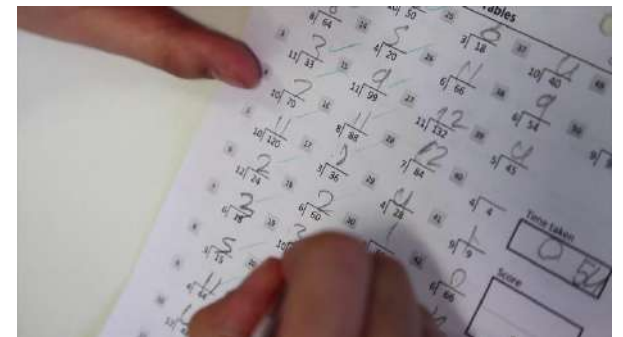




Tilstock⁺
Part of the Marches Academy Trust 

What does your child need to know in Mathematics?

A parents / carers guide to age related expectations in mathematics



The National Curriculum

The National Curriculum has 3 overarching aims that when combined are designed to increase children's mathematical proficiency.

Fluency

- Children must know the fundamentals of maths.
- Children must frequently practice the fundamentals of maths.
- Children must tackle increasingly harder problems using the fundamentals of maths.
- Children must be able to rapidly recall the fundamentals of maths with accuracy.

Reasoning

- Children must be able to follow a line of enquiry.
- Children must be able to use a conjecture (prediction) as part of their mathematics.
- Children must be able to generalise about their mathematics ("I know that if I do this then this will happen so if I do this, then this should happen").
- Children must be able to justify and prove using mathematical language.

Problem Solving

- Children must be able to apply their mathematical skills.
- Children must be able to solve routine and non-routine mathematical problems.
- Children need to become increasingly sophisticated in terms of formal methods used to solve problems.
- Children need to be able to break a complex problem down into a series of smaller steps so it can be solved.



NUMBER

- Count to and across 100 from zero or any given number.
- Count read and write numbers to 100.
- Count in multiples of 2, 5, and 10.
- Say a number 1 more or 1 less than a given number.
- Write the numbers 1-20 in words.
- Be able to show their calculations on a blank number line.

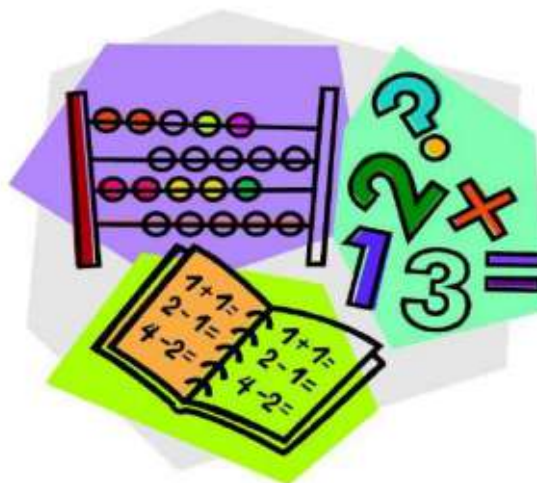


FRACTIONS



- Be able to recognise, find and name half as part of a shape or quantity.
- Recognise, find and name one quarter as a part of a shape or quantity.

Year 1



ADDITION AND SUBTRACTION



- To be able to use the notation of +, - and = in a number sentence.
- Add and subtract 1-digit or 2-digit numbers to 20.
- Solve missing number problems $7 = _ - 9$.

MULTIPLY AND DIVIDE



- To be able to divide into groups using objects.
- To be able to multiply using objects.
- To show their working in pictures.



MEASURES

- Compare describe and solve problems with; **length and height** (bigger/smaller, longer/shorter, double/half), **mass/weight** (heavier/lighter, heavier than/lighter than), **capacity/volume** (full/empty, more left/less left, half empty, half full, quarter), **time** (quicker, slower, earlier, later)
- Measure and begin to record; lengths and heights, mass/weight, capacity/volume, time (hours/minutes/seconds)
- Recognise and know the value of different coins and notes.
- Sequence events using language (first, later, before, after, today, tomorrow, morning, afternoon, evening)



MEASURES

- Recognise and use the language relating to days, months and years.
- Tell the time to the hour and half past the hour and be able to draw hands on a clock face to show this.



POSITION AND DIRECTION

- Describe position, direction and movement.
- Know left and right.
- Be able to use compass point North, South, East and West.
- Be able to show a half turn, quarter turn, three quarter turn and a full rotation.

Year 1



SHAPE

- Recognise and name common 2-d shapes.
- Recognise and name common 3-d shapes.





NUMBER

- Count in steps of 2, 3, 5 from zero and in 10's from any number forwards and backwards.
- Recognise the place value of each digit in a 2-digit number (tens and ones)
- Identify, estimate and represent different number on scales and number lines.
- Compare numbers to 100 using $<$, $>$ and $=$.
- Read and write numbers to at least 100 in words.
- Use place value and number facts to solve problems.



FRACTIONS



- Recognise, find and name fractions $1/3$, $1/4$, $2/4$ and $3/4$ of a length, shape, set of objects or a quantity.
- Find simple fractions of an amount $1/2$ of $6 = 3$.
- Recognise equivalent fractions for $1/2$ or $1/4$.

Year 2



MULTIPLY AND DIVIDE



- Be able to multiply and divide mentally for $\times 2$, $\times 5$ and $\times 10$.
- Be able to use a written method to \times and \div and record their working in a number sentence.
- Know that multiplication can be done in any order but division cannot.
- To be able to use efficient written methods and mental methods to solve problems.

ADDITION AND SUBTRACTION



- Solve problems using written methods (number lines).
- Solve problems mentally.
- Know all bonds to 20 for $+$ and $-$.
- Use mental maths and knowledge of bonds to find pairs that $= 100$.
- Be able to solve; $TU \pm U$, $TU \pm$ a 10's number, $TU \pm TU$, $U \pm U$ $\pm U$. Using written methods and mental maths.
- Recognise and use the fact that $+$ is the opposite of $-$ and vice versa.





MEASURES

- Be able to measure length/height in m/cm.
- Be able to weigh mass in kg/g.
- Be able to measure temperature in °c.
- Be able to measure capacity in l/ml.
- Be able to use and read rulers, scales, thermometers, and measuring vessels.
- Compare and order lengths, mass and volume using $<$, $>$ and $=$.
- Recognise and use £ and p.
- Combine £ and p to make a given amount.
- Know different ways to combine coins to make a total.
- Be able to solve problems when adding or subtracting money.



MEASURES

- Be able to work out and give change.
- Compare and sequence time.
- Tell time in five minute intervals and show this by drawing hands on a clock.



POSITION AND DIRECTION

- Order and arrange combinations of mathematical objects in patterns and sequences.
- Use mathematical vocabulary to describe position and movement.
- Be able to rotate through all 4 quarters.

Year 2



SHAPE

- Identify and describe the properties of 2-d shapes.
- Identify and describe the properties of 3-d shapes.
- Identify the faces on a 3-d shape.
- Compare and sort common shapes.



STATISTICS

- Make simple pictograms, tally charts, block charts, and tables.
- Ask and answer questions by sorting into categories and counting.
- Answer questions by interpreting data in categories.



NUMBER

- Count from 0 in multiples of 4, 8, 50 and 100.
- Find 10/100 more or less than a given number.
- Know the place value of each digit in a 3-digit number.
- Compare and order numbers to 1000.
- Use a variety of skills to solve problems/ calculations.
- Read and write numbers up to 1000 in words.
- Solve number problems and practical problems using the above skills.



FRACTIONS



- Be able to count up and down in tenths.
- Recognise that tenths are made by splitting an object or amount into 10 equal parts.
- Recognise, find and write fractions of a shape.
- Recognise, find and write fractions of a number.
- Order and compare fractions and find equal fractions.
- Add and subtract fractions with the same denominator.

Year 3



MULTIPLY AND DIVIDE



- Be able to multiply and divide using the x3, x4 and x8 tables.
- Be able to solve multiplication and division calculations using tables they know both mentally and in a written form - including TU by U.
- Solve missing number calculations.
- Use tables they know to scale up or down.
- Begin to use n and m notation to replace numbers in a calculation.

ADDITION AND SUBTRACTION



- Mentally add and subtract to solve; 3-digit +/- ones, 3-digit +/- tens, 3-digit +/- hundreds.
- Use formal columns to add and subtract numbers with up to 3-digits.
- Be able to use the inverse operation to check an answer.
- Solve problems, including missing number problems, using their skill set.
E.g $397 - \underline{\quad} = 178$ or $189 = \underline{\quad} + 73$ or $\underline{\quad} + 476 = 982$





MEASURES

- Measure, compare add and subtract lengths in m/cm/mm.
- Measure, compare add and subtract mass in kg/g
- .Measure, compare add and subtract capacity in l/ml.
- Measure the perimeter of 2-d shapes.
- Add and subtract money and give change using £ and p in practical contexts.
- Tell and write the time on an analogue clock and on digital 12hr, 24hr clocks and use **Roman numerals** on an analogue clock.
- Be able to use the vocabulary o'clock, am/pm, mid-day, noon, midnight to compare time.



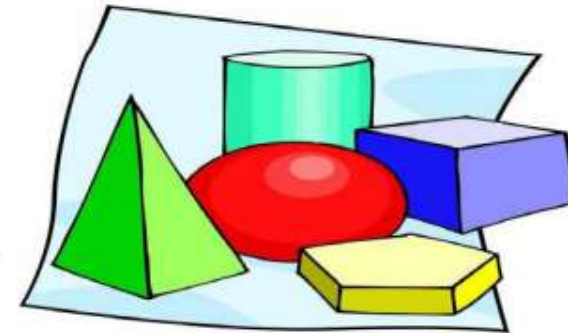
MEASURES

- Know the amount of seconds in a minute.
- Know how many days are in each month, each year and each leap year.
- Be able to calculate the duration of an event in hours, seconds, days, weeks etc.



SHAPE

- Know what a parallel line is.
- Identify 2 perpendicular lines.



Year 3



SHAPE

- Draw 2-d shapes accurately.
- Make models of 3-d shapes.
- Recognise angles as a property of a shape.
- Recognise horizontal and vertical lines.
- Identify right angles. And use them to make half and three-quarter turns.



STATISTICS

- Interpret data from bar charts, pictograms and tables.
- construct data into bar charts, pictograms and tables.
- Solve problems based upon bar charts, pictograms or tables - **How many more?, How many fewer?**