

## Effective mathematics teaching: Archbishop Temple School

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### Brief description

In many schools, students' long-term progress in mathematics is slowed by inconsistent teaching. At Archbishop Temple School, very effective leadership of a strong team of teachers ensures that students experience teaching that is consistently good or better. Students in all groups benefit because different teachers use common approaches and teaching styles.

### Overview – the school's message

'Achievement in mathematics has been consistently outstanding over a number of years. It is due to the high quality of teaching, appropriate curriculum, effective leadership and high expectations that are nurtured throughout every lesson and with every child. We have created an atmosphere where all students can develop and excel. The department strives to continually develop and improve in all areas of teaching and learning, investing time and resources both in training and sharing of good practice. Ultimately, it is our strong positive relationships with both pupils and their parents and carers, that allows us to help all our pupils realise their potential.'

*Simon O'Leary, Head of Mathematics*

### The good practice in detail

Archbishop Temple School was judged outstanding in its [last Ofsted inspection in 2009](#) and provision for mathematics was graded outstanding in an [Ofsted survey visit in 2010](#). This example focuses on some of the reasons why.

#### Strong leadership and management

At Archbishop Temple, as in most schools, the schemes of work include an identified order of work units. However, the format of the schemes here goes well beyond a list of topics with

references to work at different levels or particular exercises and activities. Each unit is accompanied by a written discussion of topic, describing recommended approaches and possible misconceptions. This [presentation](#) gives a helpful structure to teachers' [planning](#).



Teachers understand which key concepts they are trying to get across and plan their lessons accordingly. The schemes are valued by experienced teachers and particularly by new members of staff, who appreciate the strong and clear guidance. One teacher refers to this being 'a very easy department to join'.

Beyond the structure of the schemes of work, staff share ideas both formally, in departmental meetings, and informally on a day-to-day basis. A common philosophy of what constitutes good mathematics teaching is well promoted, and lies at the heart of the guidance and teaching materials. Teachers enjoy the challenge of getting students to understand mathematical ideas and developing their curiosity.

As a result, students learn to do mathematics rather than learn to pass an exam: a large number of students choose to study mathematics at AS and A level and feedback from the local colleges confirms that Archbishop Temple students are well prepared for A level study.

Consistent approaches are particularly effective in building on prior knowledge – essential when students are learning topics such as algebra – and this helps students to build their understanding over time very effectively. For example, during the Ofsted survey visit, students demonstrated an excellent ability to manipulate algebraic expressions and solve equations. They were able to build their learning because the teacher used an approach they were familiar with and previous teaching meant that they had a thorough grounding in the concept of inverse operations and equivalent expressions.

Other successful strategies that promote consistent practice across the department include regular opportunities, both formal and informal, to see others teach. Such opportunities lead to teachers discussing professional practice and exchanging ideas. This practice is supported by 'monitoring weeks' where, at pre-arranged points in the year, pairs of teachers exchange a sample of exercise books. Again, this promotes professional dialogue on teaching approaches and what activities different teachers use, as well as looking at how others mark students' work and the kind of feedback they provide.

An unusual feature is the policy of sharing out the preparation of starter activities. Each teacher is allocated a topic due to be covered in that half term and is responsible for preparing three starter activities. The [starter activities](#) are shared with all colleagues, who then all use the same [material](#) at the beginning of their lessons. This strategy promotes consistency in the classroom but also helps all members of the department to feel fully involved in a cohesive team.

“All the teachers are really good; it wouldn't be different whoever I got”

This well-established structure means that changes in staffing, including the leadership of the department, lead to minimal disruption for students.

## Outstanding teaching and learning

The outstanding teaching in the department makes use of published resources, such as text-books and worksheets, but only selectively. There is no set text-book. Teachers aim for

active learning, using a range of sorting and matching activities that engage students and encourage discussion. As one student said, 'Teachers make it fun to learn'.



Teachers regularly use lesson objectives that relate to National Curriculum levels or GCSE grades. These help students to know their current level and what additional learning would take them to the next level or grade. Detailed feedback from teachers and regular self-assessment help students to know what they are good at and not good at, so that they can focus their attention on what needs improving.

Teachers use mathematical terminology accurately and frequently and expect students to do the same. When questioning students, they ensure that students have opportunities to explain their ideas and reasoning. Lesson planning incorporates a focus on likely errors and misconceptions and teachers select activities that address misconceptions directly. Lessons take place in a positive learning atmosphere.

## Positive feedback from students

Students have positive attitudes to mathematics and value the support for examination revision that they receive through the school's virtual learning environment (VLE). This support includes the usual commercial packages for self-study but also copies of GCSE papers with annotated solutions. The mathematics section of the VLE is, by some margin, the most visited section of the school's site. Students express positive views on the quality of teaching they experience. They appreciate the fact that different teachers use similar approaches and teaching styles. One benefit is that students move between sets with minimum disruption. Typical comments from students include: 'All the teachers are really good; it wouldn't be different whoever I got', and 'All have been just as helpful, always there and providing extra support'. Students also value the regular awards offered for work in mathematics.

‘Teachers make it fun to learn’

## The school's background

Archbishop Temple School, a Church of England Specialist College is a relatively small school that serves mainly the Church of England communities of north Preston. The proportion of students known to be eligible for the pupil premium is low. About 30% of the students are of minority ethnic heritage, mainly Indian. Relatively few students are disabled or have identified special educational needs.



Are you thinking of putting these ideas into practice; or already doing something similar that could help other providers; or just interested? We'd welcome your views and ideas. Get in touch [here](#).

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