A Guide to Supporting Your Son at Home

Maths

Year 3

Merchant Taylors' Junior Boys' School

Introduction

The purpose of this guide is to help you support your child's progress in Mathematics.

Setting Out of Work

- Every piece of work should have a date, title and the textbook and page that is being used.
- Each title should be underlined with a pencil and a ruler.
- Exercise books should contain appropriate sized squares.
- Exercise book pages to be folded in half, where possible. Boys to work down left-hand side of page first, followed by right-hand side.
- Boys should leave at least one line between questions (to avoid errors).
- Boys should write answers to problems questions in the form of a sentence, underneath their working out.

Times Tables

The importance of your son learning his times tables cannot be stressed highly enough. Times tables are at the core of mathematics and if your son is not confident with them, this may hold back his progress in understanding and using new/revised concepts.

In Year 3, pupils need to know all of their times tables. Your son should practise his times tables frequently. This could be while having breakfast or in the car on the way to school.

Place Value

Place value dictates the value of each number. For example, when given the number 723 your son should know that this indicates:

> 7 hundreds   2 tens   3 units

Place value also indicates where numbers should be placed within a sum. This helps your son to line each of the numbers up in the correct columns and reduces the chance of errors.

Your son should be able to tell you the value of each of the numbers in the chart.

The Four Operations

Addition

The written method your son will be taught is the 'under the doorstep' method of carrying with addition, short multiplication and the final stage of long multiplication, eg.

```
A     23        B     47
    + 46            + 29
    ----            ----
      69              76
```

Subtraction

Your son will be taught the decomposition method of subtraction.

```
A     49        B     ⁶¹7̷2
    - 27            - 34
    ----            ----
      22              38
```

Multiplication

The boys in Year 3 will be taught the short multiplication method .

```
  Th H  T  U
     6  4  8  1
  x           9
  _____
     5  8  3  2  9  ← Answer line
     _____
        4  7
```

a) Multiply the 9 by the 1 in the unit's column. This equals 9 and is placed in the answer line, underneath the units

b) Multiply the 9 by the 8 in the ten's column. This equals 72. Place the 2 in the answer line, underneath the tens. The seven goes below the answer line, under the hundreds.

c) Multiply the 9 by the 4 in the hundred's column. This equals 36. We add on the carrying figure (7), to get 43. Place the 3 in the answer line, underneath the hundreds. The four goes below the answer line, under the thousands.

d) Multiply the 9 by the 6 in the thousands column. This equals 54. We add the carrying figure (4), to get 58. This is written in the answer line.

In Year 4 your son will be introduced to multiplication of a three or more digit number, by a two digit number (long multiplication).

To calculate 158 × 67:

First, multiply by 7 (units):

```
   158
 x 67
  1106
 _____
```

Then add a zero on the right-hand side of the next row. This is because we want to multiply by 60 (6 tens), which is the same as multiplying by 10 and by 6.

Now multiply by 6:

```
     158
   X 67
   _____
   1106
   9480
```

Now add your two rows together, and write your answer.

```
        158
    x   67
      1106
      9480
     10586          So the answer is 10586.
```

Division

- Division by a single digit divisor to be carried out as follows:

a) 7 goes into 9 once, remainder 2, so we put a '1' above the 9 and carry the 2.

b) 7 goes into 26 three times, remainder 5, so we put a '3' over the 6 and carry 5.

c) 7 goes into 54 seven times, remainder 5 so we put a '7' over the 4 and have a remainder of 5.

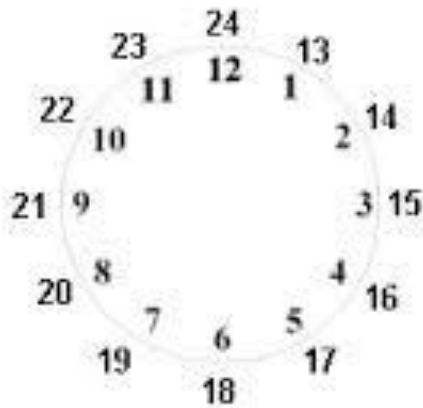**Therefore, 964 ÷ 7 = 137 r 5**

Problem Solving

Your son will often bring home work which requires him to solve problems. These steps are a guideline to help him to complete problems questions

A   Read the problem twice and find the question.
B   What are the facts?
C   Decide what to do (e.g. four operations).
D   Answer the question, including working out.
        (Write a story answer underneath your working out.)
E   Does your answer seem right?
        (Check it by putting it back into the problem.)

Time
12/24 Hour Clock

Your son should be able to convert 12 hour clock time to 24 hour clock time and vice versa.

Talk about and involve children in the situations in which you use Maths in everyday life.

Play games involving numbers and/or logic, such as card games, dominoes, darts, draughts, chess etc.

A good knowledge and quick recall of times tables is essential to children's mathematical progress. The children are taught up to 12 x 12. The target is for all children to know their tables by the end of year four. It is very important that children practice their times tables daily at home.

Play open-ended activities, e.g. The answer's 25, what's the question?
How can you use combinations of 3 and 6 to make different numbers? (Use each number as many times as you like with addition, subtraction, multiplication or division.)

Encourage your son to help you weigh and measure when cooking or converting a recipe.

Talk about time, e.g. How long is it until lunch time? The journey takes 2½ hours, when will we arrive?

Allow your child to handle amounts of money when shopping and encourage them to work out total costs, working out change, checking receipts.

Play 'guess my shape'. You think of shape. Your son asks questions to try to identify it but you can only answer 'yes' or 'no'.

Hunt for right angles around your home. Can your child spot angles that are bigger or smaller than a right angle?

Look for symmetrical objects. Help your child to paint or draw symmetrical pictures/patterns.

Practise measuring the lengths and heights of objects. Help your child use different rulers or tape measures correctly. Encourage them to estimate before measuring.

Choose some food items out of the cupboard. Try to put the objects in order of weight by feel alone. Then check by looking at the weights on the packets.

The Year 3 objectives are listed below. The Galore Park Text book which contains all the exercises that deliver the objectives below, can be accessed on Firefly.

Number – number and place value

Pupils should be taught to:
- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- compare and order numbers up to 1000
- identify, represent and estimate numbers using different representations
- read and write numbers up to 1000 in numerals and in words
- solve number problems and practical problems involving these ideas.

Number – addition and subtraction

Pupils should be taught to:
- 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 three digits, using formal written methods of columnar addition and subtraction
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Number – multiplication and division

Pupils should be taught to:
- recall and use multiplication and division facts for all times tables
- 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
- 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.

Number – fractions

Pupils should be taught to:
- 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, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
- compare and order unit fractions, and fractions with the same denominators
- solve problems that involve all of the above.

Measurement

Pupils should be taught to:
- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- measure the perimeter of simple 2-D shapes
- add and subtract amounts of money to give change, using both £ and p in practical contexts
- tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
- 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
- know the number of seconds in a minute and the number of days in each month, year and leap year
- compare durations of events [for example to calculate the time taken by particular events or tasks].

Geometry – properties of shapes

Pupils should be taught to:
- draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
- recognise angles as a property of shape or a description of a turn
- 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
- identify horizontal and vertical lines and pairs of perpendicular and parallel lines.

Statistics

Pupils should be taught to:
- interpret and present data using bar charts, pictograms and tables
- solve one-step and two-step questions [for example, 'How many more?' and 'How any fewer?'] using information presented in scaled bar charts and pictograms and tables.