

Motivation and Engagement Practice Study

Motivating and engaging GCSE maths students

Centre: City College Plymouth **Name:** Katie Fremlin, Project Manager

City College Plymouth is one of the 21 Centres for Excellence in Maths (CfEM) and has been using some motivation and engagement approaches in their maths teaching. We've spoken to Katie Fremlin, Project Manager on the CfEM programme at City College Plymouth, to learn more about the approach and how she and her team, and the students at City College Plymouth have benefitted from it.

What practice has your centre been doing relating to the key principles for motivation and engagement? Which key principles is your work exploring?

'Compete with ME' – We hold regular maths challenge days for all maths students to take part in. These include activities such as reaction tests, LEGO® scale builds, Kahoot and medical measurements to incorporate functional skills and the GCSE syllabus in a fun and engaging way. Compete with ME also goes on a roadshow to our other college sites. This links with Key principle 2: Students' interests and Key principle 3: Ways of working.

Maths Corner – Maths Corner is held in the college's main reception every Thursday between 12.30 and 1.30 pm with a different activity or competition each week. We connect with different departments throughout the college to create a maths challenge that ties in with a vocational subject or life skill. The aim of Maths Corner is to increase student engagement with maths, showing them the relevance of maths in different industries and careers. There are prizes available each week for students. Maths Corner links with Key principle 2: Students' interests and Key principle 5: Importance of maths.

Joint teaching – We are starting to develop joint teaching approaches, beginning with a pilot with ESOL students. The ESOL students are taught by the Academy Manager for Hospitality and the Head of Maths jointly, creating contextualised lessons based on building life and employability skills. From September 2019, we will develop joint teaching approaches in each faculty. Our joint teaching relates to Key principle 1: Learning environment, Key principle 2: Students' interests, Key principle 3: Ways of working and Key principle 5: Importance of maths.

'Inspire ME' – We host inspirational talks from local employers and motivational speakers to engage and inspire students and show them the importance of maths skills in life and employment. Some speakers focus on showing students that hard work and resilience pay off and encourage them to feel empowered to learn and apply this to their maths development. Inspire ME is based on Key principle 5: Importance of maths.

Development and use of alternative learning environments – Our centre is a very sensory, modern environment and supports students to feel more relaxed and comfortable while studying. Our maths team are developing a series of outdoor sessions looking at the numbers in nature using our college woodland and local park, which will also be open to primary and secondary schools. Throughout the college there are several classrooms that are used for maths teaching. Our art and design students are working on a project to create a graffiti maths canvas for each classroom and a timeline of maths discoveries and maths map outside the main centre. The development of learning environments for our maths students ties in with Key principle 1: Learning environment, Key principle 3: Ways of working and Key principle 5: Importance of maths.

Why did you decide to introduce these activities?

We wanted to encourage a cross-college approach to maths teaching, and to incorporate maths into the college culture and ethos. Our aim is to encourage all our students and the wider community to aspire to develop their maths skills and to view their maths qualifications as relevant and important, as opposed to a compulsory aspect of their education.

How did you approach introducing this way of working?

We have developed good links with departments throughout the college and supported staff to be involved and incorporate maths education. Central activities, such as Maths Corner, are available to all students and these take place in the main hub of the college. The maths team are working with students for them to use their vocational skills and talents to support the development of a maths culture. For example, our art and design students have created maths-based art for classrooms and communal areas, and our software development students support with the delivery of maths technology workshops. Staff and students are regularly kept up to date with upcoming activities and have engaged well with sessions outside of college hours, for example, additional revision and intervention sessions.

How long have you been using this approach and how many teachers and students have been involved?

We have been doing these activities since February 2019. The Maths Centre has had over 3000 student interactions between February and September 2019, in addition to main maths lessons, through the activities and opportunities described. Approximately 30 staff are involved in the project from departments throughout the college.

What do you think the outcomes have been? Why do you think it has been effective?

There has been a shift in students' attitude and an increase in participation of optional sessions and activities. The alternative learning environment has increased student engagement and interaction. Many students comment that it feels more relaxed and comfortable to learn. We have recruited a team of eight student maths ambassadors who help to support and promote activities and events at the maths centre. For the ESOL group where joint teaching was used, attendance and engagement has increased. In August 2019, our GCSE results were 8.5% above the national average for Grades 4–9.