Sheffield Secondary Mathematics Network

TUESDAY 28th November 2017 LONGLEY PARK SIXTH FORM COLLEGE

THANK YOU to all participants.

PLEASE contact Alida if any of these notes are incorrect.

THANK YOU TO COLLEAGUES WHO PROVIDED MATERIALS TO SUPPORT THE DISCUSSION.

(Several documents attached)

FOCUS on sharing ideas resources that worked well for us in developing pupil resilience and success in problem solving.

- **SHARED**
  - **Resilience Poster** (thank you to D Heller KES). This provides exemplification of what it means to be resilient. Used in KES for pupils to refer to; supporting them in being resilient and recognising this.
  - **Things to try if you are stuck** (thank you to T Hope, Chaucer). Used to encourage pupils to be self-directing and giving strategies that they may use to move on through a task. *To be emailed.*
  - **BARVEMBER** (sourced from White Rose Maths Hub – renamed West Yorkshire Maths Hub) A series of questions 5 each teaching day (from 6th Nov-30th) for November, with the intention of practising and using bar modelling effectively. We looked at 6/11, 13/11, 20/11. The challenge questions were very challenging! It was recognised that at KS2 this is a key technique and at KS3 and KS4 we do not have the practice across topics that KS1 and KS2 have – it would be a valuable tool to use and embed in our practice, perhaps a valid focus for a future meeting?
  - **Starters for problem solving** (thank you to B Rapley Hinde House). Four different tasks for a group of 4 pupils, these skills are then selected to solve GCSE problems – helps pupils focus of breaking down a task and presenting work clearly. Group discussed use of visualiser to share good / poor presentation – opportunity for peer assessment giving pupils insight into exam technique.
  - **Excellent deeper thinking , scaffolding and extension for quadratics** (thank you to M Roden Notre Dame). Links included at end of document.
  - **Pythagoras' theorem in unfamiliar contexts** (A Allen Forge Valley). Written based on new specification questions across boards collated by JustMaths, plus an original question – likened to C2). Used with Y11 in preparation for the unfamiliar – would be more effective if used when taught the skill so pupils are experiencing a range of challenges, maybe alongside trigonometry so that they have to also decide which skill is needed for each context.
  - A selection of **San Gaku** problems (sourced through internet research) a Japanese 'calculation tablet' placed as offerings in a temple.
  - **Isoperimetric Shapes** (sourced through internet research) a series of problems offering scope for a range of outcomes – enables pupils to follow a line of inquiry and share their thoughts as they work through the task.

NEXT STEPS

- **Increased understanding of expectation at GCSE**
- **Ensuring that KS3 provides breadth and depth, mastery of skills**
- **Keep focused on improving skills from KS2 so these are built upon**
- **CPD on extension to bar modelling**

South Yorkshire Maths Hub updates

- Note a number of CPD opportunities and workgroups with relevant foci.

Any queries contact Pete Sides: **psides@symathshub.org.uk**

LINKS:

BARVEMBER:
https://www.tes.com/teaching-resource/barvember-problems-of-the-day-11764693#files

QUADRATICS:
http://west.cdn.mathletics.com/iwb/book/174/17986816.aus_k_quadratic_equations_aus.pdf has good questions on completing the square, and the discriminant, and possibly quadratics in disguise.

Excellent starter/delving deeper questions here http://nrich.maths.org/11270

DOTS http://nrich.maths.org/658

Link to bases http://nrich.maths.org/11009

Extension thinking pieces http://donsteward.blogspot.co.uk/search/label/quadratics

Factorising questions http://donsteward.blogspot.co.uk/search/label/factorising%20quadratics

ATTACHMENTS:

- Resilence poster
- Flipchart version of resilience poster
- Examples unfamiliar Pythagoras'
- Sangaku (2 files)
- Problem solving starter, in class, Y11 rev (3 files)
- Isoperimetric shapes (2 files)

Much to look at and see what works for your pupils.

- Meeting DATES:

w/c 22/1/18 (FORGE VALLEY) THURSDAY 25th January

FOCUS on use of bar modelling (harder contexts and greater range of contexts)

w/c 19/3/18 (Hinde House) THURSDAY 22nd March

w/c 25/6/18 (Notre Dame) THURSDAY 28th June

Many thanks to hosts Longley Park Sixth Form College (tasty cakes, cookies and freebies from the Teach Meet) and to all who attended for valuable input.

Chaucer, Firth Park, Forge Valley, Hinde House, High Storrs, King Ecgbert, Longley Park, Notre Dame, Sheffield Hallam University, Silverdale, Stocksbridge, Tapton, Westfield (14)

Apologies:

Bradfield, Ecclesfield, Firvale, King Edward VII, Meadowhead, Newfield, PRU, SYMathsHub, UTC,

NEXT MEETING – FORGE VALLEY

THURSDAY 25th JANUARY 2018 extending use of bar-modelling …