Wathematics at Grayshott

Year 5 Objectives

Place Value

- 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.
- through 0.
- Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000. ٠
- ٠ Solve number problems and practical problems that involve all of the above.
- Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.

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 mentally with increasingly large numbers. •
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ٠
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ٠

Number - multiplication and division

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 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 1,000. •
- Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³). ٠
- 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 under-• standing the meaning of the equals sign.
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Number - fractions

- Compare and order fractions whose denominators are all multiples of the same number.
- •
- 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = \frac{1}{5} = \frac{1}{5}$].

- •
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.



Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.

Add and subtract fractions with the same denominator, and denominators that are multiples of the same number.

Year 5- Maths



The following games can be played at home with minimal resources to keep those important number facts fresh in your child's

mind!



Ping Pong

This is a great game for learning number bonds or number facts, for example,

5x table. Start off by saying 'ping' and your child replies with 'pong.' keep repeating this in order to build up a rhythm and then replace the 'ping' with a number to multiply by 5, e.g. 6. Once you say 6, your child should reply with 30 because 6 x 5 is 30. Then start again with ping, before replacing it with another number.

If this is the answer.....

.....what is the question? Give children a number and say 'This is my answer, what is the question?' For example, you could say 'my answer is 0.1' Your child will need to think of potential questions e.g. $1 \div 10 = 0.1$

Interactive Games

www.topmarks.co.uk - This website has a whole range of games for your child to play which are suitable for both tablet and desktop computers.

End of year Maths Expectations for Year 5

Sobren at the Centre of a Learning

This booklet contains:

National Curriculum objectives for year 5 children in maths;

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- Important number facts that children need to know by the of year 5;
- Hints and tips for helping your child at home.



Hints and Tips for helping your child with maths at home:

Around the house

 Talk about numbers in sport. How many points does your team need to avoid relegation? How many goals/ tries/conversions/points/runs has your team scored this season?

• Cooking. Measure ingredients and set the timer together. Talk about fractions in cooking, for example ask them how many quarter cups make a cup.

• Talk about proportions when you make a cup of tea or squash as them how much milk or how much water they're using.

• Talk about the shape and size of objects. Use the

internet to find interesting facts like tallest and shortest people, or biggest and smallest buildings etc.

• Talk about time. For example get them to work out what time you need to leave the house to get to school on time.

• Look for maths on TV, newspapers, magazines and talk about it together.

• Use newspapers. Talk to your child about percentages in special offers, the probability in the weather reports, the length of TV shows and compare the salaries in the jobs section.

• Solve maths problems at home. For example 'we have 3 pizzas cut into quarters, if we eat 10 quarters, how many will be left?'

• Talk about shape, size and quantity. Use the internet to find interesting size facts like most and least populated cities, highest mountains or deepest valleys etc.

Taken from www.familymathstoolkit.org.uk

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Year 5- Number Facts

In order to meet age related expectations, your child will need to know the following number facts:

Measure

$1 \text{mm} = 1/_{10} \text{cm}$

- $1 \text{mm} = 1/_{1000} \text{m}$
- 1 kg = 2.20 lbs
- 1 | = 1.8 pints
- 1m = 39.4 inches
- 120 minutes = 2 hours
- 90 minutes = $1\frac{1}{2}$ hours

Fractions

- $1 \div 100 = 1/_{100} = 0.01$
- $2 \div 100 = \frac{2}{100} = 0.02$
- $3 \div 100 = 3/_{100} = 0.03$
- $4 \div 100 = 4/_{100} = 0.04$
- $5 \div 100 = \frac{5}{100} = 0.05$
- $6 \div 100 = 6/_{100} = 0.06$
- $7 \div 100 = 7/_{100} = 0.07$
- $8 \div 100 = \frac{8}{100} = 0.08$
- $9 \div 100 = \frac{9}{100} = 0.09$
- $10 \div 100 = \frac{10}{100} = \frac{1}{10} = 0.1$
- $10\% = 0.1 = \frac{1}{10} = \frac{10}{100} = \frac{100}{1000}$
- $50\% = 0.5 = \frac{1}{2} = \frac{5}{10} = \frac{50}{100}$
- 25% = 0.25 = 1/4 = 4/10 = 40/100
- 75% = 0.75 = 3/4 = 75/100
- $20\% = 0.2 = \frac{1}{5} = \frac{2}{10} = \frac{20}{100}$
- $40\% = 0.4 = \frac{4}{10} = \frac{40}{100}$

Multiplication and Division

To be able to find related facts from knowing the 12 x 12 multiplication and division facts. For example.....

 $12 \times 5 = 60 \ 60 \div 5 = 12$

 $1.2 \times 5 = 6.06 \div 5 = 1.2$

 $5 \times 7 = 355 \times 0.7 = 3.5$

 $5 \times 0.07 = 0.35$

- Recognise all square numbers to 12 x 12.
- Recognise all prime numbers to 19
- 10,000 ÷ 2 = 5000
- $10,000 \div 4 = 2500$
- $10,000 \div 5 = 2000$
- 10.000 ÷ 10 = 1000
 - $10.000 \div 100 = 100$

Place Value

- To know complements to 360.
- Know complements to 180
- Recognise multiples of 90.
- Know that the angles in a triangle total 180 degrees
- Know that the angles in a quadrilateral total 360 degrees
- Know that the angles of a straight line total 180 degrees

 $360 \div 4 = 90 \frac{1}{4} \text{ of } 360 = 90$

- 360 ÷ 2 = 180 ½ of 360 = 180
- $\frac{3}{4}$ of 360 = 270

Mathematics at Grayshott

Year 5 Objectives (continued)

Fractions (continued)

- Read and write decimal numbers as fractions [for example, 0.71 = $\frac{100}{100}$].
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
- Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place.
- Read, write, order and compare numbers with up to 3 decimal places.
- Solve problems involving number up to 3 decimal places.
- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write ٠ percentages as a fraction with denominator 100, and as a decimal fraction.
- fractions with a denominator of a multiple of 10 or 25.

Measurement

- 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), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes.
- Estimate volume [for example, using 1 cm³ 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

- 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 (°) ٠
- Identify angles at a point and 1 whole turn (total 360°)
- Identify angles at a point on a straight line and half a turn (total 180°) and other multiples of 90°. 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.
- ٠

Geometry - position and direction

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

- Solve comparison, sum and difference problems using information presented in a line graph. ٠ • Complete, read and interpret information in tables, including timetables.



- 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 data and the second secon