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**Mathematics OFSTED Inspection – The Deep Dive**

**July 6, 2019**

Earlier this week, my school took part in a trial OFSTED inspection as part of getting ready for the new [inspection framework in September 2019](https://www.gov.uk/government/publications/education-inspection-framework). This involved three Lead Inspectors visiting our school over the course of two days. The first day involved a ‘deep dive’ by each of the Lead Inspectors into Mathematics, English and Science departments. I am the Head of Mathematics.

I write this blog to share my experience of the deep dive inspection into the mathematics faculty. I hope fellow Heads of Mathematics find it useful when they go through an inspection. To prepare for the deep dive inspection, I wrote some notes beforehand to use as prompts when talking to the inspector.

The notes are focused on the quality of mathematics education my team and I deliver to our students. They are broken down into the following headings. **Intent** – What we are trying to achieve, **Implementation** – How our curriculum is delivered, and **Impact** – The difference our curriculum is making.

**Curriculum Intent – *What we are trying to achieve through our curriculum***

**An ambitious and supportive scheme of work**

We have collaboratively developed a skill-based scheme of work that promotes problem solving, resilience and ensure full curriculum coverage. Its implementation is monitored through weekly learning walks and termly faculty development observations.

Common misconceptions and key teaching/learning points are included in all schemes of work to aid planning and inform student questioning. Assessment for learning opportunities are explicitly stated to support teachers in their interactions with students.

**Inspiring and exciting students**

To make learning exciting our interactions with the students personalise feedback and promote independent study.   We encourage risk-taking by rewarding process rather than the final outcome. These are monitored through learning walks and faculty development observations.

Students develop a growth mindset as a result of deeper learning and increased risk-taking.  This is a result of prolonged thinking time and top-down differentiation when responding to teacher’s questions.

**Ensuring a coherent scheme of work that challenges all students**

Faculty development time is used to discuss the pedagogy of forthcoming topics. We share different strategies, resources and assessment for learning tools to ensure all teachers know how to differentiate down for all students.

KS2 transition meetings ensure KS3 starts where KS2 left off.  We do not spend time re-teaching what students could do at KS2.  This is monitored through faculty development meetings, learning walks and book checks.

Worded problem-solving questions are included in every lesson.  Teachers read these out loud in class while pointing to the text being read.

**Reviewing the schemes of work**

Faculty development meetings are used to discuss the pitch of lessons for different ability groups.  Assessment results inform the subject content and depth of future topics. We adjust the SoW for our individual classes and the year group as a whole accordingly.

**Applying the skills students have been taught**

90% of the GCSE content is covered in Years 9 and 10.  Year 11 is used for revision of topics and overarching exam style problems.  From June of Year 10 students are formally assessed using a past exam paper every two weeks.  These results inform the next two weeks lessons. From February of Year 11 students work through practice exam papers for 50% of their lesson time.

**Implementation – How our curriculum is delivered**

**Embedding Quality Teaching and Learning**

Using a range of assessment for learning strategies every lesson including mini-whiteboards, group discussions, traffic lights and paired work to allow increased thinking time when responding to the teacher’s questions.

This is developed through sharing best practise in forthcoming topics during faculty development time. Each member of staff leads discussions for topics they are most expert in.

This has resulted in increased student engagement as more students are willing to take risks when responding to questions.

**Personalised written feedback**

All students go through a feedback, action, response process twice a half term. Feedback is informed by a student’s class and homework. The teacher targets a topic that a student needs more time to practice by writing a personalized diagnostic comment that identifies and corrects the misconception in student-friendly language.

The student is given sufficient time to respond to the teacher’s comment by attempting a substantial problem on that topic.

**Supporting teachers to deliver excellence**

Teachers are developed through a process of monitor – support – review.

Learning walks and student conversations are used as a barometer of student engagement in the lesson. This is cross-checked with student learning profiles and assessment results every term.

Support includes, 1-2-1 teacher mentoring through the whole school learning group and Head of Mathematics. Opportunities are provided to lead discussions in faculty development meetings.

The impact of the various support strategies is measured through repeated learning walks, teacher discussions and the next set of assessment data.

**Impact – *The difference our curriculum is making***

**How we know students are learning**

2017-2018 produced the most improved set of Mathematics exam results in the school’s history. Improvement was shown at all levels with more higher grades and fewer lower grades. 2018/2019 are predicted to be higher again.

Extended written work in students’ books demonstrates an increased ability to articulate a reasoned mathematical argument.

Better questioning and increased thinking time allow students to more fully articulate a reasoned mathematical argument. Teachers are now getting better at challenging students to explain their reasoning to their peers.

Most importantly, students are happier in their mathematics lessons than ever before. Talk to our students ask them.

**The Department in Action**

After my hour-long interview, the inspector and I carried out two 20-minute joint observations. I was extremely proud of my teachers and their students. Everything I spoke about in the interview came across in the observations. The teacher’s modelling was clear and concise. Their questioning was purposeful and thought-provoking.

In addition to the lesson observations, the inspector wanted to look through a number of student exercise books which we were happy to provide.

**Feedback to the Department**

As this was a trial inspection no formal judgement was made. However, I was informed by the Head and Executive Headteacher that the mathematics department performed well and were a credit to the students.

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Mr Mathematics Blog

[**Literacy in Mathematics – Creating Problem Solvers**](https://mr-mathematics.com/literacy-in-mathematics-creating-problem-solvers/)

October 28, 2019

In mathematics we give all students the communication skills to become excellent problem solvers. To us, literacy in mathematics means to develop a student’s structured speaking, vocabulary, writing and reading with the intention of helping them to solve mathematical problems. Literacy in Mathematics In this blog I will share some practical advice my department uses […]

[**Angles in Polygons**](https://mr-mathematics.com/angles-in-polygons/)

October 16, 2019

There are two key learning points when solving problems with angles in polygons.  The first is to understand why all the exterior angles of a polygon have a sum of 360°.  The second is to understand the interior and exterior angles appear on the same straight line. Students can be told these two facts and […]

[**Getting Ready for a New School Year**](https://mr-mathematics.com/getting-ready-for-a-new-school-year/)

August 22, 2019

When getting ready for a new school year I have a list of priorities to work through. Knowing my team have all the information and resources they need to teach their students gives me confidence we will start the term in the best possible way.  Mathematics Teaching and Learning Folder All teachers receive a folder […]

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