

Meaningful Learning Experiences

Strategic Commitment	✓	Part of a pilot supported by a large academy trust
Curriculum Provision	✓	Helping to develop arithmetic skills in year 8/9
Employer Partnerships	✓	Initially with a construction firm, then a recording studio
Reflective Young People	✓	Helping students develop problem-solving skills
Informed Career Choices	✓	Insight into the workplace of a recording studio

Maths project switches focus from the Construction industry to an aspiring hip hop artist

Originally, the brief for this maths project at Four Dwellings Academy in Birmingham had year 10 students in mind. It stated that, *'Students forget and/or mix up the steps required for processes such as multiplying, dividing, adding and subtracting with fractions as well as working with laws of indices and standard form. It can all seem like abstract information not anchored to anything helpful.'*

A major construction firm had their regional offices just across the road from the school and already had a significant corporate social responsibility programme with schools. They responded positively to the brief, providing scale drawings and other data from two construction sites and even lining up a quantity surveyor to support the project. But then the Covid-19 health crisis halted the building trade and many of the company's staff were put on furlough. With the majority of students now at home, engaging them in their studies was also a challenge for teachers across all subjects.

One of the maths teachers – in his spare time – performed as a hip hop spoken word artist and had previously created a work sheet about a fictitious rap artist as the basis for maths calculations. Using this idea and a virtual tour of 'The Mushrooms, a local recording studio, which had been created for a music project at another school in the academy trust, the worksheet became a challenge for year 8/9 students, who were asked to advise their teacher ... *'Mr K': Should he record at home or pay to use a professional studio? Should he record an album or just his one best track?*

Students were given costs and other figures and asked to submit a short proposal, with a selection of their work being sent to the manager of the recording studio for informal feedback.

Benefits for the Students

Advise from the students for their maths teacher – aka 'Mr K' – varied widely:

- *'... when your music career takes off you could invest in a home studio.'*
- *'... you should learn to record at home because it could be useful in the future ...'*

The achievement I am most proud of as a result of this experience is:

- *'I have a better understanding of how to put costings together.'*
- *'Helping Mr K Mills.'*

Benefits for the School

- 'It gave the students an opportunity to use Maths and problem solve in a real-life scenario, which is something they are under practiced in.'
- 'My next few terms working with them (when we're hopefully back in school) will be focused on reconnecting with them and closing their learning gaps ... this project is something that is most effective post Covid-19 once they have settled back into good learning rhythms.'

Benefits for the Employer

- The construction company remains keen to develop curriculum projects, recognising their potential to reach large numbers of young people with limited requirement for staff time and making use of existing information to provide real contexts for learning.
- The virtual tour of The Mushrooms recording studio had already been created for a project at another school within the same multi-academy trust.

The Mushrooms



I've provided some basic figures and want your thoughts about a deal we could offer



The Mushrooms Challenge

Think your best option is to go with the studio, it has the right equipment with the experts that know about mixing music, and how to get the best from your songs and the rooms have the right acoustic environment. Your songs would be a finely tuned and professional finished piece. I feel that you would be best to have your best song produced as it states in the information the for 60 seconds of the track is what will impress.

To hire the studio the cost would be significantly less at the day rate of £300.00 record one track to send to a producer or your agent. And when your music career takes off you could invest in a home studio.

If you decided to convert a space into a studio at home you would have to consider making the room sound proof, this could prove costly the following figures have been based on a room of 6m² with a floor to ceiling height of 2.8m.

The walls would need to be covered Acoustic Wall board and can be supplied by Gyproc and can be sourced in a size of 2.4m x 1.2m.

The ceiling would need to be covered in Acoustic ceiling board this can be supplied by Celotex and would need to be placed on the ceiling above a 600mm x 600mm batten system, the battens Batten would be 45mm x 40mm and fixed to the ceiling using a Vibrofix suspension system followed by an acoustic liner with 50mm of Celotex Acoustic Insulation.

The floor would need to be covered in 30mm Acoustic Deck this is available from Gyproc and the size of the tile and groove panels are 1.2m x 0.6m.

The room would require a sound dampener for the window, assuming the window is 1.2m by 1.2m the dampener would need to fill the aperture to keep the room sealed.

All the electric outlets would need a sound dampener fitted inside and for all the equipment needed you would probably need 4x doubles.

The door would also need replacing and a soundproof door installing. Before the finishes can be done i.e. carpet, wallpaper etc the room would need to be sealed around the edges with soundproof sealant.

The costs below reflect the materials only and completed as a DfP project.

Quantity	Product	Unit Cost	Total
7	Floor Acoustic Deck 3.6 x 0.6m	£28.57	£199.99
10	Acoustic Wall Board 2.4 x 1.2m	£8.99	£89.90
7	All 45mm Celotex Double Batten 2.8m length	£30.99	£216.93
4	30mm Celotex Acoustic Insulation Board 2.4 x 1.2	£47.96	£191.84
4	Acoustic Ceiling Board 2.4 x 1.2m	£8.10	£32.40
1	Window sound dampener 1.2m x 1.2m	£79.90	£79.90
4	Electric socket sound dampeners (4 doubles)	£4.90	£19.60
1	Soundproof door	£109.90	£109.90
1	Soundproof sealant	£20.90	£20.90
1	Mac Book Pro	£1000.00	£1000.00

The Mushrooms - Hip Hop Challenge



Mr Mills is a great maths teacher. But he can earn more amazing options and help you out by the name of Mr. K. He has been working on this dream career behind the scenes for a while and he's time to take the next step. He wants to record a demo to send out to record producers and agents. The Mushrooms is a recording studio in Birmingham run by Matt. Matt is keen to help emerging talent, but he must also keep an eye on the cost of running his recording studio.

Mr Mills has options and your challenge is to try and mentor him, helping him to make the right choice.

Option 1: Should he record at home or pay to use a professional studio?
Matt has shown you round The Mushrooms, describing the recording spaces and the acoustic treatment of the walls and ceiling. He has also explained what equipment they have and, more importantly, the expertise they have. But it is now easy to also set up a home recording system on a budget. So where should Mr Mills record?



Option 2: Should he record an album or just his one best track?
If recording at The Mushrooms - they offer special packages to record albums. It takes one hour to record a basic song and another hour to mix the vocals with a backing track. A demo recording will have less than a minute to make the right first impression with a producer or agent.

If recording at home - you will either have to learn how to produce and sound engineer yourself or you can hire in an expert. How long you want to take will depend on how much time and money you are willing to spend.

So, factoring in where you decide to record, would it be better to create a whole album or just one track?

Things to consider:

- Explain which options are most likely to support his career ambition
- Show what research you have done, apart from watching Matt's vid
- If you have made certain estimations and assumptions, state what!
- Justify your decision by clearly showing the calculations you have to

Extension

To be a successful artist must be able to grow their brand and make money from a number of sources. Research what steps Mr Mills will have to take after completing his recording to be able to do this in a full time career. Write an extra five paragraphs explaining how he can do this over a 2 - 5 year period. Make sure to back up your advice with some good maths!

Things to consider:

- How much money can you make from streams on Spotify, YouTube, etc?
- How much can you make from doing live shows (Eg. bars, music venues, TV shows, music festivals, tours, etc)?
- Creating and selling merchandise.
- And so on...

A maths teacher's spare time interest in spoken word hip hop became the focus for a maths project involving year 8/9 students. Using prices from a local recording studio and the cost of home recording equipment, they offered advice for 'Mr K' about his options.