



## Ofsted - Coordinating Mathematical Success: The Mathematics Subject Report, July 2023

<https://www.gov.uk/government/publications/subject-report-series-maths/coordinating-mathematical-success-the-mathematics-subject-report>

### Departmental Briefing: Secondary Mathematics Excellence

This briefing note is specifically designed for a Secondary Maths Department. It shifts the focus from foundational "number sense" to the more complex challenges of algebraic proficiency, non-specialist support, and long-term retention as outlined in the July 2023 Ofsted report.

**Focus:** Key Findings from the 2023 Ofsted Mathematics Subject Report

**Target:** Secondary Maths Specialists and Non-Specialists (KS3–KS4)

### The "Algebra Gap"

The report identifies that the transition to algebra is where many pupils fall behind. This is often because they lack "procedural automaticity" in arithmetic, which creates a cognitive bottleneck when variables are introduced.

**Action:** Before starting algebra units, rigorously test and reinforce directed numbers, fractions, and order of operations. If these aren't "second nature," pupils cannot focus on the logic of the algebraic manipulation.

### Avoiding the "Problem-Solving" Trap

A major finding was that pupils are often asked to "solve problems" before they have the necessary component knowledge. Problem-solving is not a generic skill; it is the application of well-rehearsed facts.

**The Strategy:** Ensure pupils have mastered the **declarative** (facts) and **procedural** (methods) before they are given "unstructured" or multi-step problems.

**Recommendation:** Use "Goal-Free Problems" (e.g., "Find everything you can about this triangle") to reduce cognitive load while building confidence.

### Systematic Use of "Worked Examples"

For secondary learners, the report highlights the effectiveness of The Worked Example Effect. High-quality modeling reduces the "trial and error" that leads to misconceptions.

**Action:** Use "Example-Problem Pairs." Model a solution on the left side of the board/slide, then have pupils attempt a near-identical "Your Turn" problem on the right side immediately after.

**The "Silent Teacher" approach:** Try modeling a complex algebraic derivation in silence first, then re-model it with a verbal explanation to allow pupils to focus solely on the visual step.

### **Mathematical Vocabulary & Discourse**

The report notes that "knowing" a word like *coefficient*, *reciprocal*, or *proportionality* is different from being able to use it accurately.

**Action:** Use "Tier 3" vocabulary consistently. Avoid "dumbing down" terms (e.g., use "inverse" instead of "opposite"). Insist on pupils using correct terminology in their verbal and written responses.

### **Curriculum Continuity: The KS2 to KS3 Bridge**

One of the report's biggest criticisms is the lack of alignment between Primary and Secondary teaching methods.

**Action:** We must understand the "methods" pupils bring from Year 6 (e.g., the grid method vs. long multiplication). If we change their method, we must explain *why* it is more efficient for higher-level math, rather than just telling them their old way is "wrong."

### **The Role of "Intelligent Practice"**

Practice in secondary should move quickly from "fluency" to "variation."

**Action:** When setting practice questions, use Variation Theory. Change only one variable at a time (e.g., keep the numbers the same but change the sign) to force pupils to notice the mathematical structure rather than just "crunching numbers."

### **Support for non-specialists**

The report recognises the reality of non-specialists teaching Maths.

**Action:** As a department, we will provide "scripted" pedagogical support for non-specialists—not just a PowerPoint, but a guide on the *best way* to explain a concept and common pitfalls to avoid.

### **Systematic Review (Retrieval)**

Secondary pupils often "forget" topics taught in Term 1 by the time they reach Term 3.

**Action:** Incorporate "Low-Stakes Retrieval" into every lesson starter. Use a "Last Lesson, Last Week, Last Month" grid to ensure that declarative facts are being moved into long-term memory consistently.

Read more at

[www.transformingmaths.co.uk](http://www.transformingmaths.co.uk)

