

Inspection of University of Liverpool Mathematics School

Inspection dates:

20 to 22 March 2024

Overall effectiveness**Outstanding**

The quality of education	Outstanding
Behaviour and attitudes	Outstanding
Personal development	Outstanding
Leadership and management	Outstanding
Education programmes for young people	Outstanding
Overall effectiveness at previous inspection	Not previously inspected

Information about this provider

The University of Liverpool Mathematics School (ULMaS) is a 16 to 19 free school situated in Liverpool city centre. ULMaS is a single academy trust run by a board of trustees. ULMaS was formed in 2019 and opened to students in September 2020. The school provides education for 16 to 19-year-olds in science, technology, engineering and mathematics (STEM).

At the time of the inspection, 94 students were studying education programmes for young people. There were 52 students in Year 12 and 42 students in Year 13. In Year 12, all students study A levels in mathematics, further mathematics, computer science and physics. In Year 13, most students study A levels in mathematics and further mathematics, and can choose between studying computer science and physics.

What is it like to be a learner with this provider?

Students are highly motivated and exceptionally keen to achieve well in their studies. They consistently demonstrate positive attitudes to their learning and attendance is very high. Students enthuse about the nurturing culture fostered by staff. They say they can be themselves and grow as an individual.

Students benefit from studying in a highly inclusive environment. They talk enthusiastically about how staff use correct pronouns. Students develop a secure understanding of equality and diversity and the impact that this has on the subjects they are studying. For example, computer science students explain website accessibility. They describe how websites can be made accessible so that people with physical disabilities, and motor or visual impairments, do not need to use a mouse.

Students access a wide range of activities to support their development. They develop their social skills by completing activities on a Friday afternoon. These include inter-house competitions, sports, dance and music clubs. Students take part in the Duke of Edinburgh's Award, where they learn how to plan hikes. They design meal plans for their peers who have a range of dietary requirements. Female students attend the Women in STEM lunchtime club. They plan Women in STEM Saturdays to attract more female students into the STEM subjects.

Students grow significantly in confidence because of being at the school. They access an exceptional personal development curriculum that swiftly develops their communication skills. Students attend workshops at the school and external events such as the Shakespeare North Playhouse. They learn how to find their voice and how to produce writing that is compelling to read. As a result, students confidently pitch projects to panels of judges and take part in academic debates.

Students feel safe and know who to contact if they have any concerns. They learn about a range of topics such as domestic abuse, unhealthy relationships, online safety and the risks of radicalisation and extremism. Students speak positively about the order of when these topics are taught. For example, staff discuss sensitive topics such as healthy relationships only when students are comfortable speaking in front of their peers.

What does the provider do well and what does it need to do better?

Leaders and staff are passionate about their school and the community they serve. They carefully plan and continually develop their curriculums to support students, some of whom are from the most deprived areas, to achieve their aspirations. For example, students complete an aspiring mathematician programme, where they complete industry-related projects to prepare them for university or employment. Students apply their mathematical skills of sifting data and analysing correlations with statistical graphs through investigating the links between smoking and cancer

rates in the United Kingdom. This means that students swiftly develop fluency in their mathematical skills and understand how to apply them in industry.

Leaders develop ambitious curriculums. Teachers carefully design challenging curriculums that go beyond the A-level specifications. In mathematics, teachers include pure mathematics topics from degree programmes. Teachers in computer science discuss the impact of artificial intelligence on industry such as in roadwork planning. As a result, students are prepared exceptionally well to progress on to STEM-related degree courses, apprenticeships or employment.

Teachers accurately assess what students already know and can do at the start of their programmes. All students complete a 'bootcamp' so that teachers can identify gaps in GCSE knowledge. Teachers use this information to skilfully design the curriculum so that students swiftly develop their knowledge and skills. In mathematics, students quickly develop their skills in trigonometry and integration to tackle more complex problems.

Teachers expertly plan the curriculum in a logical order. In computer science, students gain the fundamental knowledge of concepts such as data types, Boolean algebra and computer operating systems. They apply this new learning by researching legal and ethical issues such as data protection and copyright. This means that students deepen their understanding and apply previous knowledge exceptionally well to new learning.

Teachers skilfully use a range of teaching strategies to recap prior learning and develop students' knowledge and skills. Students benefit from teachers providing overviews of topics in lectures before deepening and extending their knowledge in small supervision groups. During these sessions, teachers model answers, set complex problems and use examination-style questions. As a result, students become more confident in recalling what they have learned.

Teachers use highly effective assessment activities so that students become fluent in their knowledge and skills over time. They use questioning, reflection, discussion and mock assessments to check that students understand what they have been taught before moving on to the next topic. Students benefit from individual teacher support and supervision sessions to rectify gaps in knowledge and to respond to the feedback they receive from their teachers. This supports them to achieve higher grades in their examinations.

Students benefit from high-quality impartial careers education, information advice and guidance. They receive individual support from an external careers adviser and attend a substantial number of university open days. Students are well informed about their next steps and all progress to positive destinations.

Leaders and trustees carefully monitor staff workload and well-being very effectively through appraisals and weekly staff meetings. Leaders ensure that staff do not complete excessive amounts of assessments and marking. They swiftly put actions in place to reduce staff workloads where required. For example, in mathematics,

leaders have redesigned the marking and feedback policy to include more oral feedback through small group supervision sessions with students. Teachers' workload has reduced without compromising the quality of feedback that students receive.

Staff talk enthusiastically about a culture of compassion in the school. They feel highly valued and supported by leaders, managers and trustees. Staff benefit from access to well-being services such as weekly supervision meetings and counselling. They talk positively about the supportive culture at the school and having approachable managers who always make time for them.

Trustees are appropriately qualified, with relevant experience in the schools and further education and skills sector. They share leaders' passion and commitment to develop their students both academically and socially so that they are well prepared for their next steps. Trustees take an active role in providing support and challenge to senior leaders and staff. They visit lessons and speak with students to ensure that leaders' actions continue to have a positive impact on the quality of education that students receive.

Safeguarding

The arrangements for safeguarding are effective.

Provider details

Unique reference number	147477
Address	Sir Alastair Pilkington Building Back Bedford Street Liverpool L69 7SH
Contact number	0151 640 0397
Website	liverpoolmathsschool.org
Headteacher	Damian Haigh
Provider type	16 to 19 free school
Date of previous inspection	Not previously inspected
Main subcontractors	None

Information about this inspection

The inspection team was assisted by the deputy headteacher, as nominee. Inspectors took account of the provider's most recent self-assessment report and development plans, and the previous inspection report. The inspection was carried out using the [further education and skills inspection handbook](#) and took into account all relevant provision at the provider. Inspectors collected a wide range of evidence to inform judgements including visiting learning sessions, scrutinising learners' work, seeking the views of learners, staff and other stakeholders, and examining the provider's documentation and records.

Inspection team

Alison Humphreys, lead inspector	His Majesty's Inspector
Maria Rayworth	Ofsted Inspector
David Towsey	His Majesty's Inspector

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