

A Guide to Supporting Your Son at Home

Maths

Year 5



Introduction

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

Setting Out 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.

Pupils in Year 5 need know all of their times tables.

Place Value

Place value indicates 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

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.

$$\begin{array}{r} \text{A} \quad 23 \\ + 46 \\ \hline 69 \end{array} \qquad \begin{array}{r} \text{B} \quad 47 \\ + 29 \\ \hline 76 \\ \hline \end{array}$$

Subtraction

Your son will be taught the decomposition method of subtraction.

$$\begin{array}{r} \text{A} \quad 49 \\ - 27 \\ \hline 22 \end{array} \qquad \begin{array}{r} \text{B} \quad \overset{61}{\cancel{7}2} \\ - 34 \\ \hline 38 \end{array}$$

Multiplication

The boys will be taught the short multiplication method.

$$\begin{array}{r} \text{Th} \quad \text{H} \quad \text{T} \quad \text{U} \\ 6 \quad 4 \quad 8 \quad 1 \\ \times \qquad \qquad \qquad 9 \\ \hline 5 \quad 8 \quad 3 \quad 2 \quad 9 \quad \leftarrow \text{Answer line} \\ \hline 4 \quad 7 \end{array}$$

- 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.

Long Multiplication

To calculate 158×67 :

First, multiply by 7 (units):

$$\begin{array}{r} 158 \\ \times 67 \\ \hline 1106 \end{array}$$

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:

$$\begin{array}{r} 158 \\ \times 67 \\ \hline 1106 \\ \mathbf{9480} \end{array}$$

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

$$\begin{array}{r} 158 \\ \times 67 \\ \hline 1106 \\ 9480 \\ \hline 10586 \end{array} \quad \text{So the answer is } \mathbf{10586}.$$

Division

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

$$\begin{array}{r} 137 \text{ r}5 \\ 7 \overline{)964} \end{array}$$

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, $964 \div 7 = 137 \text{ r} 5$

Dividing by a two digit number

EXAMPLE – $24 \overline{)786}$

Step 1 Not enough hundreds. (Only 7)

$$24 \overline{)786}$$

Step 2 Think of 7 hundreds and 8 tens as 78 tens.

Divide ($78 \div 24 = 3$)

Subtract 3 lots of 24 ($3 \times 24 = 72$)

$$\begin{array}{r} 3 \\ 24 \overline{)786} \\ - \underline{720} \\ 66 \end{array}$$

Remember: these are 72 tens
tens left over

Step 3 Add the units to the left-over tens

$$\begin{array}{r} 3 \\ 24 \overline{)786} \\ - \underline{720} \\ 66 \end{array}$$

Step 4 Think of the 6 tens and 6 units as 66 units

Divide ($66 \div 24 = 2$)

Subtract 2 lots of 24 ($2 \times 24 = 48$)

$$\begin{array}{r} 32 \\ 24 \overline{)786} \\ - \underline{720} \\ 66 \end{array}$$

$$\begin{array}{r} 66 \\ - 48 \\ \hline 18 \end{array}$$

Step 5 Put the remaining units with the answer

$$\begin{array}{r} \underline{32} \text{ R18} \\ 24 \text{) } 786 \\ - \underline{720} \\ \hline 66 \\ - \underline{48} \\ \hline 18 \end{array}$$

Problem Solving

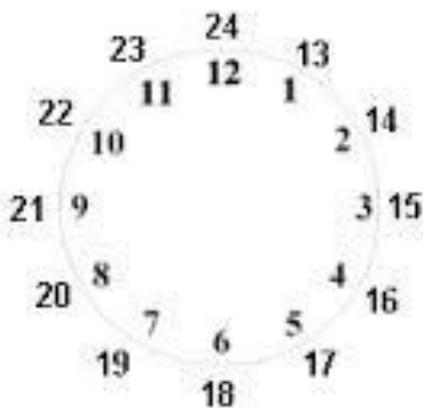
Your son will often bring home work which requires him to solve problems. These steps are a guideline to help him to complete problems questions

- 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.)
- 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.



The Year 5 objectives are listed below. The Galore Park Text book which contains all exercises that deliver the objectives below, can be accessed on Firefly.

Number – number and place value

- Pupils should be taught to:
- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above
- read Roman numerals to 1000 (M) and recognise years written in Roman Numerals.

Number – addition and subtraction

Pupils should be taught to:

- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Number – multiplication and division

Pupils should be taught to:

- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- 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
- multiply and divide numbers mentally drawing upon known facts
- 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
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Number – fractions (including decimals and percentages)

Pupils should be taught to:

- compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $5\frac{2}{5}$]
- $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$
- add and subtract fractions with the same denominator and denominators that are multiples of the same number
- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- round decimals with two decimal places to the nearest whole number and to one decimal place
- read, write, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places
- 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
- solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

Measurement

Pupils should be taught to:

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
- estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Geometry – properties of shapes

Pupils should be taught to:

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (o)
- identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line
- use the properties of rectangles to deduce related facts and find missing lengths and angles
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Geometry – position and direction

Pupils should be taught to:

- 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.

Statistics

Pupils should be taught to:

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables.