🌟 Year 6 Maths – Parent Guide

Year 6 is all about **pulling everything together** from primary school maths so children are ready for secondary school. They work with **very large numbers, tricky fractions, decimals and percentages**, and they're expected to choose efficient methods and explain their thinking clearly.

We keep the same three big aims:

- **Fluency** – being quick and accurate with key facts and methods
- **Reasoning** – explaining *why* something works, not just doing it
- **Problem solving** – tackling multi-step, real-life problems and persevering

We still encourage children to:

"See it, think it, link it"
and to ask:
"What's the same? What's different? What do you notice?"

🧠 Mental Maths & Rapid Recall in Year 6

By Year 6, children are expected to:

- Know **all times tables up to 12 × 12** and the related division facts
- Use **addition and subtraction facts** with whole numbers and decimals
- Work confidently with **large numbers**, **negative numbers** and **decimals**
- Use mental strategies to:
    - Add and subtract efficiently (e.g. rounding and adjusting)
    - Multiply and divide by **10, 100 and 1000**
    - Spot **common factors** and **multiples**
    - Use **equivalent fractions, decimals and percentages** to solve problems

At home (little and often):

- Continue short times-table and division recall (quick-fire questions).
- Ask "estimate then calculate" questions, e.g.
    - "567 + 298 – what's a good estimate?"
- Use money and measurement to practise decimal adding and subtracting.

🍂 AUTUMN TERM – Year 6

1. Place Value & Number Sense (Up to 10,000,000)

Children learn to:

- Read, write, order and compare numbers up to **10 million**
- Understand the value of each digit (millions, hundred-thousands, etc.)
- Use **negative numbers** in context and calculate across zero
- Round large numbers to a given degree of accuracy
- Work with number lines including **large numbers, decimals and negatives**
- Count forwards and backwards in **integers, decimals and powers of 10**

At home:

- Look at big numbers in news, population figures, sports statistics.
- Talk about temperatures (especially below zero) and changes between days.
- Ask: "Round 7,483,291 to the nearest million / 100,000 / 10,000."

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2. Addition & Subtraction (Large Numbers & Mixed Operations)

Children:

- Perform **mental calculations** with large numbers and mixed operations
- Use their knowledge of **order of operations** (BIDMAS)
- Use addition, subtraction, multiplication and division in **multi-step problems**
- Identify **common factors**, **common multiples** and **prime numbers**
- Estimate answers and check using inverse operations

At home:

- Involve your child in budgeting, planning trips, or cooking for several people.
- Give them problems that need more than one step, e.g.:
    - "If a family ticket costs £37 and we buy 3, how much is that, and how much change from £120?"

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3. Fractions (Simplifying, Comparing & Adding/Subtracting)

Children learn to:

- Use **common factors** to simplify fractions (e.g. 12/18 → 2/3)
- Use **common multiples** to give fractions the same denominator
- Compare and order fractions, including those **greater than 1**
- Add and subtract fractions with different denominators and mixed numbers

At home:

- Use real food (pizza, cake, chocolate) to talk about simplifying fractions:
  "If we cut a cake into 8 equal slices and eat 4, what fraction is that? Can we write it more simply?"

- Ask: “Which is larger: 5/6 or 7/8? How can you be sure?”

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4. Multiplication & Division (Including Decimals)

Children:

- Multiply up to **4-digit numbers by 2-digit numbers** using long multiplication
- Divide up to **4-digit numbers by 2-digit numbers** using long and short division
- Interpret remainders sensibly (as whole numbers, fractions or rounded answers)
- Multiply and divide numbers by 10, 100 and 1000, including decimals
- Multiply one-digit numbers with up to **two decimal places** by whole numbers
- Use division where answers may have **decimal places**

At home:

- Use real-life scaling: increasing recipes, sharing costs between people.
- Ask: “We travel 3.75 km in 1 hour, how far in 4 hours?”
- Talk about where to round answers appropriately (e.g. money vs distance).

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5. Geometry – Coordinates & 2D/3D Shapes

Children:

- Describe and plot positions on the **full coordinate grid** (all four quadrants)
- Reflect and translate shapes on the coordinate plane
- Draw 2D shapes with given dimensions and angles
- Recognise, describe and build 3D shapes (including nets)

At home:

- Play coordinate games on grid paper (simple ‘battleships’ style).
- Build 3D shapes with construction kits or nets printed from the internet.

🌱 SPRING TERM – Year 6

1. Addition & Subtraction with Decimals

Children:

- Use addition and subtraction facts for **1** (e.g. 0.37 + 0.63 = 1)
- Add and subtract **whole numbers and decimals** using formal written methods
- Decide when mental, written or calculator methods are most efficient

At home:

- Use real prices, bills or distances to practise decimal addition/subtraction.
- Ask them to estimate first, then calculate and check.

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2. Multiplication & Division (Consolidation & Accuracy)

Children continue to:

- Multiply and divide multi-digit numbers using long methods
- Work with decimals up to **three decimal places**
- Choose efficient calculation strategies
- Use estimation and reasoning to check answers and decide if results are sensible

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3. Measures – Converting & Area/Volume

Children learn to:

- Convert between units of length, mass, volume and time, using decimals
- Convert between **miles and kilometres**
- Recognise that shapes with the same area can have different perimeters
- Use formulas for area and volume
- Calculate the area of **parallelograms and triangles**
- Calculate and compare volumes of cubes and cuboids in standard units

At home:

- Use cooking and DIY to talk about grams, kilograms, litres, millilitres, cm, m, and so on.
- Explore distances on maps: convert km to miles and back.
- Ask: “Does a long, thin rectangle and a short, wide rectangle have the same area?”

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4. Fractions, Decimals & Percentages (Equivalence & Problem Solving)

Children:

- Recall and use equivalences between fractions, decimals and percentages (e.g. ¾ = 0.75 = 75%)
- Solve problems involving **percentage of amounts** (e.g. 15% of 360)
- Solve problems involving **ratio** and **scaling**
- Use fractions to describe unequal sharing and grouping
- Multiply simple pairs of fractions and simplify the answer
- Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = 1/6)

- Connect fractions with division and find decimal equivalents (e.g. 3/8 = 0.375)

At home:

- Use sales, discounts and offers: "20% off £50 – what's the new price?"
- Share amounts in ratios when cooking, splitting money or snacks.
- Ask: "We have a bag with 3 red and 5 blue. What fraction are red? What percentage?"

☀️ SUMMER TERM – Year 6

The summer term includes **revision**, **SATS**, and **preparation for secondary school**, but there is still new learning too.

1. Multiplication & Division (Final Securing)

Children revisit and secure:

- Long multiplication and long/short division with multi-digit numbers
- Using decimals confidently in multiplication and division
- Choosing efficient methods and rounding answers appropriately

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2. Geometry – Angles & Circles

Children learn to:

- Name and illustrate parts of a **circle** (radius, diameter, circumference)
- Understand that the diameter is **twice the radius**
- Recognise and use different angle relationships:
    - Angles at a point = 360°
    - Angles on a straight line = 180°
    - Vertically opposite angles are equal
- Find missing angles in triangles, quadrilaterals and regular polygons

At home:

- Look at clocks, wheels, circular objects and talk about radius/diameter.
- Use a protractor on drawings or diagrams and ask: "What must this angle be to make 180°/360°?"

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3. Algebra (A Gentle Introduction)

Children are introduced to algebra as a way of describing patterns and relationships they already know. They:

- Use **letters and symbols** to represent unknown numbers
- Generate and describe **linear number sequences**
- Express missing number problems algebraically (e.g. 3a + 4 = 19)
- Find pairs of numbers that fit an equation with two unknowns
- Explore different possibilities and combinations

At home:

- Use simple puzzles:
  - "I'm thinking of a number. Double it and add 5 gives 21. What's my number?"
- Look at number patterns and ask:
  - "What's the rule?" "What's the 10th term?"

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4. Statistics (Pie Charts, Line Graphs & Averages)

Children:

- Interpret and construct **pie charts**, **line graphs** and other charts
- Connect their understanding of **fractions, angles and percentages** to pie charts
- Find and interpret the **mean (average)**, and understand when it is useful

At home:

- Look at charts in news reports, sports results, or weather graphs.
- Ask: "What does this chart tell us? What would the average be?"

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5. Measures & Problem Solving (Consolidation)

Children:

- Apply their skills in number, fractions, measures, shape and data to solve complex problems
- Work on projects that involve planning, estimating, calculating and checking
- Practise explaining their reasoning, justifying choices and evaluating their answers

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🏡 How Parents Can Help in Year 6

Even in this important year, **short, regular practice** beats long cramming sessions.

You can help by:

- Talking about maths in everyday life – money, time, travel, cooking, DIY
- Encouraging your child to **estimate, calculate, and then check**
- Asking them to **explain how they know**, not just give answers
- Praising **effort, resilience and clear explanations**, not just speed or scores
- Keeping times tables and basic facts **sharp and automatic**