# KS4 Mathematics Long Term Plan – revised for September 2022

| | Autumn | | Spring | | Summer | |
|---|---|---|---|---|---|---|
| Core number work | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts |
| Yr 1 Primary focus skill development in addition to number | Measurement-value<br>Statistics/seeing the costs | Measurement-value<br>Geometry-properties of shapes stacking and packing<br>Data & Statistics/sales & promotions | Geometry-properties of shapes<br>Measurement – spatial<br>Measurement-time Geometry-position & direction | Measurement-value<br>Geometry-properties of shapes<br>Measurement - spatial | Measurement-time<br>Geometry-position & direction<br><br>Data & Statistics & timetables | Measurement – spatial<br>Geometry-properties of shapes<br>Geometry-position & direction<br>Measurement-value |
| Year 1 Application Themes | Personal finance – paying the bills | Maths in Retail | Cooking and cleaning | Maths in Catering and hospitality | Time & Travel Events & travelling to them | Maths in Valeting |
| Core number work | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts | Number system<br>Number Sets +-<br>Number x/<br>Number parts |
| Yr 2 Primary focus skill development in addition to number | Measurement – spatial<br>Geometry-properties of shapes<br>Geometry-position & | Measurement – spatial<br>Geometry-properties of shapes<br>Measurement-value | Measurement-value<br>Statistics/seeing the costs | Statistics | Measurement – spatial<br>Geometry-properties of shapes<br>Geometry-position & | Measurement-time<br>Geometry-position & direction<br><br>Data & Statistics |

| | | direction | | | | direction | & timetables |
|---|---|---|---|---|---|---|---|
| Yr 2 Application Themes | Crafts and hobbies | Maths in Manufacturing | Shopping & Surviving the sales | Maths in the news | Cleaning the home | Time & Travel Events & travelling to them |
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# Year 1 National Curriculum* – with developmental core skills

## Programming
## Key stage 1

*Increasingly precise instructions and sequences – in life and on a computer – predicting and planning for cause, process, effect*

☐ understand what algorithms are; how they are implemented as programs on digital
devices; and that programs execute by following precise and unambiguous instructions

☐ create and debug simple programs

☐ use logical reasoning to predict the behaviour of simple programs

## Mathematics
**Number system – number and place value**
**Number rhymes, anticipation and sequences**
**1:1 correspondence**
**Cardinal number**
**A lot /few**
**More / less**
**Number Steps (+/- 1)**
**Ordinal numbers – first, second, last**

- ❖ **AVOID THE NUMERAL TRAP! (numerals are not numbers in themselves) ' –**
- ❖ **AVOID THE NUMBER LINE TRAP! (steps are more accessible)**

☐ count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number

☐ count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens

☐ given a number, identify one more and one less

☐ identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

☐ read and write numbers from 1 to 20 in numerals and words.

**Number sets – addition and subtraction**

**Creation of sets – Sorting, subsets (eg fruit= apples and oranges / boys & girls = children)**

**Conservation of set – pairs, twoness of two etc, numicon,**

**Sequences – cause and effect - before and after change**

**Number bonds to 5 and then 10**

**AVOID THE FALSE ADDITION TRAP! - counting 3 times is not addition – addition is to a conserved set**

☐ read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

☐ represent and use number bonds and related subtraction facts within 20

☐ add and subtract one-digit and two-digit numbers to 20, including zero

☐ solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = – 9$.

**Number x/ – multiplication and division**

**Aggregating repeated groups of the same number (eg two eyes per face, 2 wheels per bike….)**

**Repeated patterns**

**Sharing**

☐ solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

**Number parts – fractions**

**Parts of the whole**

**Sharing**

☐ recognise, find and name a half as one of two equal parts of an object, shape or quantity

☐ recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.


**Measurement – spatial**

**Opposites and quantitative comparatives - Big/little, Large/small**

**Objects in combination & in space (stacking, nesting/fitting, building, rolling) – prepositions**

**Ordination by size, weight, capacity, time (& volume, brightness, roughness, smelliness)**

**Sequencing by cause and effect of one object to another**

☐ compare, describe and solve practical problems for:

- ☐ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
- ☐ mass/weight [for example, heavy/light, heavier than, lighter than]
- ☐ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]

☐ measure and begin to record the following:

- ☐ lengths and heights
- ☐ mass/weight
- ☐ capacity and volume


**Measurement – time**

**Opposites and quantitative comparatives – long / short time, quicker, longer**

**Ordination by, time**

**Sequencing by cause and effect**

**Sequencing by time in the day**

**Days, dates and longer time periods- week, month, season, year**

**AVOID THE TIME TRAP! – only use numerical time for sets that the pupil can fully and consistently conserve as time is the most abstract context of all**

☐ compare, describe and solve practical problems for:

- ☐ time [for example, quicker, slower, earlier, later]

☐ measure and begin to record the following:

- ☐ time (hours, minutes, seconds)

☐ sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]

☐ recognise and use language relating to dates, including days of the week, weeks, months and years

☐ tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

**Measurement – value**

**Opposites and quantitative comparatives – valuable, worthless**

**Ordination by big/little value**

**Exchange and value (eg looking after things, exchanging, saving (similar to reward chart), 'big money' = pounds, 'little money' = pennies)**

**AVOID THE MONEY TRAP! – only use money numerically for sets that the pupil can fully and consistently conserve as money is the most abstract context of all**

☐ recognise and know the value of different denominations of coins and notes

**Geometry – properties of shapes**

**objects in combination & in space (stacking, nesting/fitting, building, rolling) – prepositions**

**vocab of shape – side, straight, curve, point, corner, angle, height/high, width/wide/narrow, thin, deep,**

☐ recognise and name common 2-D and 3-D shapes, including:

☐ 2-D shapes [for example, rectangles (including squares), circles and triangles]

☐ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].

☐ *describe position,*

**Geometry – position and direction**

**direction and movement, including whole, half, quarter (sideways)**

**Repeating patterns**

☐ direction and movement, including whole, half, quarter and threequarter turns.

**Cultural Capital**
Data & **Statistics**
<span style="color:red">**Sorting**</span>
<span style="color:red">**Counting: Number order, anticipation and sequences, 1:1 correspondence, Cardinal number**</span>
<span style="color:red">**Scoring and tallying (physical stacking tally)**</span>
☐ interpret and construct simple pictograms, tally charts, block diagrams and simple tables
☐ ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
☐ ask and answer questions about totalling and comparing categorical data.

*Pupils working above Year 1 expectations **must** have targets appropriate to their National Curriculum year group level