OXFORD

MATHS CONCEPT GPS™

Find the exact concepts holding your child back in under 30 minutes

Why This Exists

Problem:

Parents see things like:

- "Stuck on word problems"
- "Careless mistakes in every test"
- "Understands in class but can't do it alone"

...but when they ask what's actually wrong, they get vague answers:

- "It's just maths."
- "They're not good at numbers."
- "They just need more practice."

That's not helpful.

Maths Concept GPS™ is a quick diagnostic quiz that shows:

- which big concept areas are strong, and
- which 3 concepts you should fix first for the biggest improvement.

You get a clear map instead of guessing.

How to Use This Quiz (Parents)

1. Choose the right level

This GPS is targeted roughly at Years 4–7 (Selective / OC / Scholarship track).

If a question looks unfamiliar because it hasn't been taught yet, mark it as "Not taught yet" instead of wrong.

2. Give your child 25–30 minutes

Let them attempt the quiz on paper without a calculator.

Don't coach them or jump in; you want a true snapshot.

3. Mark using the answer key

For each question, mark ✓ or ✗.

Transfer results into the Topic Score Table (see later pages).

4. Identify the weakest 3 topics

The Maths Concept GPS will show you which 3 concepts are the biggest roadblocks.

You'll then use the Action Suggestions to plan what to fix first.

Topic Map (What the Quiz Covers)

This GPS focuses on 7 core engines that drive almost all primary + early high-school maths:

1. **Place Value & Number Sense**
2. **Fractions & Decimals**
3. **Multiplication, Division & Word Problems**
4. **Percentages & Ratios**
5. **Equations & Algebra Thinking**
6. **Measurement & Units**
7. **Problem Solving & Logic**

Each topic has 3 questions:

- Q1 = easier
- Q2 = mid
- Q3 = harder / more layered

Diagnostic Quiz

Instructions for the child:

- Show all working.
- If you don't know, put a ? and move on.
- You can come back if you have time.

TOPIC 1 – Place Value & Number Sense

Q1.1

Write this number in digits:

"Twenty-three thousand and seven."

Q1.2

Which number is closest to 50,000?

A) 49,099

B) 50,901

C) 48,950

D) 51,500

Q1.3

A number has:

- 4 in the thousands place
- 7 in the hundreds place
- 0 in the tens place
- 9 in the ones place

The number is __, ___.

Write the number and then add 2,000 to it.

TOPIC 2 – Fractions & Decimals

Q2.1

Shade 3/4 of this shape (draw a rectangle divided into 4 equal parts).

Q2.2

Which is bigger?

A) 2/3

B) 3/5

Explain how you know (1 sentence).

Q2.3

A pizza is cut into 8 equal slices.

- Alex eats 3/8 of the pizza.
- Bella eats 1/4 of the pizza.

Who ate more?

How many eighths did they eat altogether?

TOPIC 3 – Multiplication, Division & Word Problems

Q3.1

Calculate:

27 × 4 = _____

Q3.2

There are 96 lollies. They are shared equally among 8 children.

How many lollies does each child get?

Q3.3

A box holds 18 books. A school buys 7 boxes of books.

- How many books is that in total?
- If 20 books are later lost or damaged, how many books remain?

TOPIC 4 – Percentages & Ratios

Q4.1

What is 10% of 200?

Q4.2

A shirt normally costs $50. It is on sale for 20% off.

- How much is the discount?
- What is the sale price?

Q4.3

A fruit juice is made by mixing water and cordial in a 3 : 1 ratio.

- If you use 3 cups of water, how many cups of cordial?
- If you want to use 12 cups of water, how many cups of cordial?

TOPIC 5 – Equations & Algebra Thinking

Q5.1

Fill in the blank:

7 + ___ = 15

Q5.2

Solve for x:

3x = 21

Q5.3

A number is doubled and then 5 is added. The result is 27.

Create an equation and solve it.

(Hint: Let the number be n.)

TOPIC 6 – Measurement & Units

Q6.1

How many centimetres are there in 3 metres?

Q6.2

A bottle holds 1.5 litres of juice.

How many millilitres is this?

Q6.3

A rectangular garden is 8 m long and 5 m wide.

- What is its perimeter?
- What is its area?

TOPIC 7 – Problem Solving & Logic

Q7.1

A train leaves at 3:45 pm and arrives at 5:10 pm.

How long is the journey?

Q7.2

Sara has some stickers. She gives 12 to her friend and now has 28 left.

How many stickers did she have at the beginning?

Q7.3

Three consecutive even numbers add up to 72.

What are the numbers?

Answer Key (For Parents)

Topic 1 – Place Value & Number Sense

Q1.1: 23,007

Q1.2: A) 49,099 or B) 50,901 (both are 901 away from 50,000)

Q1.3: Number is 4,709. After adding 2,000: 6,709

Topic 2 – Fractions & Decimals

Q2.1: 3 out of 4 equal parts shaded

Q2.2: 2/3 is bigger (≈0.666 vs 0.6)

Q2.3: Alex ate more. Alex: 3/8, Bella: 2/8. Total: 5/8

Topic 3 – Multiplication, Division & Word Problems

Q3.1: 27 × 4 = 108

Q3.2: 96 ÷ 8 = 12 lollies each

Q3.3: 7 × 18 = 126 books. 126 – 20 = 106 books remain

Topic 4 – Percentages & Ratios

Q4.1: 10% of 200 = 20

Q4.2: Discount = $10, Sale price = $40

Q4.3: 3 cups water → 1 cup cordial; 12 cups water → 4 cups cordial

Topic 5 – Equations & Algebra Thinking

Q5.1: 7 + 8 = 15

Q5.2: 3x = 21, so x = 7

Q5.3: Equation: 2n + 5 = 27. Solution: 2n = 22, n = 11

Topic 6 – Measurement & Units

Q6.1: 3 metres = 300 cm

Q6.2: 1.5 L = 1,500 mL

Q6.3: Perimeter = 26 m, Area = 40 m²

Topic 7 – Problem Solving & Logic

Q7.1: 1 hour 25 minutes

Q7.2: 40 stickers

Q7.3: 22, 24, 26

Topic Score Table (Your Child's 'Map')

For each question correct, give 1 point. Write the total for each topic (0–3).

Topic	Q	Correct? (✓/✗)	Topic Score (0-3)
1. Place Value & Number Sense	1.1		
	1.2		
	1.3		__/3
2. Fractions & Decimals	2.1		
	2.2		
	2.3		__/3
3. Multiplication, Division & Word Problems	3.1		
	3.2		
	3.3		__/3
4. Percentages & Ratios	4.1		
	4.2		
	4.3		__/3
5. Equations & Algebra Thinking	5.1		
	5.2		
	5.3		__/3
6. Measurement & Units	6.1		
	6.2		
	6.3		__/3
7. Problem Solving & Logic	7.1		
	7.2		
	7.3		__/3

Interpreting the Scores

Use this as a rough guide:

0/3 in a topic → Critical gap

Your child likely has missing foundations and feels lost in this area.

1/3 → Weak / unstable

They might know parts, but can't apply them reliably.

2/3 → Developing

Basic understanding is there; needs practice and exam-technique.

3/3 → Strong

Concept is solid at this level; you don't need to prioritise it now.

Step 1 – Circle the 3 lowest topics

From your Topic Score Table, find the three lowest scores. These are your child's Top 3 GPS 'weak spots'.

Example:

- Place Value – 3/3
- Fractions – 1/3
- Multiplication/Division – 2/3
- Percentages/Ratios – 0/3
- Equations – 2/3
- Measurement – 3/3
- Problem Solving – 1/3

Top 3 to fix first:

1. Percentages/Ratios (0/3)
2. Fractions (1/3)

3. Problem Solving (1/3)

Step 2 – Star any topic where your child guessed or looked confused

If they got a question right by guessing, treat it as 'half-strong' at best. If they looked extremely confused, circle that topic too, even if they scraped marks.

Quick Action Suggestions for Each Topic

These are starting points you can use at home or share with a tutor/teacher.

1. Place Value & Number Sense (score 0–1/3)

Focus on:

- Reading and writing large numbers
- Expanding numbers (e.g. 4,709 = 4,000 + 700 + 9)
- Rounding to nearest 10 / 100 / 1,000

Try:

- Ask them to say numbers out loud and write them.
- Play 'closest to' games: give 3 numbers, ask which is closest to a target.

2. Fractions & Decimals (0–1/3)

Focus on:

- Understanding parts of a whole (shapes, pizza, bar models).
- Comparing fractions using common denominators or benchmarks (½, 1, 0).
- Adding fractions with same and related denominators.

Try:

- Use visual fraction strips / circles.
- Ask: "Is this bigger or smaller than ½? Why?"
- Practise converting simple fractions to decimals (e.g. ½ = 0.5).

3. Multiplication, Division & Word Problems (0–1/3)

Focus on:

- Times tables up to 12×12.
- Interpreting division as both 'sharing' and 'grouping'.
- Translating word problems into operations.

Try:

• Short, daily times tables sprints (2–5 mins).

• Underline key information in word problems and ask: "Are we sharing or making groups? Multiply or divide?"

4. Percentages & Ratios (0–1/3)

Focus on:

- 10%, 25%, 50% of numbers (friendly percentages).
- Linking fractions ↔ decimals ↔ percentages.
- Simple ratio scaling (e.g. if 2:1, then 4:2, 6:3).

Try:

- Real-life: talk about discounts in shops.
- Ask: "What is 10% of 300? 20%? 50%?"
- Use diagrams for ratios (3 parts water, 1 part cordial).

5. Equations & Algebra Thinking (0–1/3)

Focus on:

- 'Missing number' thinking (e.g. ___ + 7 = 19).
- One-step equations (ax = b, x + b = c).
- Translating simple stories into equations.

Try:

- Use a balance scale idea: whatever you do to one side, do to the other.
- Turn word sentences into equations regularly ("double a number then add 5 gives 23").

6. Measurement & Units (0–1/3)

Focus on:

- Converting between units (cm ↔ m, mL ↔ L).
- Perimeter vs area distinction.
- Reading measurement questions carefully.

Try:

- Get them to estimate and measure objects at home.
- Draw rectangles; ask them to find both perimeter and area, and talk through the difference.

7. Problem Solving & Logic (0–1/3)

Focus on:

- Breaking problems into steps.
- Drawing diagrams/timelines.
- Setting up equations for 'mystery number' problems.

Try:

- For time problems: always draw a small timeline.
- For 'consecutive numbers': represent with n, n+2, n+4 etc.
- Encourage them to re-read the problem after solving to check if it makes sense.

Parent Script: How to Share Results Without Shaming

Use this language when you sit down with your child:

"We did this quiz not to label you as 'good' or 'bad' at maths, but to figure out where the holes in the road are. Every smart student has 2–3 key topics that hold everything else back."

"Your strong areas right now are:
– [list topics with 2–3/3]"

"The 2–3 areas that need the most work are:
– [list weak topics]
That doesn't mean you're bad at them; it just means we haven't built those muscles yet."

"For the next few weeks, we're going to focus just on these 3 GPS topics. Once those get stronger, all the other questions that use them will become easier."

End with:

"This quiz is not a verdict. It's a map. And now that we know where we are, we can choose a better path together."