Supporting your child at home

Year 6

Maths

**By the end of Year 6 , most children should be able to…**

* Read and write numbers to 10 000 000
* Determine the value of each digit in numbers to 10 000 000
* Round any whole number to a required degree of accuracy
* Use negative numbers in context
* Calculate intervals across zero (linked to negative numbers)
* Compare and order numbers to 10 000 000 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
* Multiply numbers up to 4 digit x2 digit whole numbers using formal long multiplication
* Divide numbers up to 4 digit ÷2 digit using formal written method of long division
* Interpret remainders appropriately for context (as whole number remainders, fractions, decimals or rounding)
* Perform mental calculations with mixed operations and large numbers
* Identify common factors
* Identify common multiples
* Identify prime numbers
* Multiply 1 digit numbers with up to 2 decimal places by whole numbers e.g. (0.4 x2)
* Use estimation to check answers to calculations
* Use written division methods in cases where the answer has up to 2 decimal places
* 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 using the concept of equivalent fractions
* Multiply simple pairs of proper fractions, writing the answer in its simplest form (1/4 x1/2= 1/8)
* Divide proper fractions by whole numbers (1/3÷2=1/6)
* Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction
* 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
* Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three 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 three 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 ].
* 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.
* Describe positions on the full coordinate grid (all four quadrants).
* Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
* Interpret and construct pie charts and line graphs and use these to solve problems.
* Calculate and interpret the mean as an average.

**Recipes**

Find a recipe for 4 people and rewrite it for 8 people, e.g.

4 people 8 people

125g flour 250g flour

50g butter 100g butter

75g sugar 150g sugar

30ml treacle 60ml treacle

1 teaspoon ginger 2 teaspoons ginger

Can you rewrite it for 3 people? Or 5 people?

**Favourite food**

Ask your child the cost of a favourite item of food.

* Ask them to work out what 7 of them would cost, or 8, or 9.
* How much change would there be from £50?
* Repeat with his / her least favourite food. What is the difference in cost between the two?

**Sale of the century**

When you go shopping, or see a shop with a sale on, ask your child to work out what some items would cost with:

50% off

25% off

10% off

5% off

Ask your child to explain how s/he worked it out.

**TV addicts**

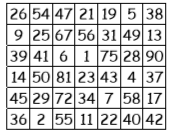
Ask your child to keep a record of how long he / she watches TV each day for a week.

Then ask him / her to do the following:

* Work out the total watching time for the week.
* Work out the average watching time for a day (that is, the total time divided by 7).
* Instead of watching TV, you could ask them to keep a record of time spent eating meals, or playing outdoors, or anything else they do each day. Then work out the daily average.

**Four in a line**

Draw a 6 x 7 grid. Fill it with numbers under 100.



* Take turns.
* Roll three dice, or roll one dice three times.
* Use all three numbers to make a number on the grid.
* You can add, subtract, multiply or divide the numbers, e.g. if you roll 3, 4 and 5, you could make 3 x 4 – 5 = 7, 54 ÷ 3 = 18, (4 + 5) x 3 = 27, and so on.
* Cover the number you make with a coin or counter.
* The first to get four of their counters in a straight line wins.

**Rhymes**

Make up rhymes together to help your child to remember the harder times-tables facts, e.g. 6 x 7 = 42 phew! 7 x 7 = 49 fine! 6 x 8 = 48 great!

**Three in a row**

For this game you need a calculator. Draw a line like this:



* Take it in turns to choose a fraction, say 2/5. Use the calculator to convert it to a decimal (i.e. 2 ÷ 5 = 0.4) and mark your initials at this point on the line.
* The aim of the game is to get 3 crosses in a row without any of the other player’s marks in between.
* Some fractions are harder to place than others, e.g. ninths.

**Animals**

* Take turns to think of an animal.
* Use an alphabet code, A = 1, B = 2, C = 3... up to Z = 26.
* Find the numbers for the first and last letters of your animal, e.g. for a TIGER, T = 20, and I = 9,
* Multiply the two numbers together, e.g. 20 x 9 = 180.
* The person with the biggest answer scores a point.
* The winner is the first to get 5 points. When you play again you could think of names, food, countries etc.

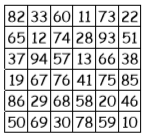
**Card game**

Use a pack of playing cards. Take out the jacks, queens and kings.

* Take turns.
* Take a card and roll a dice.
* Multiply the two numbers.
* Write down the answer. Keep a running total.
* The first to go over 301 wins!

**Remainders**

Draw a 6 x 6 grid like this and fill in numbers under 100.



* Choose the 7, 8 or 9 times table.
* Take turns.
* Roll a dice.
* Choose a number on the board, e.g. 59. Divide it by the tables number, e.g. 7. If the remainder for 59 ÷ 7 is the same as the dice number, you can cover the board number with a counter or coin.
* The first to get three of their counters in a straight line wins!

**Journeys**

Use the chart in the front of a road atlas that tells you the distance between places.

* Find the nearest place to you.
* Ask your child to work out how long it would take to travel from this place to some other places in England if you travelled at an average of 60 miles per hour, i.e. 1 mile per minute, e.g. York to Preston: 90 miles 1 hour 30 minutes York to Dover: 280 miles 4 hours 40 minutes
* Encourage your child to count in 60s to work out the answers mentally. Extend this by asking questions like “What if you travelled at 30 mph? What if we started at London?

**Doubles and trebles**

* Roll two dice.
* Multiply the two numbers to get your score.
* Roll one of the dice again. If it is an even number, double your score. If it is an odd number, treble your score.
* Keep a running total of your score.
* The first to get over 301 wins.

**Fours**

* Use exactly four 4s each time.
* You can add, subtract, multiply or divide them.
* Can you make each number from 1 to 100?
* Here are some ways of making the first two numbers.

1 = (4 + 4)/(4 + 4) 2 = 4/4 + 4/4

**One million pounds**

Pretend you have £1 000 000 to spend or give away. Plan with your child what to do with it, down to the last penny.