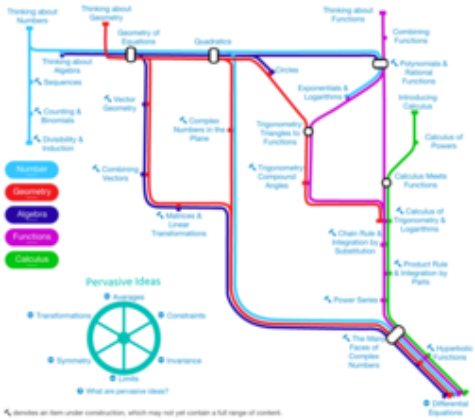
The Cambridge Mathematics Education Project presents Underground Mathematics: Welcome to our new site

Rich resources for teaching A level mathematics

In this Newsletter:

Introduction

Written by Lynne McClure, co-director of Underground Mathematics



We're delighted that our new site, undergroundmathematics.org, is now live and publicly available. We have reorganised the material from the pilot CMEP site extensively, both in response to consultations with teachers from our partner schools and also to reflect the team's evolving view of the connections within mathematics. From the reactions so far, the new site seems to have been favourably received. We do hope you like the clean design and increased functionality. The whole team has worked tirelessly to reach this point; special thanks must also be paid to Ben, our stellar web designer and builder, who has created this new website for us all.

In the first phase of the project, we have been primarily focusing on the stations covering the content of the AS core modules (C1 and C2). As the project continues, we will be developing our coverage further, turning next to the A2 core modules (C3 and C4) and some of the applied content (mechanics, probability and statistics).

We look forward to seeing some of you at the Easter subject association conferences – do come and introduce yourselves! As ever, your feedback is very welcome.

Best wishes, Lynne

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Introduction to the new site

For current users, the structure of the site will seem familiar, as we still have a tubemap, stations and pervasive ideas, but it will look a little different. To help you find your way around the new site, go to the How-to guide, which includes a short video introducing the basics of using the site.

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Finding your favourite resource

If you want to find resources you have used before, don't worry. Individual resources have kept their original names and we have produced a spreadsheet that maps all the resources on the pilot site swanage to the new site. This will show you which stations they now live at and give you a link to take you straight to the resource. To download the document, click here.

To give you time to find your favourites, or update schemes of work, our

swanage site will be available until the end of September.

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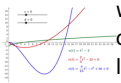
New Resources

Need another reason to check out our new site? While we have been developing the Underground Mathematics site, we have continued developing resources, and there are a number of brand new problems on Underground Mathematics that don't appear on swanage. Below is a selection to whet your appetite, or you can check out our Underground Mathematics hub page, which shows all our recent updates to the site.

Trig tables

Students are asked to fill the empty cells of two partially completed tables. This resource can be used to strengthen students' fluency and understanding of links between trig function values in different quadrants and between different trig ratios of the same angle. There is then an option for students to craft their own incomplete table for others to try.

Thinking constantly



This kinematics problem focuses on integration constants. The warm-up prompts students to think about how the integration constants and initial conditions are connected. The main problem looks at how varying these affects the motion of an object and the graphs that represent this.

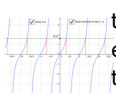
Compose!

$$A(x) = x^2 - 2 \qquad B(x) = 2x + 4$$

$$C(x) = \frac{1}{x} \qquad D(x) = \sqrt{x+2} - 2$$

Students are given four functions and asked to compose them to create the given set of six new functions. In so doing they will exercise the tools of composition of functions including understanding how the domain and range of the original functions impact that of the new functions.

General solutions



By asking students what they can say about A and B if tan A = tan B, this resource introduces the general solutions of trigonometric equations. There are interactive graphs that could be used to explore these and similar equations, revealing how the symmetry and periodicity of the functions comes into play.

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Underground Mathematics community

The Underground Mathematics site is now accessible to all, and to assist new users we want teachers to share their experiences of using our resources with their students. We would value you, our experienced users, contributing to the conversation, which you will be able to do by creating a login for the site and

using the 'Discuss' link that appears at the top of the page when at a resource or station.

Our new Twitter feed is @UndergroundMath,where we will tweet resource suggestions, events we are involved in, and any interesting maths we come across. This replaces @CMEPMaths. You can now also find Underground Mathematics on Facebook here.

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Meet the Underground Mathematics team

Some of the conferences we shall be attending over the next few months

- SMC Conference - 12th March
- ATM Conference - 29th March to 1st April
- MA Conference - 1st to 3rd April

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