



YEAR 6 MATHS MEDIUM TERM PLAN

Small Steps to Mastery

Year 6 Long Term Plan

Year 6 NUMBER – PLACE VALUE (INCLUDING DECIMALS)

Pupil end points for this unit of work: (Year 6 statutory requirements)

- read, write, order and compare numbers up to 10,000,000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across 0
- solve number and practical problems that involve all of the above
- identify the value of each digit in numbers given to 3 decimal places
- multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places

SMALL STEPS IN KNOWLEDGE – PLACE VALUE / DECIMALS

VOCABULARY

Number - number, numeral, zero, one, two, three ... twenty, teens numbers, eleven, twelve ... twenty twenty-one, twenty-two ... one hundred, two hundred ... one thousand, ten thousand, hundred thousand, million, none, how many ...? count, count (up) to, count on (from, to), count back (from, to), forwards, backwards, count in ones, twos, fives, tens, threes, fours, eights, fifties, sixes, sevens, nines, twenty fives, and to so on to hundreds, equal to, equivalent to, is the same as, more, less, most, least, tally, many, odd, even, multiple of, factor of, factor pair, sequence continue predict, few, pattern, pair, rule, relationship, next, consecutive, $>$ greater than, $<$ less than, $\geq$ greater than or equal to $\leq$ less than or equal to, Roman numerals, integer, positive, negative, below, zero, minus, negative numbers, formula, divisibility, square number, prime number, **factorise**, **prime number**, ascending/descending order, digit, total

Place Value - ones, tens, hundreds digit, one-, two- or three-digit number place, place value, stands for, represents exchange, the same number as, as many as more, larger, bigger, greater, fewer, smaller, less, fewest, smallest, least, most, biggest, largest, greatest, one more, ten more, one hundred more, one thousand more, one less, ten less, one hundred less, one thousand less, equal to, compare, order, size, first, second, third... twentieth, twenty-first, twenty-second ... last, last but one, before, after, next, between, half-way between, above, below

Estimating - guess, how many ...? estimate, nearly, roughly, close to, approximate, approximately, about the same as, just over, just under, exact, exactly, too many, too few, enough, not enough, round, nearest, nearest 10, nearest 100, nearest 1,000, nearest 10,000, round up, round down

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit

- Read and write numbers to 10,000 inc. value of digits (Recap)
- Read and write numbers to 100,000 inc. value of digits (Recap)
- Read and write numbers to a million inc. value of digits (Recap)
 - Read and write numbers to 10 million inc. value of digits
 - Powers of 10 more and less than numbers
 - Number line to 10,000,000
 - Part-whole model and place value grids
- Compare numbers to 10,000,000 inc. part-whole models and place value grids
- Order numbers to 10,000,000 inc. part-whole models and place value grids

<https://nrich.maths.org/13270> - space distances

Round any whole number to a required degree of accuracy

- Round to 10, 100 and 1,000 (Recap)
- Round to 10,000 and 100,000 (Recap)
 - Round numbers over a million

Round the Three Dice *

Solve number and practical problems that involve all of the above

<https://nrich.maths.org/6554> - Coded Hundred Square

<https://nrich.maths.org/71> - Sometimes We Lose Things

Round the Four Dice *

Number Lines in

Disguise **

<https://nrich.maths.org/5898> - Tug Harder

First Connect Three (I) *

Decimals

Identify the value of each digit in numbers given to 3 decimal places

- Place value in decimals with up to 2dp inc. place value grid, part-whole models
 - Understand thousandths inc. place value grid, part-whole models
 - Place value with up to 3dp inc. place value grid, part-whole models

<https://nrich.maths.org/10587> - Greater Than or Less Than

[Interactive Teaching Programs 3 | STEM](#)

<https://nrich.maths.org/10326> - Spiralling Decimals

Spring Term

Use negative numbers in context, and calculate intervals across 0

Year 6 NUMBER – FOUR OPERATIONS

Pupil end points for this unit of work: (Year 6 statutory requirements)

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the 4 operations
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- solve problems involving addition, subtraction, multiplication and division
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

SMALL STEPS IN KNOWLEDGE – FOUR OPERATIONS

VOCABULARY

Addition and Subtraction - addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more, ten more, one hundred more, how many more to make ...? how many more is ... than ...? how much more is ...? subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less, one hundred less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, tens boundary, hundred boundary, ones boundary, tenths boundary, missing number, inverse

Multiplication and Division - multiplication, multiply, multiplied by, multiple, factor, groups of, times, product, once, twice, three times ... ten times repeated addition, division, dividing, divide, divided by, divided into, grouping, sharing, share, share equally left, left over, remainder, one each, two each, three each ... ten each group in pairs, threes ... tens, equal groups of doubling halving, array, row, column number patterns multiplication table, multiplication fact, division fact, inverse, square, squared, cube, cubed

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

NCETM Spine Materials for Small Step Progression in the Four Operations / Intervention

Suggestions

Addition / Subtraction

- Recap column addition (more than 4-digits)
- Recap column subtraction (more than 4-digits)
- Column addition and subtraction with up to 6-digits inc. different numbers of digits
- Column addition and subtraction with decimals up to 6-digits inc. different numbers of digits

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Solve problems involving addition and subtraction

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

- Multiply 4-digits by 1-digit (Recap)
- Multiply numbers with more than 4-digits using short multiplication

- Short multiplication with decimals
- Multiply 2-digits by 2-digits (Recap)
- Multiply 3-digits by 2-digits (Recap)
 - Multiply 4-digits by 2-digits

<https://nrich.maths.org/9326>

Divide numbers up to 4 digits by a one-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

- Divide 4-digits by 1-digit (Recap)
- Divide more than 4-digits using short division
 - Divide decimal numbers
- Interpret remainders and give as fraction, decimal and round

Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

- Factor division / short division
- 4-digits by 2-digits long division
- Explore remainders in different contexts

So It's Times! ***

Use their knowledge of the order of operations to carry out calculations involving the 4 operations

Solve problems involving addition, subtraction, multiplication and division

Always, Sometimes or Never? Number (I) *

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Four Go (G) **

Perform mental calculations, including with mixed operations and large numbers

- Multiply three numbers together (Recap)
- Know multiplication tables facts to 12×12 and derived facts – inc. Human Calculator multiples of 10 and decimals facts
 - Order of operations inc. BIDMAS
 - Applying understanding of properties of numbers to problems
 - Mental calculations and estimation with increasingly large numbers
 - Reason from known facts

<https://nrich.maths.org/1134> - Multiplication Square

Multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places

- Multiply and divide by 10
- Multiply and divide by 100
- Multiply and divide by 1,000
- Whole numbers and decimal

<https://nrich.maths.org/5632> - Route Product

<https://nrich.maths.org/10421> - Multiply Multiples 1

Identify common factors, common multiples and prime numbers

- Factors (Recap)
- Common factors
- Multiples and Common multiples
 - Primes to 100
 - Squares and cubes
 - Rules of divisibility
- Problems with the above

<https://nrich.maths.org/factorsandmultiples> - Factors and Multiples game

<https://nrich.maths.org/100>

[5](#) - Zio and Zepts

<https://nrich.maths.org/101>

[4](#) - Flashing Lights

<https://nrich.maths.org/106>

[6](#) - Moons of Vuvv

Round and Round the

Circle **

Mystery Matrix **

Factor Lines (I) **

Factor-multiple Chains **

Counting Cogs **

<https://nrich.maths.org/1129> - All the Digits

<https://nrich.maths.org/948> - What 2?

<https://nrich.maths.org/12877> - Identical Digit Multiplication

<https://nrich.maths.org/6901> - How do you do it?

It Was 2010! *

Planning a School Trip

SPRING TERM

Use this time to recap long multiplication and division and look at worded problems and problems in context

Year 6 NUMBER – FRACTIONS (INCLUDING DECIMALS AND PERCENTAGES)

Pupil end points for this unit of work: (Year 6 statutory requirements)

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions >1
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
- divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]

- associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]
- identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places (*Some of this covered in Place Value weeks*)
- multiply one-digit numbers with up to 2 decimal places by whole numbers
- use written division methods in cases where the answer has up to 2 decimal places
- solve problems which require answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

SMALL STEPS IN KNOWLEDGE – FRACTIONS, DECIMALS AND PERCENTAGES

VOCABULARY

Fraction, proper / improper fraction, equivalent fraction mixed number, numerator, denominator, vinculum, equivalent, reduced to, cancel, equal part, equal grouping, equal sharing parts of a whole half, two halves, one of two equal parts, quarter, two quarters, three quarters one of four equal parts, one third, two thirds one of three equal parts, sixths, sevenths, eights, tenths, hundredths, thousandths, decimal, decimal fraction, decimal point, decimal place, decimal equivalent, proportion, ratio, in every, for every, percentage, per cent, %

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

NCETM Spine Materials for Small Step Progression in Fractions / Intervention Suggestions

Fractions

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

- Improper fractions to mixed numbers (Recap)
- Mixed numbers to improper fractions (Recap)
 - Recap common factors
 - Equivalent fractions
 - Simplify fractions
- Equivalent fractions on a number line

Compare and order fractions, including fractions >1

- Fractions on a number line
- Compare and order fractions by denominator
- Compare and order fractions by numerator

More Fraction Bars **

Extending Fraction Bars **

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

- Add and subtract fractions with the same denominators (Recap)
 - Add and subtract fractions with different denominators
 - Add and subtract mixed numbers
 - Problems

Fraction Lengths **

Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]

- Multiply fractions by integers
- Multiply fractions by fractions

Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]

- Divide fractions by integers
- Recap four operations with fractions

Fractions of an Amount

- Fractions of an amount
- Fractions of an amount – finding the original

<https://nrich.maths.org/2421> - Andy's marbles (add and subtract for lower attainers)

<https://nrich.maths.org/peachestoday> - Monkey Peaches

Fractions, Decimals and Percentage

Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction

[for example, $\frac{3}{8}$]

- Decimals as fractions
- Converting between decimals and fractions

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

- Understand percentage (Recap)
 - Fractions to percentage
 - Equivalent FDP
 - Compare FDP
 - Order FDP
 - More % in ratio sessions

<https://nrich.maths.org/1249> - Matching Fractions, Decimals and Percentages

<https://nrich.maths.org/6945> - Doughnut Percents

<https://nrich.maths.org/2739> - Fractions and Percentages Card Game

<https://nrich.maths.org/9325> - Short FDP problems (inc. Bounding Ball)

<https://nrich.maths.org/1115> - Pull Out the Flags

Covered in Place Value and Four Operations weeks

Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places

Multiply one-digit numbers with up to 2 decimal places by whole numbers

Use written division methods in cases where the answer has up to 2 decimal places

Solve problems which require answers to be rounded to specified degrees of accuracy

Year 6 RATIO AND PROPORTION

Pupil end points for this unit of work: (Year 6 statutory requirements)

- solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts
- solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison

- solve problems involving similar shapes where the scale factor is known or can be found
- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

[Making connections with prior knowledge](#) (Ratio and Proportion NCETM)

SMALL STEPS IN KNOWLEDGE – RATIO AND PROPORTION

VOCABULARY

See fractions

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison (Resources in WRM Percentages)

- Calculate a percentage of an amount
- Increasing and reducing by a percentage
- Inverse percentage of an amount – find the whole

[Would You Rather? *](#)

Solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts

- Ratio language / symbol
- Ratio and fractions
- Calculating ratio

[Fraction Fascination](#)

[Jumping *](#)

Solve problems involving similar shapes where the scale factor is known or can be found

- Using scale factors
- Calculating scale factors

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

[In the Money **](#)

<https://nrich.maths.org/9256> - Ratio and Proportion Short Problems

<https://nrich.maths.org/6870> - Mixing Lemonade

<https://nrich.maths.org/6923> - Growing Rectangles

<https://nrich.maths.org/1026> - Pumpkin Pie Problem

<https://nrich.maths.org/1048> - Rectangle Tangle

<https://nrich.maths.org/2420> - Orange Drink

<https://nrich.maths.org/1118> - Would You Rather?

Year 6 ALGEBRA

Pupil end points for this unit of work: (Year 6 statutory requirements)

- use simple formulae
- generate and describe linear number sequences

- express missing number problems algebraically
- find pairs of numbers that satisfy an equation with 2 unknowns
- enumerate possibilities of combinations of 2 variables

SMALL STEPS IN KNOWLEDGE – ALGEBRA

VOCABULARY

Formula, formulae, equation, unknown, variable, expression, enumerate, substitution, combinations

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

Generate and describe linear number sequences

- Continue missing numbers
 - Find a rule 1 step
 - Find a rule 2 step
- Forming expressions

[Break it Up! *](#)

[Holes *](#)

[Button-up Some More](#)

[Domino Sets *](#)

Use simple formulae

- Substitution
- Forming equations
- Solving equations 1 step
- Solving equations 2 step

[Doplication *](#)

[Diagonal Sums **](#)

[Finding 3D Stacks ***](#)

Find pairs of numbers that satisfy an equation with 2 unknowns

- Explain missing numbers and justify responses
 - Find pairs of values

[Price Match **](#)

Express missing number problems algebraically

[Two and Two ***](#)

[Plenty of Pens *](#)

[Different Deductions **](#)

<https://nrich.maths.org/8739> - Patterns and Sequences

Enumerate possibilities of combinations of 2 variables

Year 6 MEASUREMENT

Pupil end points for this unit of work: (Year 6 statutory requirements)

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate
- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places
- convert between miles and kilometres
- recognise that shapes with the same areas can have different perimeters and vice versa
- recognise when it is possible to use formulae for area and volume of shapes
- calculate the area of parallelograms and triangles
- calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]

SMALL STEPS IN KNOWLEDGE – MEASUREMENT

VOCABULARY

Measure, measurement, size, compare, unit, standard unit, metric unit, imperial unit, guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, approximately, about the same as, roughly, just over, just under, measuring scale, division

Length, millimetre, centimetre, metre, kilometre, mile, **yard, foot, feet, inch, inches**, length, height, width, depth, breadth, long, short, tall, high, low, wide, narrow, thick, thin, longer, shorter, taller, higher ... and so on, longest, shortest, tallest, highest ... and so on, far, further, furthest, near, close, distance apart... between... to... from, edge, perimeter, **circumference**, area, covers square cm (cm²), square metre (m²), square millimetre (mm²), ruler, metre stick, tape measure

Weight, mass: big, bigger, small, smaller, weight: heavy/light, heavier/lighter, heaviest/lightest, **tonne**, kilogram, half kilogram, gram, **pound, ounce**, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales

Capacity and volume, litre, half litre, millimetre, **centilitre, cubic centimetres (cm³), cubic metres (m³), cubic millimetres (mm³), cubic kilometres (km³)**, capacity, volume, full, empty, more than, less than, half, full, quarter full, holds, contains, container, measuring cylinder, pint, gallon

Temperature, temperature, degree, centigrade

Time, time, days of the week, Monday, Tuesday ... months of the year, (January, February ...) seasons: spring, summer, autumn, winter, day, week, weekend, fortnight, month, year, leap year, decade, century, millennium, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime today, yesterday, tomorrow, before, after, earlier, later, next, first, last, noon, midnight, calendar, date, date of birth, now, soon, early, late, earliest, latest, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? how long will it be to ...? how long will it take to ...? how often? always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, 5 / 10 / 15 minutes past, a.m., p.m., clock, clock face, watch, hands, digital, analogue, watch, timer, hour hand, minute hand, hours, minutes, seconds, timetable, arrive, depart, Roman numerals, 12-hour clock, 24-hour clock, **Greenwich Mean Time, British Summer Time, International Date Line**

Money, money, coin, penny, pence, pound, price, cost, buy, bought, sell, sold, spend, spent, pay, change, dear, costs, more, cheap, costs, less, cheaper, costs the same as, how much ...? how many...? total, discount, currency, **profit, loss**

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

Converting Units

Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places

Metric measures (including reading scales)

- Converting metric measures
- Calculating with metric measures

Convert between miles and kilometres

- Miles and Km
- Imperial measures

Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate

Perimeter, Area and Volume

Recognise that shapes with the same areas can have different perimeters and vice versa

- Shapes same area
- Area and perimeter

Recognise when it is possible to use formulae for area and volume of shapes

Calculate the area of parallelograms and triangles

- Area of a triangle
- Area of a parallelogram
- Compound areas

<https://nrich.maths.org/1045> - Numerically Equal (area and perimeter)

<https://nrich.maths.org/7168> - Unusual Polygon

<https://nrich.maths.org/10344> - Through the Window

<https://nrich.maths.org/9374> - Area, Perimeter and Volume Short Problems

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]

- Finding the volume
- Counting cubes
- Length x width x height
- Volume of cubes and cuboids

<https://nrich.maths.org/89> - Making Boxes

[Next Size Up **](#)

Year 6 GEOMETRY – PROPERTIES OF SHAPE

Pupil end points for this unit of work: (Year 6 statutory requirements)

- draw 2-D shapes using given dimensions and angles
- recognise, describe and build simple 3-D shapes, including making nets
- compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

SMALL STEPS IN KNOWLEDGE – GEOMETRY (2D / ANGLES / 3D)

VOCABULARY

Shape, pattern, flat, line, curved, straight, round, hollow, solid, sort, make, build, construct, draw, sketch, perimeter, centre, radius, diameter, **circumference**, **concentric**, **arc net**, **open**, **closed**, surface, angle, right-angled, congruent, **intersection**, **intersecting**, **plane**, base, square-based, size, bigger, larger, smaller, symmetry, reflect, reflection, axis of symmetry, reflective symmetry, symmetrical, symmetrical pattern, line symmetry, pattern, repeating pattern, match, regular, irregular

2D shape – D, two-dimensional, corner side point, pointed, rectangle (including square), rectangular, oblong, rectilinear, circle, circular, triangle, triangular, equilateral triangle, isosceles triangle, scalene triangle, pentagon,

pentagonal, hexagon, hexagonal, heptagon, octagon, octagonal, quadrilateral, parallelogram, rhombus, trapezium, kite, polygon, right-angled, parallel, perpendicular, x-axis, y-axis, quadrant

3D shape – D, three-dimensional, face, edge, vertex, vertices, cube, cuboid, pyramid, sphere, hemisphere, spherical, cone, cylinder, cylindrical, prism, triangular prism, tetrahedron, polyhedron, octahedron, dodecahedron, net, open, closed

Angles – see Position and Direction

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

2D shapes

Compare and classify geometric shapes based on their properties and sizes

- Shapes and know if shapes are regular or irregular
 - Name properties of 2D shapes
 - Recognise different triangles and quadrilaterals
- Solve problems applying understanding of 2D shapes and 3D shapes

<https://nrich.maths.org/2927> - Property Chart

<https://nrich.maths.org/6998> - Quad Match

<https://nrich.maths.org/10368> - Shape Draw

<https://nrich.maths.org/2852> - Name That Triangle

<https://nrich.maths.org/12673> - Sometimes Always Never

<https://nrich.maths.org/2924> - Quadrilaterals Game

Quadrilaterals ***

Where Are They? *

Triangles All Around (I)

Round a Hexagon *

Always, Sometimes or

Never? Shape *

Name That Triangle! *

Angles

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Find unknown angles in any triangles, quadrilaterals, and regular polygons

- Recap drawing and measuring angles accurately
 - Find angles on a straight line
 - Find angles around a point
 - Calculate angles
 - Vertically opposite angles
- Unknown angles in a triangle inc. isosceles
 - Angles in quadrilaterals
 - Angles in regular polygons
 - Missing angles problems

Draw 2-D shapes using given dimensions and angles

- Draw 2D shapes accurately given dimensions and angles

[Baravelle](#) **

[Making Spirals](#) ***

[Shape Draw](#) *

Recognise, describe and build simple 3-D shapes, including making nets

<https://nrich.maths.org/2315> - Cut Nets

<https://nrich.maths.org/1140> - a Puzzling Cube

[Making Cuboids](#) **

[Cut Nets](#) **

[Sponge Sections](#) **

Circles – some resources in WRM Statistics planning

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

- Naming radius, diameters and circumference
- Know that radius is twice the diameter

Year 6 GEOMETRY – POSITION AND DIRECTION

Pupil end points for this unit of work: (Year 6 statutory requirements)

- describe positions on the full coordinate grid (all 4 quadrants)
- draw and translate simple shapes on the coordinate plane, and reflect them in the axes

SMALL STEPS IN KNOWLEDGE – GEOMETRY – POSITION AND DIRECTION

VOCABULARY

Position, over, under, underneath, above, below, top, bottom, side, on, in, outside, inside, around, in front, behind, front, back, beside, next to, opposite, apart, between, middle, edge, centre, corner, direction, journey, route, left, right, up, down, higher, lower, forwards, backwards, sideways, across, next to, close, near, far along, through, to, from, towards, away from clockwise, anticlockwise, compass, point, NSEW, north-east, north-west, south-east, south-west, NE, NW, SE, SW, north, south, east, west, horizontal, vertical, diagonal, translate, translation, coordinate, movement, slide roll turn, stretch, bend, whole turn, half turn, quarter turn, three-quarter turn, rotate, rotation, angle... is greater than / smaller than a right angle, degree, right angle, acute angle, obtuse angle, reflex angle, reflection, straight line, ruler, set square, angle measurer, compass, protractor

See also Properties of Shapes

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

Describe positions on the full coordinate grid (4 quadrants)

- One quadrant interpret and draw
 - Four quadrants

Draw and translate simple shapes on the coordinate plane, and reflect them in the axes

- Symmetry
- Reflections
- Translations
- Reflections, symmetry and translations on a coordinates grid

<https://nrich.maths.org/6288> - Treasure Hunt
<https://nrich.maths.org/6280/index> - Eight Hidden Squares
<https://nrich.maths.org/7749> - National Flags
<https://nrich.maths.org/1111> - Transformation Tease
Ten Hidden Squares ***
Treasure Hunt (I) *

Year 6 STATISTICS

Pupil end points for this unit of work: (Year 6 statutory requirements)

- interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

SMALL STEPS IN KNOWLEDGE – STATISTICS

VOCABULARY

Count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, pictogram, represent, group, list, table, chart, bar chart, frequency table, bar line chart, Carroll diagram, Venn diagram, line graph, **pie chart**, label, title, axis, axes, diagram, most popular, most, common least popular, least common, maximum / minimum value, outcome, **mean (mode, median, range as estimates for this), statistics, distribution**

Declarative, Procedural and Conditional Knowledge

Facts, Strategies and Application

Interpret and construct pie charts and line graphs and use these to solve problems

- Read and interpret bar charts / pictograms / line graphs
 - Draw line graphs
- Use line graphs to solve problems
 - Recap information on circles
 - Read and interpret pie charts
 - Draw / construct pie charts

Birdwatch *

<https://nrich.maths.org/4803> - Take Your Dog For a Walk
<https://nrich.maths.org/1174> - Graphing Number Patterns

Calculate and interpret the mean as an average

- Recap mode, media, range
 - Calculate the mean
- Interpret averages and solve problems

<https://nrich.maths.org/6769> - Better Spelling
<https://nrich.maths.org/4937> - Match the Matches
<https://nrich.maths.org/10995> - About Average

