

To use measures.

- Calculate using the four operations using units of measure.
- Convert between metric and common imperial units.
- Measure force in Newton's.
- Calculate the area of squares, rectangles and composite shapes, using correct units.
- Recognise volume in practical contexts.
- Use, read, write and convert between standard units.
- Recognise that shapes with the same areas can have different perimeter and vice versa.
- Calculate the area of parallelograms and triangles.
- Recognise when to use the formulae for volume and area.
- Calculate the volume of cuboids.
- Use decimal notation to three decimal places to solve measurement and conversion problems.

To use statistics

- Solve comparison, sum and difference problems using information presented in a line graph.
- Complete, read and interpret information in tables, including timetables.
- Interpret and construct pie charts and line graphs and use these to solve problems.
- Calculate and interpret the mean as an average.

To use algebra

- Use simple formulae.
- Generate and describe linear number sequences.
- Express missing number problems algebraically.
- Find two pairs of numbers that satisfy an equation with two unknowns.
- Enumerate possibilities of combinations of two variables.
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In school, we will ensure that we take every opportunity to encourage the children to develop as mathematicians.

### **Essential opportunities - Key Stage 2**

- Use the properties of shapes and angles in increasingly complex and practical contexts, including in construction and engineering contexts.
- Describe position, direction and movement in increasingly precise ways.
- Use and apply measures to increasingly complex contexts.
- Gather, organise and interrogate data.
- Understand the practical value of using algebra.

***Please speak to your child's teacher if you have any questions or would like further help or advice.***

# Thorns Primary School

## Information for Parents: **SHAPE SPACE and MEASURES**

### YEAR 6



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**Please keep this reference guide safe as it gives you an overview of the curriculum coverage for your child's year group.**

## Your child in Year 6

We want all of our children to develop excellent reasoning and problem solving skills so they become well rounded mathematicians.

Maths is taught as a discrete subject but is further developed through a range of opportunities and experiences across the curriculum. We would also encourage children to develop these skills at home so it important that families talk to their children about their learning in maths using vocabulary which is appropriate to Year 6.

At Thorns, we are developing a curriculum approach that is underpinned by Chris Quigley Essentials; in this way we aim to develop mastery and depth of learning, rather than a tick list approach. For this reason, you will notice that expectations for children look the same in years 1 & 2, years 3 & 4 and years 5 & 6. this is deliberate and does not mean that children do the same things in each of the two years, it simply means that they will have opportunities to revisit learning and in this way develop it further.

### Essential characteristics of mathematicians:

- *An understanding of the important concepts and an ability to make connections within mathematics.*
- *A broad range of skills in using and applying mathematics.*
- *Fluent knowledge and recall of number facts and the number system.*
- *The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.*
- *The ability to think independently and to persevere when faced with challenges, showing a confidence of success.*
- *The ability to embrace the value of learning from mistakes and false starts.*
- *The ability to reason, generalise and make sense of solutions.*
- *Fluency in performing written and mental calculations and mathematical techniques.*
- *A wide range of mathematical vocabulary.*
- *A commitment to and passion for the subject.*

### Essentials for progress: Milestone 3

The children will regularly be given opportunities to progress towards proficiency in the following objectives:

#### Essential learning objectives

- To understand the properties of shapes
- To describe position, direction and movement
- To use measures
- To use statistics
- To use algebra

*To understand the properties of shapes.*

- *Measure angles in degrees and draw a given angle, writing its size in degrees.*
- *Identify 90°, 180° and 360° turns.*
- *Recognise and compare triangles, including isosceles, equilateral and right angled.*
- *Recognise and name parallelograms, rhombus and trapezium.*
- *Construct shapes from given dimensions.*
- *Use the term 'diagonal' in describing the properties of shapes.*
- *Identify 3D shapes from 2D representations.*
- *Compare and classify geometric shapes based on their properties and sizes.*
- *Find unknown angles in any triangles, quadrilaterals and regular polygons.*
- *Illustrate and name parts of circles, including radius, diameter and circumference.*
- *Recognise, describe and build simple 3D shapes, including making nets.*
- *Describe properties of 3D shapes and identify parallel planes and symmetries.*
- *Estimate the size of angles.*
- *Find unknown angles involving angles at a point, on a straight line, in a triangle, in a quadrilateral and vertically opposite angles.*

*To describe position, direction and movement.*

- *Identify, describe and represent the position of a shape following a reflection or a translation.*
- *Describe positions on all four quadrants of the co-ordinate grid.*
- *Construct, translate and reflect simple shapes on the coordinate plane.*