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Year Six

Parents’ Leaflet

How to support your child

with Maths at home

**By the end of Year 6 your child should;**

* Read and write numbers to 10,000,000
* Round any number to any degree of accuracy
* Add and subtract negative integers
* Use tables to work with decimals (to 1dp)
* Multiply 4-digit whole numbers by 2-digit whole numbers
* Divide numbers up to 4-digits by a 2-digit whole numbers and recognise remainders
* Multiply and divide decimals by 10, 100 or 1000 in the head
* Multiply and divide a number with up to two decimal places by 1-digit and 2-digit whole numbers
* Work out simple % of whole numbers
* Use ratio to show the relative sizes of two quantities
* Add and subtract mixed numbers and fractions with different denominations
* Recall and use equivalences between fractions, decimals and percentages
* Solve linear missing number problems, including those involving decimals and fractions

**Ideas for games you can play around the house**

**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 this

♦ 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

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**Four in a line**

Draw a 6 x 7 grid.

Fill it with numbers under 100.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **54** | **47** | **21** | **19** | **5** | **38** | **58** |
| **9** | **25** | **67** | **56** | **49** | **13** | **17** |
| **39** | **41** | **6** | **1** | **75** | **28** | **36** |
| **90** | **14** | **50** | **81** | **23** | **43** | **2** |
| **14** | **50** | **81** | **23** | **43** | **4** | **55** |
| **37** | **45** | **29** | **72** | **34** | **7** | **11** |

♦ 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

**Tables**

Practise all the 12x tables. Say them forwards and backwards.

Ask your child questions like:

What are five threes?

What is 36 divided by 6?

Seven times nine?

How many eights in 48?

Make a times-table grid like this.

♦ Shade in all the tables facts that your child knows, probably the 1s,

2s, 3s, 4s, 5s and 10s

♦ Some facts appear twice, e.g. 7 x 3 and 3 x 7, so cross out one of each

♦ Are you surprised how few facts are left?

♦ There might only be 10 facts to learn. So take one fact a day and

make up a silly rhyme together to help your child to learn it,

e.g. *nine sevens are sixty-three, let's have lots of chips for tea!*



**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!

**Favourite food** ![C:\Users\i.cork\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\0SAMUKE9\MC900433864[1].png]()

♦ 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 she worked it out

**Three in a row**

For this game you need a calculator.

Draw a line like this:

 PK



♦ 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

**Flowers ![C:\Users\i.cork\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\10CZJOJE\MP900427789[1].jpg]()**

**♦ Take turns to think of a flower**

**♦ 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 flower, e.g. for a ROSE, R = 18, and E = 5**

**♦ Multiply the two numbers together, e.g. 18 x 5 = 90**

**♦ 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 animals, or countries.**

**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?

**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

**Card game ![C:\Users\i.cork\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\IB5YLEDX\MC900433900[1].png]()**

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.

♦ 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 four of their counters in a straight line wins!

|  |  |  |  |  |  |
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![C:\Users\i.cork\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\10CZJOJE\MP900438715[1].jpg]()**Doubles and trebles**![C:\Users\i.cork\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\10CZJOJE\MP900438715[1].jpg]()

♦ 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

***Journeys* ![C:\Users\i.cork\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\SO8UBMVP\MC900449062[1].jpg]()**

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 to some 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.

**One million pounds**

Assume you have £1 000 000 to spend or give away.

Plan with your child what to do with it, down to the last penny.

 

**What time is it please?**

**Can you tell the time?**

Whenever possible, ask your child to tell you the time to the nearest 5 minutes. Use a clock with hands as well as a digital watch or clock.

Also ask:

♦ What time will it be one hour from now?

♦ What time was it one hour ago?

Time your child doing various tasks, e.g.

♦ getting ready for school;

♦ tidying a bedroom;

♦ saying the 5 times, 10 times or 2 times table…

Ask your child to guess in advance how long they think an activity will take. Can they beat their time when they repeat it?

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Internet resources

Hit the Button

www.woodlands-junior.kent.sch.uk/maths

mathschamps.co.uk (Brick blaster)

www.topmarks.co.uk

www.mathszone.co.uk

www.bbc.co.uk/bitesize/ks2/maths

www.primaryinteractive.co.uk

Maths Magician (coolsciencelab.com/math\_magician)

MyMiniMaths – This is a fantastic resource which gives children the opportunity to practise all aspects of the curriculum for their year group. Every day 8 questions are given and the answers are available.



**Year 6 programme of study**

**By the end of the year children should:**

**Number - number and place value**

* 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

**Number - addition, subtraction, multiplication and division**

* 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 two-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

**Number - Fractions (including decimals and percentages)**

* 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, × = ]
* divide proper fractions by whole numbers [for example, ÷ 2 = ]
* associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, ]
* 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
* recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

**Ratio and proportion**

* 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

**Algebra**

* 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

**Measurement**

* 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]

**Geometry - properties of shapes**

* 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

**Geometry - position and direction**

* 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

**Statistics**

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