divided by one-digit numbers	Children will continue to develop their knowledge and understanding of the short method for division by using numbers with larger dividends. They will learn what to do when a number in the dividend is smaller than the divisor, and understand how to solve number sentences that include a zero. Independently, children will check answers and identify errors in given number sentences. In the FSD? activity, children find missing digits in given short division methods. Each digit corresponds to a letter which will spell out the punchline of a joke.	• Can children divide a three-digit number by a one-digit number using the short division method? • Can they identify and correct errors in given short division methods? • Can children explain their reasoning clearly?	• Slides • Quality Control Card • Worksheet 2A/2B/2C • Robotic Jokes Sheet (FSD? activity only)
Lesson 3	To know how to write and interpret remainders	In this lesson, children will focus on the remainder, and what this figure actually means. They will learn that, when solving word problems, sometimes the remainder needs to be used in the answer, and sometimes it does not. As a class they will look at different word problems and discuss how to interpret the remainder in each one. In their independent activities, children will sort and solve a variety of word problems based on interpretation of the remainder.	• Do children understand what a remainder is? • Can children write a remainder as a fraction or decimal? • Can children interpret remainders in a given context?	• Slides • Card Set A/B/C • Worksheet 2A/2B/2C • Build-a-Bot! Game Board (FSD? activity only) • Question Cards (FSD? activity only) • Instructions Cards (FSD? activity only) • Bot Bits (FSD? activity only) • Bot Body Card (FSD? activity only) • Whiteboards, dice (FSD? activity only)
Lesson 4	To know how to interpret and create scaled drawings	Children will use their knowledge and understanding of multiplication and division to scale up and scale down given measurements of different objects. In their independent activities, children will increase and decrease the size of different robot parts. In the alternative activity, they are challenged to see how many 2D shapes they can measure, then scale up or down to fit on their worksheet.	• Can children use multiplication to scale up given measurements? • Can children use division to scale down given measurements? • Do children know some of the real-life applications of scaled drawings?	• Slides • Worksheet 4A/4B/4C • Robot Card A/B/C • 10mm Squared Paper • Challenge Cards (FSD? activity only) • Challenge Sheet (FSD? activity only)
Lesson 5	To be able to solve problems involving simple rates	In this final lesson, children will learn what a rate is, and how to find the unit rate when comparing two different quantities. As a class, they will use their knowledge and skills of division and multiplication to answer various problems involving rates. Children will continue to apply this skill in their independent activities. In the alternative activity, children compare supermarket offers by finding the unit price of different products, and then working out which is the cheapest shop overall.	• Can children find the unit rate when comparing two quantities? • Can children use the unit rate to work out other rates? • Can children explain their reasoning?	• Slides • Worksheet 5A/5B/5C • Battle of the Bargains! Sheet (FSD? activity only) • Worksheet 5D (FSD? activity only)

Calendars, Timetables and Calculators: Maths : Year 5 : Spring Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to use a calendar to solve problems.	Children will recap their knowlegde of the months of the year and how months are split into weeks and days. They will use calendars to answer simple questions before using both calendars and clocks to solve more challenging problems to help them calculate the duration of events in weeks, days and hours, converting answers where necessary.	• Do children understand what a calendar is and how they are used? • Can children use a calendar to answer questions? • Can children convert measures of time from days to hours?	• Slides • Worksheet 1A/1B/1C/1D • Calendar Sheet
Lesson 2	To be able to calculate lengths of time.	Children will use their knowledge of years, months and days to work out how long famous people lived for. They will use calendars and calculators to support them, taking leap years into account where necessary. They can also calculate how long they have been alive for in years, months, weeks and days.	• Do children understand how passages of time are related to each other? • Can children use their knowledge of years and months to calculate lengths of time? • Can children use a calculator to support their calculations?	• Slides • Famous People Cards • Challenge Cards 2A/2B/2C/2D • Calendar Card • Leap Year Card • Calculators (FSD? activity only)
Lesson 3	To be able to solve problems involving converting between units of time.	Children will find out the scientific meaning of 'day' and 'year' as they explore the length of days and years for other planets in Earth days and years. They will convert units of time and use calculators to check and support their calculations.	• Do children understand the scientific definition of a day and a year? • Can children convert various units of time? • Can children use a calculator to check and support their calculations?	• Slides • Worksheet 3A/3B/3C • Calculators • Planet Data sheet (FSD? activity only) • Question Cards (FSD? activity only)
Lesson 4	To be able to read and interpret information in timetables.	Children will learn to read and interpret timetables accurately in the context of a cinema timetable. They will use a cinema timetable to work out a variety of problems, including film durations, screening times and travel times, converting units of time where necessary. There can also create their own timetables based on a set of given criteria.	• Can children read a timetable accurately? • Can children work out the duration of films from a timetable? • Can children convert units of time to help them solve problems?	• Slides • Worksheet 4A/4B/4C • Cinema Timetable 4A/4B • Challenge Sheet (FSD? activity only)
Lesson 5	To be able to read, complete and interpret information in timetables.	Children will read and interpret bus timetables to answer questions and solve a variety of problems. They will use given facts to fill in missing information on the timetables and use information within timetables to answer questions about the duration of various bus journeys.	• Can children read timetables accurately? • Can children fill in missing information on timetable? • Can children interpret information in timetables?	• Slides • Worksheet 5A/5B/5C • Fact Sheet 5A/5B (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Positive and Negative Numbers: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to multiply and divide any number from 1 to 10,000 by 10 or 100 and understand the effect.	Children will recap the effect of multiplying and dividing numbers by 10 and 100. Children will then apply this to any number between 1 and 10,000 through a variety of differentiated activities.	• Can the children multiply and divide by 10? • Can the children multiply and divide by 100? • Can the children multiply and divide by larger multiples of 10?	• Slides • Worksheet 1A/1B/1C • Operation Cards (FSD? activity only) • Number Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to order positive and negative numbers.	Children will start by counting on and back in tens from a four-digit number. They will then move on to exploring what happens when a larger number is taken away from a smaller number (such as 7 - 12), expressing the answer as a negative number. They will order negative numbers on a number line and start to order positive and negative numbers.	• Can the children order negative and positive numbers on a number line? • Can the children order positive and negative numbers? • Can the children solve calculations involving negative numbers?	• Slides • Worksheet 2A/2B/2C • Calculators (FSD? activity only)
Lesson 3	To be able to use the < and > signs accurately and to order and compare negative numbers.	Children will recap what the < and > symbols mean and use these to compare both positive and negative numbers. They will start by comparing two numbers, then extend to comparing sequences of numbers. They can also play a card game to compare the value or various positive and negative numbers.	• Do children understand what a negative number is? • Can the children use the < and > signs correctly? • Can the children order positive and negative numbers?	• Slides • Worksheet 3A • Number Cards 3A/3B • Symbol Cards • Trounced Playing Cards (FSD? activity only) • Action Cards (FSD? activity only) • Instruction Sheet (FSD? activity only)
Lesson 4	To be able to solve problems involving negative numbers in the context of temperature.	Children will start by counting on and back in steps of 100 from a five-digit number. They will then move on to solving problems involving negative numbers in the context of temperature. Children will use line graphs showing the average low and high temperatures for a variety of worldwide cities, using the information to ask and answer questions.	• Can children use negative numbers in the context of temperature? • Can children find the difference between a positive and negative number? • Can children use line graphs to interpret temperatures?	• Slides • Worksheet 4A/4B/4C🖐 • Graph Sheet • Clue Cards (FSD? activity only) • Graph Cards (FSD? activity only)
Lesson 5	To be able to use negative numbers in the context of money.	Children will start by counting on and back in steps of 1000 from a five-digit number. They will then solve a variety of problems involving negative numbers in the context of overdrafts. Children will work out ending balances from a start figure and amount spent. They can also keep a running track of a balance by adding and taking away different amounts of money.	• Can the children order positive and negative numbers? • Can the children calculate differences involving negative numbers? • Can the children calculate money amounts involving negative numbers?	• Slides • Game Board 5A/5B/5C • Counters and dice • Bank Balance Cards 5A/5B (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan **www.planbee.com**

Mental and Written Addition: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To use formal column methods to solve addition problems.	Children will use formal column addition methods to solve problems. They will work out how much stock shopkeepers have in their store or play an addition target number game. They will be encouraged to use mental methods as well as rounding and estimating to check their answers.	• Can children use formal column addition? • Can children use mental methods to check their answers? • Can children explain their workings out?	• Slides • Worksheet 1A/1B/1C • Game Sheet (FSD...? activity only)
Lesson 2	To solve addition problems using the rounding and adjusting method.	Children will use rounding and adjusting to solve addition problems. They will work out how much stock each department has. They will be encouraged to think about the best method to use when solving problems and to explain their methods.	• Can children use the rounding and adjusting method to solve addition problems? • Can children use alternative methods to check their answers? • Can children explain their methods?	• Slides • Problem Cards • Game Sheet A/B • Shopping Trolley Card A/B • Green Number Cards A/B (FSD...? activity only) • Red Number Cards A/B (FSD...? activity only)
Lesson 3	To use addition to solve problems involving mass.	Children will use addition methods to arrange items of stock on shop shelves, keeping within the weight limit of the shelf. They will need to employ a variety of problem-solving strategies to ensure they keep within the specific requirements of the shopkeepers. The alternative activity involves your class weighing a variety of classroom items and finding their total weight.	• Can children add multiple weights? • Can children choose appropriate methods when adding? • Can children explain their methods and answers?	• Slides • Problem Cards (TI only) • Problem Requirement Cards (TI only) • Aisle Requirement Cards A/B/C • Stock Sheet A/B/C • Stationary Cards (FSD...? activity only) • Worksheet 3A/3B (FSD...? activity only) • Digital weighing scales (FSD...? activity only) • Near Doubles Cards A/B (Plenary only)
Lesson 4	To solve addition problems involving money.	Children will work out how much money has been spent on rebranding the store. They will have the opportunity to use the addition methods they feel are most appropriate to solve each problem, including using estimation to check answers.	• Can children add numbers with decimals? • Do children understand a running total? • Do children understand the sequence of numbers when moving from negative to positive numbers?	• Slides • Worksheet 4A/4B/4C • Stock Sheet (FSD...? activity only) • Budget Cards (FSD...? activity only) • Shop catalogue
Lesson 5	To solve a variety of addition problems.	Children will solve a variety of addition problems involving money. They will be the customers at the shop and work out how much money their shop costs.	• Can children solve addition word problems? • Can children use a variety of methods to solve problems? • Can children explain their workings and check their answers?	• Slides • Product List • Challenge Cards A/B/C • Customer Cards A/B (FSD...? activity only)

Mental and Written Subtraction: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To recap the formal written method for subtraction.	Children revisit the formal written method for subtraction by using it to find the difference in heights between mountains. They have the opportunity to discuss the suitability of the method for different problems and begin to use their knowledge of the method to investigate differences within given criteria.	• Can children use the formal written method from subtraction efficiently and effectively? • Are children able to describe the process of exchanging and why/when it needs to be done? • Are children able to make decisions on when the formal written method is appropriate for a calculation and when a mental method would be more suitable?	• Slides • Worksheet 1A/1B/1C • Mountains Map 1A/1B • Worksheet 1D (FSD? activity only) • Laptops (FSD? activity only) • Maps and atlases (FSD? activity only)
Lesson 2	To subtract numbers with up to three decimal places.	Through the use of the formal written method for subtraction the children will find the differences between distances in the context of world records. They will be faced with problems involving an inconsistent number of decimal places and given the chance to explain how to solve these kind of questions. Alternatively they are given the chance to attempt a world record, giving them the opportunity to develop their accurate measuring skills as well as subtracting decimal numbers.	• Are children able to lay out a column subtraction including numbers with up to three decimal places? • Can children subtract numbers containing a consistent number of decimal places? • Are children able to solve subtraction problems involving numbers with a different number of decimal places?	• Slides • Conversion Card • World Record Cards • Worksheet 2A/2B/2C • Results Sheet • Plain Paper • Large measuring tape/rulers
Lesson 3	To find the difference between positive and negative numbers.	Children explore negative numbers in the context of a timeline where negative numbers are represented as dates before 0 AD. They are challenged to find the difference between a date before 0 AD and one after using a number line with two jumps to cover the difference.	• Can children can define a negative number? • Are children able to describe what happens when you subtract a negative number from a positive number? • Can children calculate a negative number subtracted from a positive number?	• Slides • Positive and Negative Signs • Teacher Cards 3A • Worksheet 3A/3B/3C • Challenge Card 3A • Historical Timeline 3A • Event Cards (FSD? activity only) • String, paperclips, paper strips (FSD? activity only)
Lesson 4	To use the informal partitioned subtraction method.	This lesson introduces a new method to the children using partitioning and negative numbers to subtract. The children must use their existing knowledge of negative numbers and the number line to help them find the difference between two numbers. The children are given time to practise and apply the new method before being asked of the advantages and disadvantages of the method.	• Can children use partitioning to solve a subtraction problem? • Are children able to describe what is happening when you add a negative number? • Can children describe their preferred method, backing up their decision with reasoned explanations?	• Slides • Numbers in Words Card • Worksheet 4A/4B/4C • Budget Card 4A • Budget Card 4B (FSD? activity only)
Lesson 5	To use rounding to check our answers for accuracy.	Children are challenged to use their estimating and rounding knowledge to help them make sensible and practical estimations of numbers. They must estimate a subtrahend for a question with limited information before choosing the most suitable answer from a selection.	• Can children round to the nearest 10, 100, 1,000, 10,000 and nearest whole number? • Can children choose what to round the numbers in a question to, to produce an effective estimate? • Are children able to decide whether their answer is feasible based on their estimate?	• Slides • Rounding Loop Cards • Worksheet 5A/5B • Challenge Card 5A • Check Yourself Sheet A/B (FSD? activity only)

Symmetry, Reflection and Coordinates: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To translate polygons on a coordinate grid.	Children will describe the shapes on a grid according to the coordinates of their vertices, then describe translations of shapes using algebraic terms, e.g. x +12, y-4.	• Can children name the features of coordinate grids? • Do children understand what a translation is? • Can children translate polygons in the first quadrant of a coordinate grid?	• Slides • Worksheets 1A/1B/1C • French elastic (optional) • Translation Flash Cards • Blank Coordinate Grid
Lesson 2	To reflect shapes on a grid.	Children will learn how to reflect shapes horizontally, vertically and diagonally on a grid. They will then practise doing this, reflecting shapes or simple patterns.	• Do children know what a transformation is? • Do children know that reflection is a type of transformation? • Can children reflect shapes across a mirror line?	• Slides • Worksheets 2A/2B/2C • Mirrors, tracing paper • Diagonal Reflection 2A • A range of physical maths resources (FSD? only)
Lesson 3	To find lines of reflective symmetry in shapes.	Children will find lines of symmetry inside shapes, then learn how to reflect shapes where a mirror line is either bisecting, touching or not touching the shape.	• Do children know what a mirror line is? • Can children use mirrors or tracing paper to check or find lines of symmetry? • Can children accurately draw lines of symmetry inside shapes?	• Slides • Worksheets 3A/3B/3C/3D • Lines of Symmetry sheet • Mirrors • Tracing paper
Lesson 4	To find and draw congruent shapes on a grid.	Children will look at several different types of transformation and identify which result in new shapes that are congruent with the original. They will then draw translations of shapes which are congruent with the original.	• Do children know the identical properties of congruent shapes? • Do children understand why some shapes are incongruent? • Can children draw congruent copies of an original shape on a grid?	• Slides • Worksheets 4A/4B/4C • Tracing paper • Congruent Shapes 4A • Congruent Shapes cards
Lesson 5	To explore ways in which some congruent shapes can tessellate.	Children will relate transformation of shapes to tessellation, and make tessellating patterns by rotating, translating or reflecting shapes.	• Do children know what tessellation is? • Do children know that some shapes will tessellate and some will not? • Can children create tessellating patterns by reflecting or rotating shapes?	• Slides • Worksheets 5A/5B/5C/5D • Art software • Thick card/foam, poster paint (FSD? only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

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Factors and Multiples: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to find all factor pairs of a number.	Children will identify what a factor is and learn how to find all the factor pairs for a given number using a methodical process. Children will express factor pairs using arrays, or alternatively 'factor rainbows'.	• Do children know what a factor is? • Can children find factors of numbers? • Can children work methodically to find all factor pairs of a number?	• Slides • Worksheet 1A • Challenge Cards 1A/1B/1C • Factor Rainbows sheet (FSD? activity only)
Lesson 2	To be able to find common factors of two numbers.	Children will learn how to identify common factors of two-digit numbers. They will sort numbers into Venn diagrams to identify common factors in two or more numbers. They can also play a game to identify greatest common factors.	• Do children understand what a common factor is? • Can children identify common factors of two numbers? • Can children identify common factors of three numbers?	• Slides • Worksheet 2A/2B/2C • Multiplication Grid • Game Board 2A/2B (FSD? activity only) • Game Cards 2A/2B (FSD? activity only)
Lesson 3	To be able to solve problems involving factors and multiples.	Children will identify the difference between factors and multiples. They will sort numbers into Carroll diagrams according to various criteria. They will also solve puzzles for which will encourage a greater understanding of the relationship between factors and multiples.	• Can children describe what factors and multiples are? • Can children use their knowledge of factors and multiples to sort numbers? • Can children use their knowledge of factors and multiples to solve problems?	• Slides • Worksheet 3A/3B/3C • Challenge Cards 3A/3B (FSD? activity only)
Lesson 4	To be able to double and halve multiples of 10 to 1000 and multiples of 100 to 10,000.	Children will learn some strategies for doubling and halving multiples of 10 and 100. Children are encouraged to solve calculations mentally wherever possible, using their understanding of factors and multiples to help them.	• Can children double and halve three-digit multiples of ten? • Can children double and halve four-digit multiples of ten? • Can they double and halve multiples of 100 to 10,000?	• Slides • Game Sheet 4A/4B/4C • Spinner 4A/4B/4C • Number Cards 4A/4B (FSD? activity only) • Blank Number Cards (FSD? activity only)
Lesson 5	To be able to multiply by factors of 100.	Children will practise multiplying by factors of 100, namely 25, 50 and 75. Children are taught a variety of strategies to help them do this. They are encouraged to solve problems mentally wherever possible.	• Can the children multiply by 50 by multiplying by 100 and halving? • Can they multiply by 25 by multiplying by 100 and dividing by 4 using jottings? • Can they multiply by 25 by multiplying by 100 and dividing by 4 mentally?	• Slides • Worksheet 5A • Calculation Cards 5A/5B • Multiplication Webs 5A/5B/5C (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Percentage and Proportion: Maths: Year 5: Summer Term, Week 6

PlanBee™

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To recognise percentages, understand what they mean, and compare them to equivalent fractions and decimals.	Firstly children will consider, then define, what percentages are, with reference to percentage statistics. After that they will compare percentages and their fraction equivalents and learn how to convert percentages to decimals using place value knowledge.	• Can children express percentages as fractions? • Can children compare percentages to equivalent fractions and decimals? • Can children express percentages as decimals?	• Slides • Percentage Activity 1A–1D sheets • Percentage Party!!! board game and instructions (FSD…? activity only)
Lesson 2	To use known and derived facts (and ad hoc methods) to calculate percentages and solve percentage problems.	With reference to pie charts and stacked bar charts, children will read and compare percentages. They will then devise and use ad hoc methods for finding percentages of amounts which are exact multiples of 100. Some children may also use ad hoc methods for finding percentages of 50 and 25. After this, children will solve one- and two-step percentage problems.	• Can children read and compare percentages shown using charts and graphs? • Can children devise and explain ad hoc methods for calculating percentages of multiples of 100? • Can children devise and explain ad hoc methods for calculating percentages of common fractions of 100 such as 1⁄2, 1⁄4 and multiples of 1⁄5?	• Slides • Worksheets 2A/2B/2C • Percentage Speed Challenge cards (FSD…? activity only)
Lesson 3	To find and use algorithms for calculating percentages of amounts and converting fractions to percentages.	Children will use doubling, repeated addition or place value knowledge to find percentages of multiples of 100. They will then learn how to use four-cell models to visualise and solve percentage problems, including those where the amounts given must be expressed as a fraction, then converted into a percentage.	• Can children express percentages and proportions of amounts as fractions? • Can children use an algorithm to find percentages of amounts? • Can children use an algorithm to express fractions as percentages?	• Slides • Worksheets 3A/3B/3C **FSD…? activity only:** • Challenge Card 3 • Poster paper and/or presentation software
Lesson 4	To find one per cent of any amount using place value knowledge.	Children will practise finding 1% of multiples of 100, then learn how to find 1% of other amounts (e.g. £150) using place value knowledge. Following this they may either practise finding one per cent of two-, three- and four-digit amounts, or find one per cent more or less of amounts found on everyday objects.	• Can children explain how 1% of 100 is calculated, and how this can help when finding 1% of other amounts? • Can children use place value knowledge to find one per cent of amounts? • Can children correctly identify amounts which are not 1% of a total amount?	• Slides • Worksheets 4A/4B/4C **FSD…? activity only:** • One Per Cent More or Less instructions • Sticky notes
Lesson 5	To use a two-step algorithm to find percentages and fractions of amounts.	Now they know how to find one per cent of an amount, children will consider ways in which they can easily find two, three or four per cent using repeated addition or doubling. They will write and improve instructions for finding percentages. They may then either practise finding small percentages or explore ways in which spreadsheets and coding languages may be used to automatically calculate percentages.	• Can children find one per cent of an amount, including amounts where one per cent is a decimal number with one decimal place? • Can children devise, refine and use a two-step algorithm for finding percentages? • Using their algorithm, can children find two and four per cent of amounts where one per cent is a decimal number with one decimal place?	• Slides • Worksheets 5A/5B/5C **FSD…? activity only:** • Teacher's Notes • Spreadsheet software

NB: 'FSD? activity only' refers to the alternative 'Fancy Something Different…?' activity within the lesson plan

Primes, Squares and Cubes: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To make connections between square numbers and area.	Review the children's understanding of area and its units by making the link between finding the area of squares and rectangle and square numbers. Investigate why we use the units cm^2 and begin to use this knowledge to solve problems involving area and square numbers.	• Are children able to make the link between area and squaring a number? • Can children find the area of a square by squaring the length of the sides? • Are children able to recognise and use the ^{2} notation?	• Slides • Worksheets 1A/1B/1C • Squared paper • Challenge Card 1A (FSD? activity only)
Lesson 2	To make connections between ^{3} and finding the volume of a cube.	Begin to use cube numbers in context when making the link between volume and cube numbers. Revisit the formula of length x width x depth and begin to use this in problems involving volume and cube numbers.	• Can children describe what the ^{3} notation means? • Are children able to make the link between finding the volume of a cube and ^{3} a number? • Can children use their understanding of volume and cube numbers in a problem solving calculation?	• Slides • Worksheet 2A/2B/2C • Gift Box Sizing Guide • Worksheet 2C/2D (FSD? activity only)
Lesson 3	To investigate and identify prime numbers.	Investigate the factors of numbers and use this to pick out numbers with only two factors. Use this criterion to define prime numbers and composite numbers. Using this understanding the children launch into investigating and identifying prime numbers to 120 using methods such as Eratosthenes' sieve.	• Can children describe what a prime number is? • Are children able to use the vocabulary 'prime' and 'composite' with confidence? • Are children able to identify the prime numbers between 1 and 20?	• Slides • Worksheet 3A/3B/3C • Multiplication Grid • Challenge Card 3A
Lesson 4	To identify the prime factors of a number.	Leading on from the previous lesson, the children use their knowledge of prime numbers to find the prime factors of the numbers 2–50. Whilst using factor trees to identify prime factors, the children can consolidate their understanding of square and cube numbers and their notations by writing the multiplication sentences of each number's prime factors.	• Can children describe what a prime factor is? • Are children able to complete a factor tree for a given number? • Can children identify the prime factors of a number?	• Slides • Worksheet 4A/4B/4C • Prime Factor Cards (FSD? activity only) • Teacher Cards (FSD? activity only)
Lesson 5	To solve problems involving square, cube and prime numbers.	Children practise the use of square and cube numbers in number sentences before becoming number detectives. They must identify a number based on clues including prime, square and cube numbers. Some clues may be useless and the children must identify the unhelpful information.	• Can children define the key vocabulary of square, cube, prime and composite numbers? • Can children identify square, cube, prime and composite numbers? • Can children solve problems involving square, cube, prime and composite numbers?	• Slides • Worksheet 5A/5B/5C • Hundred Squares • Points Card 5A (FSD? activity only) • Calculation Cards 5A/5B/5C (FSD? activity only) • Help Sheet 5A

NB: 'FSD? activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Formal Multiplication: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To use the grid method of multiplication to solve multiplication problems.	Children will recap how to use the grid method to solve multiplication calculations, starting with simple calculations and moving on to solve three-digit by two-digit and four-digit by two-digit calculations. They have some 'sometimes, always or never' statements and target numbers to investigate. They will also think about how they can work out what the question is when they are given a completed grid using their knowledge of multiplication facts.	• Can children find the answer to two-digit by one-digit multiplications using the grid method? • Can children find the answer to two-digit by two-digit multiplications using the grid method? • Can children find the answer to three-digit by two-digit multiplications using the grid method?	• Slides • Worksheet 1A • Sometimes, Always, Never Cards 1A/1B/1C • Question Cards (FSD? activity only) • Digit Cards (FSD? activity only) • Calculators
Lesson 2	To use the expanded standard method to solve multiplication problems.	Children will compare the expanded and grid methods to identify similarities and differences. They will learn how to use the expanded method to multiply two-, three- and four-digit numbers by a single digit. They can solve missing number problems by filling in the gaps in expanded method calculations.	• Can children answer two-digit by one-digit multiplication questions using the expanded standard method? • Can children answer three-digit by one-digit multiplication questions using the expanded standard method? • Can children answer four-digit by one-digit multiplication questions using the expanded standard method?	• Slides • Worksheet 2A/2B/2C • Calculation Cards A/B (FSD? activity only)
Lesson 3	To use the formal short multiplication method to solve multiplication problems.	Children will compare the expanded method and formal short multiplication method to identify similarities and differences. They will recap how the short multiplication method works and use short multiplication to multiply two-, three- and four-digit numbers by a single digit, including to solve word problems.	• Can children use the formal short multiplication method to solve two-digit by one-digit calculations? • Can children use the formal short multiplication method to solve three-digit by one-digit calculations? • Can children use the formal short multiplication method to solve four-digit by one-digit calculations?	• Slides • Worksheet 3A/3B/3C • Domino Cards 3A/3B (FSD? activity only) • Blank Dominos (FSD? activity only)
Lesson 4	To use the formal long multiplication method to solve multiplication problems.	Children will learn how to use the formal method of long multiplication. They will be taken through each step of the process, building on their understanding of the short multiplication method to help them.	• Can children use the formal long multiplication method to solve two-digit by two-digit calculations? • Can children use the formal long multiplication method to solve three-digit by two-digit calculations? • Can children use the formal long multiplication method to solve four-digit by two-digit calculations?	• Slides • Worksheet 4A/4B/4C • Calculation Cards 4A/4B/4C (FSD? activity only) • Dice (FSD? activity only)
Lesson 5	To be able to use formal multiplication methods to solve problems.	Children will recap how to use long multiplication then recap which other methods they have used throughout the week to solve multiplication problems. They will choose an appropriate method to solve a variety of word problems and investigations.	• Can children use a variety of formal multiplication methods? • Can children choose a method appropriate to the problem? • Can children solve multiplication problems using a formal method?	• Slides • Worksheet 5A/5B/5C • Price Sheet 5A/5B • Challenge Cards 5A/5B (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan

Short Division: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to multiply and divide numbers mentally drawing on known facts.	Children will start by identifying errors in simple calculations, then go on to practise solving calculations mentally using known multiplication and division facts, including multiplying and dividing by powers of ten, and multiplying by nine, eleven, etc. Children are encouraged to recall known facts quickly through a variety of games and activities.	• Can children multiply numbers mentally drawing on known facts? • Can children divide numbers mentally drawing on known facts? • Can children use appropriate jottings and written methods when a calculation can't be solved mentally?	• Slides • Calculation Chains sheet • Game Board 1A/1B/1C • Dice and counters • Top Trump Cards 1A/1B (FSD? activity only) • Spinner (FSD? activity only)
Lesson 2	To be able to use the formal written method of short division.	Children will start by comparing the chunking and short division methods before recapping how short division works. They will do several calculations together as a class, checking each one with the chunking method. They can then practise short division independently but through a group activity, or solve missing number problems.	• Can children format a short division question correctly? • Can children solve division problems using the short division method? • Can children check their calculations using other division and multiplication methods?	• Slides • Calculation Cards 2A/2B/2C • Points Cards • Missing Number Challenge 2A/2B/2C (FSD? activity only)
Lesson 3	To be able to solve problems using the short division method.	Children will work through a variety of word problems that involve short division (although some other operations are included to ensure children are reading and understanding the questions). They will think about the steps they need to take to solve the problem, and check their calculations. They can then either solve word problem crosswords or carry out a short division challenge.	• Can children use the short division method correctly? • Can children interpret word problems and identify what they need to do to solve them? • Can children check their answers using appropriate methods?	• Slides • Worksheet 3A/3B/3C • Challenge Checklist 3A/3B/3C (FSD? activity only) • Divisibility Rules Card (FSD? activity only)
Lesson 4	To be able to solve problems involving scaling by simple fractions.	Children will start with some quick-fire division questions that involve remainders as a warm-up. They will then go on to solve problems that involve scaling by simple fractions, using short division to find the answers. Bar modelling is used to help children visualise the problems. During their independent work, they will solve a variety of multi-step problems using scaling.	• Do children understand the link between fractions and division? • Can children use short division to solve problems that involve scaling by simple fractions? • Can children check their answers using an appropriate method?	• Slides • Challenge Cards 4A/4B/4C • Celebrity Height Cards (FSD? activity only) • Character Cards (FSD? activity only)
Lesson 5	To be able to solve a variety of multi-step problems.	Children will recap the steps they need to take in order to successfully solve word problems. They will then tackle a variety of multi-step problems that involve addition, subtraction, multiplication and division. Children will need to choose an appropriate operation and method for each step of the problem, as well as thinking about how they can check their answer is correct.	• Can children identify what multi-step problems are asking them to find out? • Can children choose an appropriate written method for solving calculations, including short division? • Can children check their calculations for accuracy?	• Slides • Calculation Cards 5A/5B/5C • Picture Puzzle 5A/5B cards (FSD? activity only) • Picture Puzzle Images (FSD? activity only) • Picture Puzzle 5A/5B Answer Boards (FSD? activity only)

NB: 'FSD? Activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan **www.planbee.com**

Describing Data: Maths : Year 5 : Summer Term

PlanBee

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To interpret information in tables.	In this lesson the children will use their knowledge of interpreting data to identify desired information from tables and use the existing information to fill in missing data where needed. They will need to think carefully about which information is useful or irrelevant before using it to answer questions. There is an alternative opportunity for them to use the information from tables to create a top trump game based on their chosen categories.	• Can the children input data into a table? • Can children interpret statistics from a table? • Are children able to interpret multiple statistics from a table?	• Slides • Worksheets 1A/1B/1C • Information Table 1A/1B • Card Template 1A • Prediction Cards 1A
Lesson 2	To solve comparison, sum and difference problems using information presented in a line graph.	Children use their understanding of line graphs to interpret and question the information that the graph is presenting. They must use their own interpretation skills to create questions about selected graphs as well as predicting future data and drawing overall conclusions about the information they are presented with.	• Can children interpret face-value information from data displayed in a line graph? • Are children able to answer sum/difference information about data displaying in a line graph? • Are children able to identify the purpose of a graph?	• Slides • Flashcard Template 2A • Worksheet 2A/2B/2C • Line Graphs 2A • Line Graphs 2B (FSD? activity only) • Fact Cards 2A (FSD? activity only)
Lesson 3	To tell the story of a line graph.	This lesson challenges the children to look at line graphs from a different angle and see the graphs as telling a story over time. Using minimal information they must think about what the line's angle and steepness is telling them about the data and use their imaginations to think of stories to match a given line graph.	• Do children understand that line graphs usually display a change in a variable over a length of time? • Are children able to hypothesise a what has happened to create the data on a line graph? • Can children use a line graph to (approximately) display a change in a variable over time?	• Slides • Teacher Card 3A • Worksheet 3A/3B/3C • Worksheet 3D/3E (FSD? activity only)
Lesson 4	To decide the best ways to present data.	The children will make decisions about the best ways in which to present data based on the types and contexts of the data they are given. This lesson gives the children the opportunity to think about the purpose for their graph or chart. They must decide on the clearest presentations of the data and draw a chart or graph accordingly.	• Can children describe the difference between discrete and continuous data? • Are children able to choose a suitable graph to display a set of data? • Can children use reasoning to explain why a type of graph is more suited to a set of data?	• Slides • Worksheet 4A/4B/4C • Graph Paper 4A • Graph Hints and Tips Sheet 4A • Challenge Card 4A (FSD? activity only) • Colouring pens/pencils (FSD? activity only)
Lesson 5	To investigate how graphs can be misleading.	This lesson encourages the children to investigate the scales and layouts of a graph to see how the data can be presented differently and often in misleading ways. They are challenged to look conscientiously at graphs to spot how they have been manipulated and what effect this has on the data shown.	• Can children name one way a graph could be made to be misleading? • Can children identify a misleading graph? • Can children describe the effects of a misleading graph?	• Slides • Worksheet 5A/5B/5C • Graph Cards 5A • Graph Paper 5A • Challenge Card 5A • Challenge Card 5B (FSD? activity)

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