St Anne's C of E Primary School Curriculum Plan

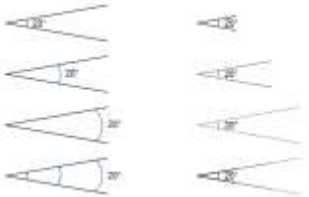**Subject: Maths** | **Year: 5** | **Term: Summer**

Unit: Properties of shape

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
2-D shape **Polygon**- (from Greek "many-angled) **Quadrilateral** - (Latin *quadrilaterus*, from *quadri*- "four" and *latus* "the side, flank of humans or animals, lateral surface,") **Regular, irregular** **Vertex, vertices** **sides** **point, pointed** **Triangles** **Isosceles-** (Greek *isoskelēs*, from *isos* 'equal' + *skelos* 'leg'.) **Scalene** - (Greek *skalēnos* 'unequal'; related to *skolios* 'bent'.) **Equilateral**- (Latin *aequilateralis*, from *aequilaterus* 'equal-sided')	• angles are measured in degrees (°) • a complete turn is 360 dgrees. • half a turn is 180 degrees. • a quarter turn (right-angle) is 90 degrees. • a reflex angle is greater than 180 degrees but less than 360 degrees. • angles on a straight line add to 180 degrees. • the position of the arc indicating an angle does not affect the size of the angle, which is determined by the amount of turn between the two lines. • the length of the lines does not affect the size of the angle between them.	• how to read both inside and outside scales on a protrator. • two right angles are equivalent to a straight line. • a straight line is half of a turn. • when they should measure an angle and when they can calculate the size of an angle from given facts.	• use their knowledge of right-angles to estimate the size of acute and obtuse angles. • use a protractor to draw angles of a given size. • calculate missing angles on a straight line. • calculate missing angles around a point. • identify 3D shapes from their 2D nets.

Quadrilaterals
Square
Rectangle
Rhombus
Parallelogram
Trapezium

3-D shape
Face
Edge
vertex, vertices
apex
prism
net

Angle
Right-angle
Acute
Obtuse
Reflex
Clockwise
Anti-clockwise
protractor

Line
Horizontal
Vertical
Parallel
Perpendicular

- "regular" means all the sides and angles of a shape are equal.

Stem Sentences

"An acute angle is smaller than a right angle."
"An obtuse angle is larger than a right angle but less than the angle on a straight line."
"A reflex angle is larger than the angle on a straight line, but less than the angle for a full turn."
"An acute angle is less than 90°."
"An obtuse angle is greater than 90° but less than 180°." "A reflex angle is greater than 180° but less than 360°."

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Subject: Maths **Year: 5** **Term: Summer**

Unit: Position and direction

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
Coordinates **Axes** **X axis** **Y axis** **Origin (0,0)** **Quadrant** **First quadrant** **clockwise, anticlockwise** **compass point** **north, south, east, west, N, S, E, W north-east, north-west,**	• the point (0,0) is know as the origin. • to find where a reflected point is located, you can use a mirror or count how far the point is away from the mirror line. • when translating shapes, you should focus on one vertex at a time. • when translating shapes, you move along the X axis first (left/right) and then along the Y axis (up/down) • the difference between reflection and translation.	• the first number in a coordinate represents the X coordinate and the second number represents the Y coordinate. • the coordinate is fixed (does not move) wheras a point can be plotted at different coordinates, so it can be moved. • symmetry is the quality of being made up of exactly similar parts facing each other or around an axis. • when you reflect an object, you have a mirror image.	• plot points on a coordinate grid. • identify points on a grid and give the coordinates. • explain what translation means. • translate a shape accurately. • record the vertices of a shape after a translation and write the coordinates correctly. • identify symmetrical shapes. • draw a reflection when given a shape and a mirror line.

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| south-east, south-west, NE, NW, SE, SW

horizontal, vertical, diagonal

translate, translation

movement

whole turn, half turn, quarter turn, three-quarter turn

rotate, rotation

angle, is a greater/smaller angle than degree

right angle

acute angle

obtuse angle

Symmetry, symmetrical, line of symmetry

reflection

straight line | | • when a shape is translated, the shape itself does not change size nor orientation.
• the effect of the translation on the X coordinate and Y coordinate. For example, how does a translation of 3 up affect the X and the Y coordinates? (The X coordinate has not changed)
• different mirror lines produce different reflections. | |

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Subject: Maths	Year: 5	Term: Spring/ Summer

Unit: Decimals

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
tenths **hundredths** **thousandths** **decimal** **decimal fraction** **decimal point** **decimal place** **decimal equivalent**	• what the decimal point means • tenths are worth more than hundredths and hundredths are worth more than thousandths. • 1 tenth = 1/10 = 0.1 • there are ten 0.1 in 1. • 1 is 10 times as much as 0.1. • 1 hundredth = 1/100 = 0.01 there are ten 0.01 in 0.1. • 0.1 is 10 times as much as 0.01 • 1 thousandth = 1/1000=0.001 • there are ten 0.001 in 0.01, one hundred 0.001 in 0.1 and one thousand 0.001 in 1. • to look at the digit in the first decimal place when identifying which number is bigger • • **Stem Sentences**	• the place value of each digit in a number with 2 decimal places • the relative size of place-value blocks to identify the different values of decimal numbers. • how to round a decimal to the nearest whole number. • how to round a decimal to the nearest tenth. • the process of exchanging whole numbers into tenths and tenths into hundredths to subtract decimals efficiently. • the links with number bonds to 10, 100 and 1000 when adding decimals. • the importance of lining up the decimal point in order to ensure the correct place value when	• show decimal numbers using concrete representations. • rename tenths, hundredths and thousandths. • partition decimal numbers in different ways. • convert fractions into decimals and vice versa. • compare and order decimal numbers with up to three decimal places. • place decimal numbers on a number line. • use concrete representations to add and subtract decimal numbers. • use their understanding of column addition when adding and subtracting decimal numbers.

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1 is 10 times the size of one-tenth. One-tenth is 10 times the size of one-hundredth. 1 is 100 times the size of one-hundredth. 10 tenths is equal to 1 one. 10 hundredths is equal to 1 tenth. 100 hundredths is equal to 1 one. 18 hundredths is equal to 10 hundredths and 8 more hundredths. 10 hundredths is equal to 1 tenth. So 18 hundredths is equal to 1 tenth and 8 more hundredths, which is 0.18. Three hundredths is zero-point-zero-three.	adding and subtracting numbers with different decimal places. ● the importance of zero as a place holder when adding and subtracting decimal numbers. ● the effect of multiplying and dividing both integers and decimal numbers by multiples of 10 (Highlighting the misconception of adding a zero at the end of the original number.)	● lay out the column method accurately using decimal numbers.

St Anne's C of E Primary School Curriculum Plan

Subject: Maths	Year:5	Term: Summer

Unit: Number and place value (Negative Numbers Focus)

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
Millions **Factor pair** - a pair of numbers multiplied together form another number called their product. **Powers of 10** – A power of 10 is the number 10 multiplied by itself a number of times. ≥ - Greater than or equal to ≤ - Less than or equal to	• Roman numerals up to 1000 • which place value column to look at when round numbers to the nearest 10, 100, 1000 and 10 000 • to focus on the column with the highest place value when comparing numbers • to include the zero when counting up or back through zero Stem Sentences Ten one thousands make ten thousand.	• what is happening in the place value columns when adding 10, 100 and 1000 • what is the same and what is different about our number system and the Roman numeral system • which two numbers a given number lies between when rounding. • the convention of rounding up if numbers are exactly halfway • when rounding is valuable, e.g. populations of countries or when packing 53 items into boxes of 10 you need 6 boxes • negative numbers in context, such as temperature	• Count forward and back 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 • Read, write, order and compare numbers up to 1,000,000 and determine the value of each digit • Use concrete materials and pictorial representations when representing numbers up to 1,000,000

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≈ - Approximately **Divisibility** - can be divided evenly without leaving a remainder. **Square number** - a number that results from multiplying an integer by itself which can be represented in the shape of a square. **Prime number -** a number that has exactly two factors. It can only be divided evenly by itself and one.	One hundred hundreds make ten thousand. Ten ten thousands make one hundred thousand. One hundred one thousands make one hundred thousand. _____ is less than _____ ,so ____thousand is less than ____ thousand. Negative numbers are less than zero. Negative numbers are below zero. Positive numbers are greater than zero. Positive numbers are above zero. For both negative and positive numbers, the larger the value of the number, the further it is away from zero.		• Round any number up to 1,000,000 to the nearest 10,100,1000, 10 000 and 100 000 • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals • Recognise square numbers and cube numbers

St Anne's C of E Primary School Curriculum Plan

Subject: Maths	Year: 5	Term: Summer

Unit: Converting units / Volume

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
length **centimetre** **metre** **millimetre** **kilometre** **mile** **foot, feet** **inch, inches** **weight**	• how to line up a ruler accurately. • milli- means 1/1000 • there are 10 mm in 1 cm. • 1 mm is the same as 0.1 cm. • there are 1000 metres in a kilometre. • 1m is the same as 0.001km • which operation to use when converting a smaller unit of measurement to a larger one and vice versa. • the difference between capacity (the amount an object can contain) and volume (the amount actually in an object).	• the connections between centimetres and metres. • the connections between metres and kilometres. • the difference between imperial and metric units of measure. • the link between multiplying and dividing by 10, 100 and 1,000 when converting between units of length, mass and capacity. • the role of zero as a place holder when performing some calculations, as questions will involve varied numbers of decimal places.	• read the scale of a ruler accurately to measure in millimetres and centimetres. • write measurements as decimals. • read, write and recognise all metric measures for length, mass and capacity. • convert between centimetres and metres, including decimals. • convert between kilometres and metres, including decimals. • identify 1 tenth and 1 hundredth of a kilogram. • convert between grams and kilograms by dividing or multiplying.

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mass **tonne** **kilogram** **gram** **pound** **ounce** **capacity** **volume** **litre** **millilitre** **centilitre** **a.m., p.m.** **digital/analogue clock/watch, timer** **12-hour clock time, 24-hour clock time**	- the unit of measure that would be the most appropriate to measure different items. 1kg is approximately 2.2 pounds. 1 inch is approximately 2.5 cm - there are 12 months in a year. - how to convert years into months by multiplying by 12. - there are 7 days in a week. - how to convert days into weeks by dividing by 7. - there are 60 minutes in an hour. - how to convert minutes into hours by partitioning or dividing by 60. - there are 24 hours in a day. - different months have different numbers of days. - the symbol '≈' as "is approximately equal to". **Stem Sentences** There are 1000 grams in a kilogram so to convert grams to Kilograms we divide by 1000. There are 100 centimetres in a metres so when we convert centimetres to metres, we divide by 100.	- how to work out what each mark is worth on a scale. - the connections between hours, minutes and seconds. - time is not a decimal unit and so number lines are a more efficient method when calculating time.	- compare the mass of different items by converting. - convert between metres,centimetres and millimetres; litres and millilitres; kilograms and grams; seconds, minutes and hours etc - use a ruler to measure 2-D shapes. - use decimals to express units of measure when converting. - compare measurements in different units and determine 'greater than', 'less than' and 'equal to'. - determine how many seconds there are in a minute, how many minutes in an hour, how many hours in a day, and so on. - find fractions of time and convert these into decimals using division. - convert between days and hours.