 **NRICH Curriculum Mapping Documents**

**NRICH tasks linked to the English Primary National Curriculum for mathematics in Y3, Y4, Y5, Y6**

NRICH tasks embrace the aims of the curriculum (problem solving, reasoning, fluency) as well as curriculum ‘content’. However, not all objectives will have an NRICH task attached to them.

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| Tasks badged with a \* are suitable for the whole class | Tasks badged with a \*\* are suitable for the majority of the class | Tasks badged with a \*\*\* are for those who like a serious challenge |
| G = game | All NRICH tasks are categorised as problems. | I = investigation |

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| **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Strand 1 – Number** | | | |
| Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number  [**How Would We Count?**](http://nrich.maths.org/8123) **\*** | Count in multiples of 6, 7, 9, 25 and 1000  [**Count Me In**](https://nrich.maths.org/13263) \* | Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit | Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit |
| Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)  [**Coded Hundred Square**](https://nrich.maths.org/6554) **\***  [**Which Scripts?**](http://nrich.maths.org/774) **\*** | Find 1000 more or less than a given number  [**What Distance?**](https://nrich.maths.org/13267) **\*\*** | Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000  [**Space Distances**](https://nrich.maths.org/13270) **\*** | Round any whole number to a required degree of accuracy |
| Compare and order numbers up to 1000 | Count backwards through zero to include negative numbers | Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero  [**Tug Harder!**](http://nrich.maths.org/public/viewer.php?obj_id=5898) **\* G**  [**Swimming Pool**](http://nrich.maths.org/public/viewer.php?obj_id=5836)**\***  [**Sea Level**](http://nrich.maths.org/public/viewer.php?obj_id=5929) **\* I** | Use negative numbers in context, and calculate intervals across zero  [**First Connect Three**](http://nrich.maths.org/public/viewer.php?obj_id=5865) **\* G** |
| Identify, represent and estimate numbers using different representations | Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)  [**Nice or Nasty**](http://nrich.maths.org/6605) **\* G**  [**Dicey Operations**](http://nrich.maths.org/6606) \* **G**  [**The Deca Tree**](http://nrich.maths.org/public/viewer.php?obj_id=2006) **\***  [**Four-digit Targets**](http://nrich.maths.org/6342) **\***  [**Dicey Operations in Line**](http://nrich.maths.org/13261) **\* G**  [**The Thousands Game**](https://nrich.maths.org/2646) **\*** | Round any number up to  1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000  **Number and Place Value** | Solve number and practical problems that involve all of the above  [**Round the Four Dice**](https://nrich.maths.org/10426) **\* I**  [**Number Lines in Disguise**](http://nrich.maths.org/13452) **\*\*** |
| Read and write numbers up to 1000 in numerals and in words | Order and compare numbers beyond 1000  **[Ordering Journeys \*\*](https://nrich.maths.org/13268)** | Solve number problems and practical problems that involve all of the above |  |
| Solve number problems and practical problems involving these ideas  [**Take Three Numbers**](http://nrich.maths.org/8063) **\* I**  [**Planning a School Trip**](http://nrich.maths.org/6969) **\***  [**Number Differences**](http://nrich.maths.org/2790) **\* G**  [**Sitting Round the Party Tables**](http://nrich.maths.org/7228) **\***  [**Number Match**](https://nrich.maths.org/6937) **\* G**  [**A Mixed-up Clock**](http://nrich.maths.org/2127) **\***  [**That Number Square!**](http://nrich.maths.org/8169) **\* I**  [**Three Neighbours**](http://nrich.maths.org/8108) **\*\* I**  [**Magic Vs**](http://nrich.maths.org/public/viewer.php?obj_id=6274) **\*\***  [**Square Subtraction**](http://nrich.maths.org/8065) **\*\*\* I** | Identify, represent and estimate numbers using different representations  [**Representing Numbers**](https://nrich.maths.org/13272) **\*** | Read Roman numerals to 1000 (M) and recognise years written in Roman numerals  [**Roman Numerals**](https://nrich.maths.org/13271) **\*** |  |
|  | Round any number to the nearest 10, 100 or 1000  [**Reasoned Rounding**](http://nrich.maths.org/10945) \* G |  |  |
|  | Solve number and practical problems that involve all of the above and with increasingly large positive numbers |  |  |
|  | Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value |  |  |
| Add and subtract numbers mentally, including:   * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds | Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate  **Addition and Subtraction** | Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) |  |
| Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | Estimate and use inverse operations to check answers to a calculation | Add and subtract numbers mentally with increasingly large numbers |  |
| Estimate the answer to a calculation and use inverse operations to check answers | Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why  [**Fifteen Cards**](http://nrich.maths.org/7506) **\* I**  [**Money Bags**](http://nrich.maths.org/public/viewer.php?obj_id=1116) **\*\***  [**Amy’s Dominoes**](http://nrich.maths.org/public/viewer.php?obj_id=1044) **\*\***  [**Sealed Solution**](http://nrich.maths.org/public/viewer.php?obj_id=1177) **\*\***  [**Roll These Dice**](http://nrich.maths.org/53) **\*\* I** | Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |  |
| Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction  [**Buying a Balloon**](http://nrich.maths.org/public/viewer.php?obj_id=186) **\***  [**Super Shapes**](http://nrich.maths.org/public/viewer.php?obj_id=1056) **\***  [**Strike it Out**](http://nrich.maths.org/6589) **\* G**  [**Dicey Addition**](http://nrich.maths.org/11863) **\* G**  [**Half Time**](https://nrich.maths.org/7408) **\***  [**Play to 37**](https://nrich.maths.org/10328) **\* G**  [**Build it Up**](https://nrich.maths.org/10592) **\* I**  [**Finding Fifteen**](http://nrich.maths.org/2645) **\*\***  [**Domino Square**](http://nrich.maths.org/146) **\*\***  [**Got It**](http://nrich.maths.org/public/viewer.php?obj_id=1272) **\*\* G**  [**Make 37**](http://nrich.maths.org/public/viewer.php?obj_id=1885) **\*\***  [**Consecutive Numbers**](http://nrich.maths.org/public/viewer.php?obj_id=31) **\*\* I**  [**Dice in a Corner**](https://nrich.maths.org/8586) **\*\*\* I**  [**4 Dom**](http://nrich.maths.org/179) **\*\*\*** |  | Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why  [**Twenty Divided Into Six**](http://nrich.maths.org/public/viewer.php?obj_id=1047) **\*\***  [**Maze 100**](https://nrich.maths.org/91) **\*\***  [**Six Ten Total**](http://nrich.maths.org/10917) **\*\* I**  [**Six Numbered Cubes**](http://nrich.maths.org/10918) **\*\***  [**Reach 100**](http://nrich.maths.org/public/viewer.php?obj_id=1130) **\*\*\***  [**Subtraction Surprise**](http://nrich.maths.org/11014) **\*** |  |
| Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables  [**Ordering Cards**](http://nrich.maths.org/8058) **\* G**  [**Music to My Ears**](http://nrich.maths.org/public/viewer.php?obj_id=5483) **\* I** | Recall multiplication and division facts for multiplication tables up to 12x12  [**Multiplication Square Jigsaw**](http://nrich.maths.org/public/viewer.php?obj_id=5573) **\* G**  [**Shape Times Shape**](http://nrich.maths.org/public/viewer.php?obj_id=5714) **\***  [**Let Us Divide!**](http://nrich.maths.org/8308) **\***  [**Carrying Cards**](http://nrich.maths.org/2726) **\***  [**Light the Lights Again**](http://nrich.maths.org/7035) **\* G**  [**Multiples Grid**](http://nrich.maths.org/public/viewer.php?obj_id=5429) **\* I**  [**Zios and Zepts**](http://nrich.maths.org/1005) **\***  [**Times Tables Shifts**](https://nrich.maths.org/6863) **\* G**  [**Table Patterns Go Wild!**](http://nrich.maths.org/6924) **\*\* I**  [**Satisfying Four Statements**](http://nrich.maths.org/13377) **\***  [**The Remainders Game**](http://nrich.maths.org/6402) **\* G**  [**Remainders**](http://nrich.maths.org/1783) **\*\*** | Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers  [**Sweets in a Box**](http://nrich.maths.org/public/viewer.php?obj_id=84) **\* I**  [**Which Is Quicker?**](http://nrich.maths.org/1817) **\***  [**Multiplication Squares**](http://nrich.maths.org/public/viewer.php?obj_id=1134) **\* I**  [**Flashing Lights**](http://nrich.maths.org/public/viewer.php?obj_id=1014) **\***  **Multiplication and Division**  [**Abundant Numbers**](http://nrich.maths.org/1011) **\* I**  [**Factors and Multiples Game**](http://nrich.maths.org/public/viewer.php?obj_id=5468) **\* G**  [**Pebbles**](https://nrich.maths.org/48) **\*\* I**  [**Three Dice**](https://nrich.maths.org/6719) **\***  [**Factor Track**](http://nrich.maths.org/7468) **\*\* G** | Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication |
| Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods | Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers | Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers  [**Two Primes Make One Square**](http://nrich.maths.org/public/viewer.php?obj_id=1150) **\*\* I** | 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 |
| Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects  [**A Square of Numbers**](http://nrich.maths.org/public/viewer.php?obj_id=2005) **\* G**  [**What Do You Need?**](http://nrich.maths.org/public/viewer.php?obj_id=5950) **\***  [**Follow the Numbers**](http://nrich.maths.org/7127) **\* I**  [**What's in the Box?**](http://nrich.maths.org/public/viewer.php?obj_id=5576) **\***  [**How Do You Do It?**](http://nrich.maths.org/6901) **\***  [**Ip Dip**](https://nrich.maths.org/7185) **\* I**  [**Journeys in Numberland**](http://nrich.maths.org/7285) **\* I**  [**This Pied Piper of Hamelin**](http://nrich.maths.org/8315) **\*\*** | Recognise and use factor pairs and commutativity in mental calculations | Establish whether a number up to 100 is prime and recall prime numbers up to 19 | Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context |
|  | Multiply two-digit and three-digit numbers by a one-digit number using formal written layout | Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers  [**All the Digits**](http://nrich.maths.org/1129) **\*\***  [**Trebling**](http://nrich.maths.org/2004) **\*** | Perform mental calculations, including with mixed operations and large numbers  [**Become Maths Detectives**](http://nrich.maths.org/6928) **\* I**  [**Exploring Number Patterns You Make**](http://nrich.maths.org/8387) **\*\* I** |
|  | Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects | Multiply and divide numbers mentally drawing upon known facts | Identify common factors, common multiples and prime numbers  [**The Moons of Vuvv**](http://nrich.maths.org/public/viewer.php?obj_id=1066) **\***  [**Mystery Matrix**](http://nrich.maths.org/public/viewer.php?obj_id=1070) **\*\* I**  [**Factor Lines**](http://nrich.maths.org/public/viewer.php?obj_id=1138) **\*\* I**  [**Factor-multiple Chains**](http://nrich.maths.org/public/viewer.php?obj_id=5578) **\*\***  [**Round and Round the Circle**](http://nrich.maths.org/public/viewer.php?obj_id=86) **\*\* I**  [**Counting Cogs**](http://nrich.maths.org/6966) **\*\*** |
|  |  | Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context  [**Division Rules**](http://nrich.maths.org/10490) **\* I** | Use their knowledge of the order of operations to carry out calculations involving the four operations |
|  |  | Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000  [**Multiply Multiples 1**](http://nrich.maths.org/10421) **\***  [**Multiply Multiples 2**](http://nrich.maths.org/10424) **\***  [**Multiply Multiples 3**](http://nrich.maths.org/10478) **\*** | Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |
|  |  | Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)  [**Up and Down Staircases**](http://nrich.maths.org/public/viewer.php?obj_id=2283) **\***  [**One Wasn’t Square**](http://nrich.maths.org/public/viewer.php?obj_id=1119) **\*\***  [**Cycling Squares**](http://nrich.maths.org/public/viewer.php?obj_id=1151) **\*\***  [**Picture a Pyramid …**](https://nrich.maths.org/5809) **\*\*** | Solve problems involving addition, subtraction, multiplication and division  [**Always, Sometimes or Never? Number**](http://nrich.maths.org/12672) **\*** |
|  |  | Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes  [**Division Rules**](https://nrich.maths.org/10490) **\* I**  [**Odd Squares**](http://nrich.maths.org/2280) **\***  [**Cubes Within Cubes**](http://nrich.maths.org/1155) **\*\*\***  [**Curious Number**](http://nrich.maths.org/7218) **\*\*\* I** | Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy  [**Four Go**](http://nrich.maths.org/5633) **\* G** |
|  |  | Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign  [**Highest and Lowest**](http://nrich.maths.org/943) **\* I**  [**Make 100**](http://nrich.maths.org/public/viewer.php?obj_id=1013) **\*\* I**  [**Four Goodness Sake**](http://nrich.maths.org/1081) **\*\*\*** |  |
|  |  | Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates |  |
| Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 | Recognise and show, using diagrams, families of common equivalent fractions  [**Fractional Wall**](http://nrich.maths.org/4519) **\***  [**Fractional Triangles**](http://nrich.maths.org/public/viewer.php?obj_id=2124) **\***  [**Bryony’s Triangle**](http://nrich.maths.org/7392) **\*** | Compare and order fractions whose denominators are all multiples of the same number | Use common factors to simplify fractions; use common multiples to express fractions in the same denomination |
| Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators  [**Fraction Match**](http://nrich.maths.org/6938) **\* G** | Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths  [**Tumbling Down**](http://nrich.maths.org/13728) **\*** | Compare and order fractions, including fractions >1  [**More Fraction Bars**](http://nrich.maths.org/13040) \*\*  [**Extending Fraction Bars**](http://nrich.maths.org/13041) **\*\*** |
| Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number  [**Andy’s Marbles**](http://nrich.maths.org/2421) **\*\***  [**Fractions in a Box**](http://nrich.maths.org/public/viewer.php?obj_id=1103) **\*\***  [**Chocolate**](http://nrich.maths.org/public/viewer.php?obj_id=34) **\*\* I** | Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5)  [**Balance of Halves**](https://nrich.maths.org/5677) **\***  **Fractions, Decimals, Percentages, Ratio and Proportion** | Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions  [**Fraction Lengths**](http://nrich.maths.org/12935) \*\* |
| Recognise and show, using diagrams, equivalent fractions with small denominators  [**Matching Fractions**](http://nrich.maths.org/8283) **\* G** | Add and subtract fractions with the same denominator | Add and subtract fractions with the same denominator and denominators that are multiples of the same number  [**A4 Fraction Addition**](http://nrich.maths.org/12937) **\***  [**A4 Fraction Subtraction**](http://nrich.maths.org/12955) **\***  [**Linked Chains**](http://nrich.maths.org/12936) **\*** | Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, ¼ x ½ = 1/8] |
| Add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] | Recognise and write decimal equivalents of any number of tenths or hundredths | Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6] |
| Compare and order unit fractions, and fractions with the same denominators | Recognise and write decimal equivalents to ¼; ½; ¾ | Read and write decimal numbers as fractions (e.g. 0.71 = 71/100) | Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] |
| Solve problems that involve all of the above | Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths | Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents | Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places |
|  | Round decimals with one decimal place to the nearest whole number  [**Round the Dice Decimals 1**](http://nrich.maths.org/10438) **\* I** | Round decimals with two decimal places to the nearest whole number and to one decimal place  [**Round the Dice Decimals 2**](https://nrich.maths.org/10428) **\*** | Multiply one-digit numbers with up to two decimal places by whole numbers |
|  | Compare numbers with the same number of decimal places up to two decimal places | Read, write, order and compare numbers with up to three decimal places  [**Greater Than or Less Than?**](https://nrich.maths.org/10587) **\* I**  [**Spiralling Decimals**](http://nrich.maths.org/10326) **\*\*\* G** | Use written division methods in cases where the answer has up to two decimal places |
|  | Solve simple measure and money problems involving fractions and decimals to two decimal places | Solve problems involving number up to three decimal places  [**Route Product**](http://nrich.maths.org/public/viewer.php?obj_id=5632) **\*\* I**  [**Forgot the Numbers**](http://nrich.maths.org/public/viewer.php?obj_id=1015) **\*\* I** | Solve problems which require answers to be rounded to specified degrees of accuracy |
|  |  | Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100, and as a decimal | Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts  [**Doughnut Percents**](http://nrich.maths.org/6945) **\*** |
|  |  | Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator a multiple of 10 or 25  [**Matching Fractions, Decimals and Percentages**](http://nrich.maths.org/1249) **\* G** |  |
|  |  |  | Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts  [**Jumping**](http://nrich.maths.org/7407) **\***  [**Rectangle Tangle**](http://nrich.maths.org/1048) **\***  [**Orange Drink**](http://nrich.maths.org/public/viewer.php?obj_id=2420) **\*\***  [**Pumpkin Pie Problem**](http://nrich.maths.org/public/viewer.php?obj_id=1026) **\*\***  [**Fraction Fascination**](http://nrich.maths.org/5061) **\*\*\*** |
|  |  |  | Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison  [**Would You Rather?**](http://nrich.maths.org/public/viewer.php?obj_id=1118) **\*** |
|  |  |  | 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  [**In the Money**](https://nrich.maths.org/1099) \*\* |
|  |  |  | Use simple formulae  [**Finding 3D Stacks**](https://nrich.maths.org/13273) **\*\*\***  [**Doplication**](https://nrich.maths.org/66) **\***  [**Diagonal Sums**](http://nrich.maths.org/2791) **\*\*** |
|  |  | **Algebra** | Generate and describe linear number sequences  [**Domino Sets**](http://nrich.maths.org/9965) **\* I**  [**Break it Up!**](http://nrich.maths.org/2284) **\* I**  [**Holes**](http://nrich.maths.org/6529) **\* I**  [**Button-up Some More**](http://nrich.maths.org/7350) **\*\* I** |
|  |  |  | Express missing number problems algebraically  [**Plenty of Pens**](https://nrich.maths.org/1117) **\***  [**Two and Two**](http://nrich.maths.org/781) **\*\*\* I** |
|  |  |  | Find pairs of numbers that satisfy an equation with two unknowns  [**Price Match**](http://nrich.maths.org/13274) **\*\*** |
|  |  |  | Enumerate possibilities of combinations of two variables |
| **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Strand 2 - Measurement** | | | |
| Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)  [**Olympic Starters**](http://nrich.maths.org/8170) **\* I**  [**Car Journey**](https://nrich.maths.org/10350) **\* I**  [**Oh! Harry!**](http://nrich.maths.org/5979) **\*\*** | Convert between different units of measure [for example, kilometre to metre; hour to minute] | Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre] | Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate |
| Measure the perimeter of simple 2-D shapes | Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints | 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 up to three decimal places |
| Add and subtract amounts of money to give change, using both £ and p in practical contexts  [**How Much Did it Cost?**](http://nrich.maths.org/5949) **\*\*** | Find the area of rectilinear shapes by counting squares  [**Torn Shapes**](http://nrich.maths.org/public/viewer.php?obj_id=4963) **\* I**  [**Twice as Big?**](http://nrich.maths.org/5561) **\*** | Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres  [**Area and Perimeter**](http://nrich.maths.org/7280) **\* I**  [**Through the Window**](https://nrich.maths.org/10344) **\* I** | Convert between miles and kilometres |
| Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks  [**What Is the Time?**](http://nrich.maths.org/7377) **\***  [**Clocks**](http://nrich.maths.org/public/viewer.php?obj_id=1812) **\***  [**Two Clocks**](http://nrich.maths.org/public/viewer.php?obj_id=4806) **\*\***  [**The Time Is …**](http://nrich.maths.org/7384) **\*\***  [**5 on the Clock**](http://nrich.maths.org/public/viewer.php?obj_id=1981) **\*\*\* I**  [**Approaching Midnight**](https://nrich.maths.org/10776) **G**  [**How Many Times?**](https://nrich.maths.org/981) **\*** | Estimate, compare and calculate different measures, including money in pounds and pence  [**Discuss and Choose**](http://nrich.maths.org/7449) **\*** | Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes  [**Shaping It**](http://nrich.maths.org/7301) **\* I**  [**Brush Loads**](http://nrich.maths.org/public/viewer.php?obj_id=4911) **\* I**  [**Cubes**](http://nrich.maths.org/42) **\* I**  [**Numerically Equal**](http://nrich.maths.org/public/viewer.php?obj_id=1045) **\*\***  [**Making Boxes**](http://nrich.maths.org/public/viewer.php?obj_id=89) **\*\* I**  [**Ribbon Squares**](http://nrich.maths.org/9939) **\*\*\***  [**Fitted**](http://nrich.maths.org/public/viewer.php?obj_id=1854) **\*\*\*** | Recognise that shapes with the same areas can have different perimeters and vice versa  [**Dicey Perimeter, Dicey Area**](https://nrich.maths.org/10333) **\* G** |
| Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o’clock, a.m./p.m., morning, afternoon, noon and midnight  [**Wonky Watches**](http://nrich.maths.org/public/viewer.php?obj_id=1002) **\*\***  [**Watch the Clock**](http://nrich.maths.org/public/viewer.php?obj_id=980) **\*\*\*** | Read, write and convert time between analogue and digital 12- and 24-hour clocks | Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]  [**Pouring Problem**](http://nrich.maths.org/13664) **\*\*** | Recognise when it is possible to use formulae for area and volume of shapes |
| Know the number of seconds in a minute and the number of days in each month, year and leap year | Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days | Solve problems involving converting between units of time | Calculate the area of parallelograms and triangles |
| Compare durations of events [for example to calculate the time taken by particular events or tasks] |  | Use all four operations to solve problems involving measure [e.g. length, mass, volume, money] using decimal notation, including scaling | 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  [**Next Size Up**](http://nrich.maths.org/6931) **\*\*** |
| **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Strand 3 – Geometry** | | | |
| Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them  [**Building Blocks**](http://nrich.maths.org/public/viewer.php?obj_id=2343) **\***  [**Triple Cubes**](http://nrich.maths.org/7128) **\* I**  [**Stick Images**](http://nrich.maths.org/6980) **\* G**  [**Rolling That Cube**](http://nrich.maths.org/7299) **\***  [**A Puzzling Cube**](http://nrich.maths.org/1140) **\***  [**Arranging Cubes**](https://nrich.maths.org/6973) **\* G**  [**Square Corners**](https://nrich.maths.org/1142) **\*\***  [**Overlapping Again**](http://nrich.maths.org/5820) **\*\***  [**Move Those Halves**](https://nrich.maths.org/11040) **\*\* I**  [**The Third Dimension**](http://nrich.maths.org/public/viewer.php?obj_id=1148) **\*\*\* I**  [**Board Block Challenge**](https://nrich.maths.org/2872) **\*\*\* G**  [**Inky Cube**](http://nrich.maths.org/7241) **\*\*\*** | Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes  [**Sorting Logic Blocks**](http://nrich.maths.org/7192) **\* G**  [**What Shape?**](http://nrich.maths.org/6986) **\* G**  [**Shapes on the Playground**](http://nrich.maths.org/1054) **\*\***  [**Nine-pin Triangles**](http://nrich.maths.org/public/viewer.php?obj_id=2852) **\*\*\* I**  [**Cut it Out**](http://nrich.maths.org/public/viewer.php?obj_id=720) **\*\*\***  [**Quad Match**](http://nrich.maths.org/6998) **\*\***  [**Four Triangles Puzzle**](http://nrich.maths.org/141) **\* I** | Identify 3-D shapes, including cubes and other cuboids, from 2-D representations  **Properties of Shapes** | Draw 2-D shapes using given dimensions and angles  [**Shape Draw**](https://nrich.maths.org/10368) **\***  [**Baravelle**](http://nrich.maths.org/6522) **\***  [**Making Spirals**](http://nrich.maths.org/8294) **\*\*\*** |
| Recognise angles as a property of shape or a description of a turn | Identify acute and obtuse angles and compare and order angles up to two right angles by size | Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles  [**Estimating Angles**](http://nrich.maths.org/1235) **\* G** | Recognise, describe and build simple 3-D shapes, including making nets  [**Cut Nets**](http://nrich.maths.org/public/viewer.php?obj_id=2315) **\*\***  [**Making Cuboids**](http://nrich.maths.org/public/viewer.php?obj_id=90) **\*\* I**  [**Sponge Sections**](http://nrich.maths.org/2156) **\*\*** |
| Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle  [**Seeing Squares**](http://nrich.maths.org/13125) **\* G** | Identify lines of symmetry in 2-D shapes presented in different orientations  [**Let Us Reflect**](http://nrich.maths.org/public/viewer.php?obj_id=1873) **\***  [**Stringy Quads**](http://nrich.maths.org/public/viewer.php?obj_id=2913) **\*\***  [**Counters in the Middle**](https://nrich.maths.org/6978) **\* G** | Draw given angles, and measure them in degrees (°)  [**The Numbers Give the Design**](http://nrich.maths.org/6919) **\* I**  [**Six Places to Visit**](http://nrich.maths.org/public/viewer.php?obj_id=5655) **\***  [**How Safe Are You?**](http://nrich.maths.org/public/viewer.php?obj_id=5647) **\***  [**Olympic Turns**](http://nrich.maths.org/8191) **\*\*\*** | Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons  [**Where Are They?**](http://nrich.maths.org/public/viewer.php?obj_id=1058) **\***  [**Round a Hexagon**](http://nrich.maths.org/8095) **\***  [**Always, Sometimes or Never? Shape**](http://nrich.maths.org/12673) **\***  [**Quadrilaterals**](http://nrich.maths.org/public/viewer.php?obj_id=962) **\*\*\* I**  [**Triangles All Around**](http://nrich.maths.org/2850) **\*\*\***  [**Name That Triangle!**](http://nrich.maths.org/14042) **\*** |
| Identify horizontal and vertical lines and pairs of perpendicular and parallel lines  [**National Flags**](http://nrich.maths.org/7749) **\*** | Complete a simple symmetric figure with respect to a specific line of symmetry  [**School Fair Necklaces**](https://nrich.maths.org/9692) **\*\* I**  [**Symmetry Challenge**](http://nrich.maths.org/public/viewer.php?obj_id=1886) **\*\*\* I**  [**Reflector ! Rotcelfer**](http://nrich.maths.org/6862) **\*\*\*** | Identify:   * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90° | Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
|  |  | Use the properties of rectangles to deduce related facts and find missing lengths and angles  [**Making Rectangles**](http://nrich.maths.org/6936) **\*\*** | Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles |
|  |  | Distinguish between regular and irregular polygons based on reasoning about equal sides and angles  [**Egyptian Rope**](http://nrich.maths.org/public/viewer.php?obj_id=982) **\*\* I**  [**Bracelets**](http://nrich.maths.org/79) **\* I** |  |
|  | Describe positions on a 2-D grid as coordinates in the first quadrant  [**Coordinate Challenge**](http://nrich.maths.org/5038) **\***  [**Eight Hidden Squares**](http://nrich.maths.org/public/viewer.php?obj_id=6280) **\*\*** | Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed  [**Transformations on a Pegboard**](http://nrich.maths.org/public/viewer.php?obj_id=1813) **\***  [**More Transformations on a Pegboard**](http://nrich.maths.org/public/viewer.php?obj_id=4901) **\*\* I** | Describe positions on the full coordinate grid (all four quadrants)  [**Treasure Hunt**](http://nrich.maths.org/public/viewer.php?obj_id=6288) **\* G**  [**Coordinate Tan**](http://nrich.maths.org/public/viewer.php?obj_id=1109) **\*\***  [**Ten Hidden Squares**](http://nrich.maths.org/public/viewer.php?obj_id=2654) **\*\*\***  **Position and Direction** |
|  | Describe movements between positions as translations of a given unit to the left/right and up/down |  | Draw and translate simple shapes on the coordinate plane, and reflect them in the axes |
|  | Plot specified points and draw sides to complete a given polygon.  [**A Cartesian Puzzle**](http://nrich.maths.org/1110) **\*** |  |  |
| **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Strand 4 - Statistics** | | | |
| Interpret and present data using bar charts, pictograms and tables  [**How Big Are Classes 5, 6 and 7?**](http://nrich.maths.org/2399) **\***  [**Our Sports**](http://nrich.maths.org/7779) **\* I**  [**Class 5’s Names**](http://nrich.maths.org/7522) **\***  [**Going for Gold**](http://nrich.maths.org/7800) **\* I**  [**The Domesday Project**](http://nrich.maths.org/7554) **\* I**  [**The Car That Passes**](http://nrich.maths.org/7249) **\* I**  [**If the World Were a Village**](http://nrich.maths.org/7725) **\***  [**Now and Then**](http://nrich.maths.org/8171) **\*\***  [**It's a Tie**](http://nrich.maths.org/public/viewer.php?obj_id=5516) **\*\* I**  [**Real Statistics**](http://nrich.maths.org/public/viewer.php?obj_id=4938) **\*\*\*** | Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | Solve comparison, sum and difference problems using information presented in a line graph | Interpret and construct pie charts and line graphs and use these to solve problems  [**Match the Matches**](http://nrich.maths.org/public/viewer.php?obj_id=4937) **\*\*** |
| Solve one-step and two-step questions [for example, ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables | Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs  [**Venn Diagrams**](http://nrich.maths.org/public/viewer.php?obj_id=6290) **\***  [**More Carroll Diagrams**](http://nrich.maths.org/public/viewer.php?obj_id=13211) **\***  [**Plants**](http://nrich.maths.org/36) **\*\* I** | Complete, read and interpret information in tables, including timetables | Calculate and interpret the mean as an average  [**Birdwatch**](http://nrich.maths.org/7553) **\* I** |