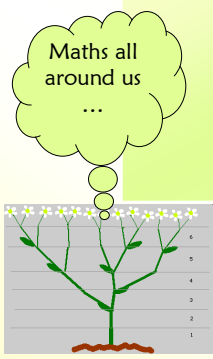


**Reality Maths :
a Motivate long project**

Adam Boddison
Further Mathematics Support
Coventry and Warwickshire

- ▀ St Joseph's College, London
- ▀ Shepshed School, Leicestershire
- ▀ Karachi High School, Pakistan



The Motivate Project

- ▀ Maths and cross-curricular (with a maths basis) videoconferences for schools, which are about:
 - ▀ enrichment of the curriculum
 - ▀ providing opportunities for cross-curricular exploration
 - ▀ providing opportunities to use curriculum learning in more diverse ways
 - ▀ providing a learning community

Pedagogic aims

- ▀ to enrich students' mathematical experience and widen their educational horizons
- ▀ to build confidence & a sense of belonging to a mathematical community
- ▀ to develop creative and critical thinking, and an understanding of maths as a relevant, living subject
- ▀ to enable students to carry out mathematical research for themselves, and present their work to an authentic audience
- ▀ to develop students' communication and presentation skills

Opportunities for students and teachers to ...

- ▀ extend the curriculum in real-life contexts
- ▀ see links between maths and other curriculum areas
- ▀ do own research, follow up own ideas
- ▀ find out what other schools do with the same starting points
- ▀ work collaboratively and / or individually on tasks
- ▀ plan and give presentations on their own work
- ▀ respond to questions about their work
- ▀ receive feedback on their work



What is this project about?

- ▀ Using the local environment, photos and video to find the 'hidden' maths
 - ▀ real and virtual maths trails
- ▀ Maths in nature and culture - Fibonacci numbers
 - ▀ maths and art
- ▀ Using a software tool to explore the world
 - ▀ Google Earth

What will we provide?

- Email briefing a week or two before a VC.
- Plan of the VC a few days before a VC.
- The VCs.
- A DVD of each VC.
- Follow-up resources on the project website.
- Help and advice if you ask us for it ... we won't be giving answers to the problems, although we might give hints or suggest an alternative approach.

Keeping you informed

- We will keep you informed by email about:
 - what the students should be doing
 - what resources are required
 - ...
- If you have any questions at any point, just email or phone us!

Website

- <http://motivate.maths.org/content/node/75>
- Or navigate from motivate.maths.org
 - long projects tab
 - link to "Reality Maths"

First videoconference

- Introductions by schools
 - your school
 - your area
 - the people taking part
- This will be followed by an interactive session led by the presenter, Adam Boddison.
 - with short activities for the students to do
- We will send a list of equipment/resources required in good time.

First term

- VC1 (8 Oct): introduction to first topic
 - schools' introductions
 - short activities for students
- Follow-up work on our website (Oct - Dec)
- VC2 (1 Dec):
 - schools' presentations on that work (about 10 mins)
 - Q&A with each other and Adam
 - short introduction to next term's content

Second term

- VC3 (3 Feb):
 - students give short report on task set in Dec
 - full introduction to second topic area
- Follow-up work on our website (Feb - Mar)
- VC4 (23 Mar):
 - schools' presentations on that work (about 10 mins)
 - Q&A with each other and Adam
 - short introduction to next term's content

Third term

- VC5 (6 May):
 - students give short report on task set in Mar
 - full introduction to third topic area
- Follow-up work on our website (May - June)
- VC4 (25 June):
 - schools' presentations on that work (about 10 mins)
 - Q&A with each other and Adam

Dates

Event	Date	Time	Approx duration
VC1	8 Oct	10.30	1 ¼ hrs
VC2	1 Dec	10.30	1 ¼ hrs
VC3	3 Feb	10.30	1 ¼ hrs
VC4	23 Mar	10.30	1 ¼ hrs
VC5	6 May	10.30	1 ¼ hrs
VC6	25 Jun	10.30	1 ¼ hrs

What do you and your students need to bring to this project?

- Your enthusiasm!
- Commitment to be at all the VCs on time and properly prepared.
- Willingness to participate in all the activities both during VCs and in the follow-up work.
- Willingness to interact with the other participants during VCs.
- Time spent working on the follow-up projects and preparing presentations.

What else might you need to do?

- Ask us if you have questions or problems, eg.
 - the date of a VC has become problematic
 - your students haven't had much time to prepare
- Ask our advice if you are new to presenting mathematical work via VC.
 - see VC best practice on our website
- Tell us as soon as possible if unforeseen circumstances affect your participation in any way.

Preparing students for VCs (1)

It will help things to proceed efficiently and smoothly if students know:

- that they will be expected to take an active part in the VCs
- that they need to speak loudly, clearly and slowly - we all have different accents and we may use different words
- who is going to speak and what they are going to say when feeding back on an activity or giving a presentation
- that they may be visible on screen to us (even if they don't know they are!)

Preparing students for VCs (2)

It will also help things to proceed efficiently and smoothly if students know:

- where the microphone is and if they need to stand somewhere in particular
- that background noise like rustling paper, moving chairs, whispering, ... will be amplified and will prevent us hearing what people are saying
- that there is a slight delay in the sound
- that the picture won't change immediately someone else starts to speak

Delivery to camera

What works:

- pauses
- speaking clearly to the camera
- leaving slides or posters up long enough for the rest of us to read and take in what they say

What doesn't work:

- rushing the delivery
- mumbling into a piece of paper
- moving visual displays on before we have had time to read them and take in what they say

Presenting work via VC

- Hand-prepared work should be:
 - completely static - stick it to a flipchart or wall and zoom the camera in on it
 - also big enough with large black writing on plain light colour background
- PowerPoint
 - run directly through the codec or point camera at laptop screen

Using Powerpoint sensibly

What works:

- large font size
- easy to read fonts
- simple backgrounds
- simple animations
- thick lines

What doesn't work:

- small font size
- **fussy fonts**
- elaborate backgrounds
- animations with too much movement
- fine lines

Colours ...

- How well does this black show up against a light background?
- How well does this purple show up against a red background?
- How well does this cream show up against a dark background?
- How well does this yellow show up against a light background?

Putting too much on a slide and rushing through it ...

- There is so much on this slide that it's really hard to take in what it says. It would be much easier to read this if it was broken up into bullet points and some of it was displayed on another slide. As it is you probably haven't got time to read this before I rush onto the next slide, especially if I don't actually read it aloud so I don't really know how long it will take you to read it all ...
- This applies to posters as well - don't put too much in. We won't be able to read it.

However it is easier to read if ...

- the lines are spaced out more, so that the slide looks less cluttered ... This doesn't look nearly so fearsome as the previous slide, at least I don't think so, even though it also has quite a bit of writing on it. If you haven't found it before, Line Spacing is in the Format menu. This is 1.2, compared to the default of 0.8 on the previous slide.

For more information about ...

- what happens in the VCs
- presenting via VC and using PowerPoint
- go to:
 - <http://motivate.maths.org/content/bestpractice>
 - or use the *VC best practice* tab along the top navigation bar

For information or help ...

- | | |
|--|--|
| Jenny Gage for | Adrian Cullum-Hanshaw for |
| • content of VCs | • technical issues |
| • website and resources | • use of video or animations |
| • administration | • DVDs |
| jag55@cam.ac.uk | acc31@damtp.cam.ac.uk |
| +44 (0)1223 764278 | +44 (0)1223 765669 |
| +44 (0)7515 732687 | +44 (0)774 703 5984 |

or
motivate@maths.org