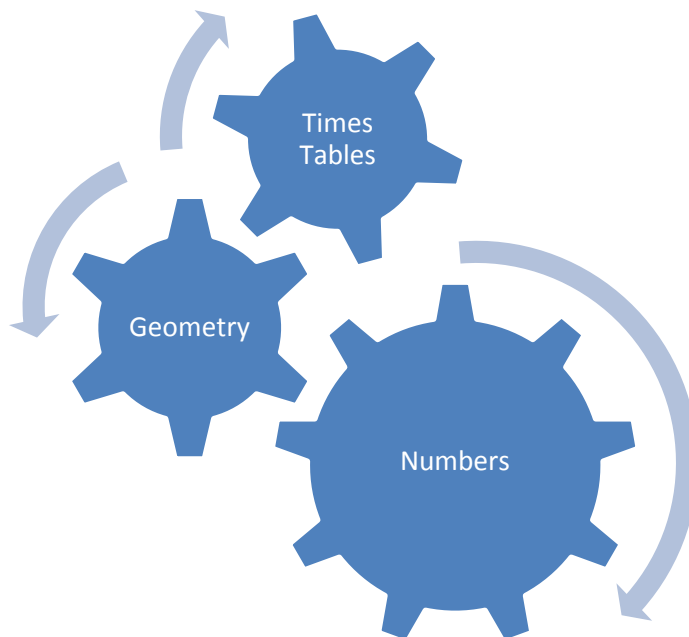# Cherry Tree Primary

Mathematics

Times Tables

Geometry

Numbers

Year Five
2015/16

Year 5 National Curriculum Statutory Requirements

Numbers

Number: 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

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 2/5 + 4/5 = 6/5 OR 1 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 = 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 1/2, 1/4, 1/5, 2/5 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 (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

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

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 (˚)
- Identify:
  - Angles at a point and one whole turn (total 360˚)
  - Angles at a point on a straight line and ½ a turn (total 180˚)
  - 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

Statistics (Data Handling)

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

Times Tables

It is now a National Curriculum requirement that times tables up to 12 x 12 are learnt and taught by the time a child reaches the end of year 4. Much of the knowledge in Year 5 relies on number facts being easily recalled. For example, to find common factors or to make simple conversions, knowledge of multiplication tables is essential. In year 5 and 6 we ask that children practise all the times tables and their related division facts. There are a variety of websites and apps to support the consolidation of times tables. Here are just a few of them:

Websites
http://resources.woodlands-junior.kent.sch.uk/maths/timestable/
http://www.topmarks.co.uk/maths-games/5-7-years/times-tables
http://www.maths-games.org/times-tables-games.html

APPs
Squeeble Times Tables 2
Tap Times Tables
Times Tables Personal Assistant

Decimal number plates

♦ Choose 2 digits from a car registration plate.

FD56 UPN

♦ Make the smallest and largest numbers you can, each with 1 decimal place, e.g. 5.6 and 6.5.
♦ Now find the difference between the two decimal numbers, e.g. 6.5 – 5.6 = 0.9.
♦ Whoever makes the biggest difference scores 10 points.
♦ The person with the most points wins.

Play the game again, but this time score 10 points for the smallest difference, or 10 points for the biggest total.(If you add the numbers)

Guess my number

♦ Choose a number between 0 and 1 with one decimal place, e.g. 0.6.
♦ Challenge your child to ask you questions to guess your number. You may only answer 'Yes' or 'No'. For example, he could ask questions like 'Is it less than a half?'
♦ See if he can guess your number in fewer than 5 questions.
♦ Now let your child choose a mystery number for you to guess.

Extend the game by choosing a number with one decimal place between 1 and 10, e.g. 3.6. You may need more questions

Battleships

♦ Draw two grids like this

```
 1
 2
 3
 4
 5
 6
 7
 8
 9
10
   A B C D E F G H I J
```
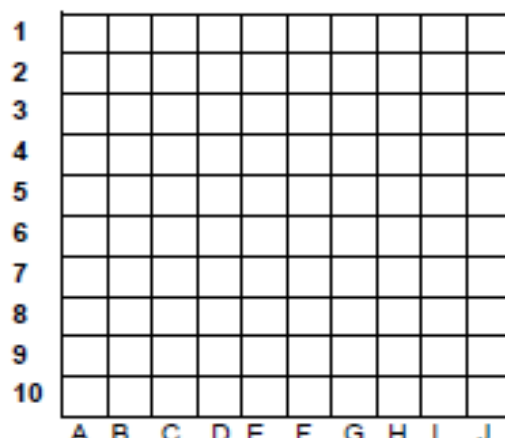
♦ Choose ships of various lengths (use between 2 and 4 squares)
♦ Hide your grid from your partner
♦ Take it in turns to guess the co-ordinates of your opponents ships.
♦ Respond with "hit" or "miss"
♦ Try to get as close as possible to 555
♦ The winner is the person to sink all their opponents ships

How much?

♦ While shopping, point out an item costing less than £1.
♦ Ask your child to work out in their head the cost of 3 items.
♦ Ask them to guess first.
  See how close they come.
♦ If you see any items labelled, for example, '2 for £3.50', ask them to work out the cost of 1 item for you, and to explain how they got the answer.

Finding areas and perimeters

> *Perimeter = distance around the edge of a shape*
> *Area of a rectangle = length x breadth (width)*

- Collect 5 or 6 used envelopes of different sizes.
- Ask your child to estimate the perimeter of each one to the nearest centimetre. Write the estimate on the back.
- Now measure. Write the estimate next to the measurement.
- How close did your child get?
- Now choose 5 or 6 adverts from newspapers or magazines.

You could do something similar using an old newspaper, e.g.

- Ask your child to estimate the area of each advert to the nearest centimetre squared – write these down.
- Now measure and calculate
- How close did your child get

Telephone challenges

- Challenge your child to find numbers in the telephone directory where the digits add up to 42.
- Find as many as possible in 10 minutes.
   On another day, see if they can beat their previous total

Telephone: 01264 738 281

Line it up

You need a ruler marked in centimetres and millimetres.

♦ Use the ruler to draw 10 different straight lines on a piece of paper.

♦ Ask your child to estimate the length of each line and write the estimate on the line.

♦ Now give them the ruler and ask them to measure each line to the nearest millimetre.

♦ Ask them to write the measurement next to the estimate, and work out the difference.

♦ A difference of 5 millimetres or less scores 10 points. A difference of 1 centimetre or less scores 5 points.

♦ How close to 100 points can she get?

My estimate 8.5 cm

Dicey subtractions

♦ Take turns to roll a dice twice.

♦ Fill in the missing boxes.

$$400\square - 399\square$$
e.g. $4002 - 3994$

♦ Count on from the smaller to the larger number, e.g *3995, 3996, 3997, 3998, 3999, 4000, 4001, 4002.*

♦ You counted on 8, so you score 8 points.

♦ Keep a running total of your score   .

♦ The first to get 50 or more points wins.

Dicey division

For this game you need a 1–100 board
(a snakes and ladders board will do),
a dice and 20 coins or counters.

♦ Take turns.

♦ Choose a two-digit number. Roll a dice. If you roll 1, roll again.

♦ If your two-digit number divides exactly by the dice number, put a coin on your chosen two-digit number. Otherwise, miss that turn.

♦ The first to get 10 counters on the board wins.