

WOSIS Maths Conference – 21/05/15

Workshops

Session 1

[A] Jaguar Cars and Tag Island (Karen Russell & Roddy MacLeod -The Glasgow Academy)

- *Jaguar Cars: Maths in Motion*
- *Problem Solving - Maybe some familiar ideas, but hopefully some new ones to whet your appetite.*
- *TAG Island - A whole year group activity focused on financial awareness which can be adapted to suit your requirements.*

[B] How do we support our most able pupils? (Calum Kilgour - St Aloysius' College)

This session will look at how we can make the most of the various maths competitions available and so encourage young people to engage with maths beyond the standard textbook and SQA exam questions. Delegates will have the opportunity to share ideas and best practice, as well as looking at some of the difficulties in engaging young people with mathematics.

[C] Cultivating Curiosity (Lee Gray - St Mungo's Academy)

*“Mental acuity of any kind comes from solving problems yourself,
not from being told how to solve them.”*

Paul Lockhart, A Mathematician's Lament

Mathematics is about so much more than jargon and the rigid application of rules and procedures. In this workshop, Lee Gray (citing work from Guy Claxton, Carol Dweck, Paul Lockhart and others) explores how the mathematics classroom can be the ideal setting for young people to develop resilience, ask questions and get creative. Among others, the following questions will be explored:

- *What do young people really learn from mathematics?*
- *How can we create opportunities for curiosity?*
- *How do we deal with learners' curiosity taking lessons off piste?*

Session 2

[D] Enriching the BGE Experience through Project Work (Elaine McArthur - Jordanhill)

In this workshop we will introduce a selection of student projects we have incorporated into our learning and teaching in the BGE phase. Examples of projects include managing budgets, exploring tax issues, and enriching number through number base coding, practical trigonometry and planning an event using Critical Path Analysis. Some projects are completed individually whilst others encourage group work and cooperative learning. We will explore the key learning objectives of each project and have pupil scripts available for you to see examples of the finished product.

[E] Hands On - low-tech alternatives for group work (Anthony Lacey - Lomond School)

This workshop will look at a range of practical/tactile activities that can be used as an antidote to the virtual world of I.T. Format: display tables with photos of pupils engaged, pupils' work, etc.

[F] Active Learning Techniques (Diana Macgregor & Scott Connor - Kelvinside Academy)

This workshop will showcase the various active learning techniques we use with all year groups. We will share our experience and the resources we use as we encourage pupils to take a more active approach to their learning. Expect to see active learning in the form of Paired Relay Games, Row Games, and Activities from 10Ticks.

[G] Integrating iPads into teaching to deepen learning (Andy Creighton - Cedars)

We're all familiar with spreadsheets, graphic calculators and dynamic geometry packages. An iPad enables you to easily integrate their use into much of teaching and learning in early secondary. The results? Deeper understanding and greater connections across topics. There will be an opportunity to explore the possibilities with the following apps: Numbers, Desmos, Geometry Pad+.

[H] QR codes (Alan Walkey and Fiona Houston - St-Columba's)

The objective of the workshop is to discuss the use of QR codes to create revision questions for year groups to attempt. The rationale for this activity was that students are familiar with the use of this type of technological application, and its use in a mathematical context may help to enrich revision, making it a more engaging activity.

[I] Use of STEM Ambassadors in Mathematics (Kerry O'Shea)

With the promotion of STEM subjects currently riding high on the political agenda, more and more schools are inviting STEM ambassadors into the classroom to enhance the curriculum and inspire pupils. Via STEM ambassadors, teachers can not only get support for enriching the curriculum through activities or events, but can also increase their own understanding of the career paths to which STEM subjects can lead.

During this session we will:

- Explore the various opportunities in which STEM ambassadors can contribute.*
- Introduce case studies of STEM ambassadors demonstrating mathematics in the workplace.*
- Discuss prospects for interdisciplinary learning through the STEM ambassador scheme.*
- Consider the impact of STEM ambassadors on pupils' attitudes and understanding of mathematics.*

[J] Effective Questioning in Mathematics (Dougie MacGregor - HSOG)

For teachers to assess learners' understanding of mathematical concepts, opportunities to ask excellent open questions that challenge and engage learners must be utilised. A teacher posing well planned questions is one of the most effective ways to promote active learning in Mathematics; through which individuals broaden their understanding and ability to apply their skills to a range of situations.

During this session we will:

- reflect on why we as practitioners ask questions*
- focus on what makes a question effective*
- introduce some techniques that could make our questioning more effective*
- consider the impact of effective questioning on learners' literacy development*

[K] How valuable is pupil feedback? - Google Surveys after Exams (Danny Hamilton - HSOG)

This session at HSOG all the classes sitting Maths exams have filled out a Google Survey afterwards. In this workshop we will go through the process of using Google Docs to create a free survey, look at what the pupil feedback tells us, and consider how we can improve the process for next time.

[L] Putting Problems First (Stuart Welsh - HSOG)

Embedding higher order thinking and reasoning skills into every lesson will give our students a deeper understanding of Mathematics. This session aims to highlight the importance of problem solving and offers some useful and easily implemented ideas to encourage learners of all ages and abilities to become more actively involved in their learning of Mathematics.