

DECEMBER 2020

# NEWSLETTER



GREAT NORTH MATHS HUB

**In this month's  
issue:**

**It's Christmas!**

**Training Suite**

**NCETM - Updates**



**December** has arrived with a flurry of festive cheer in the Maths Hub office! Not a normal year, but there is still plenty to celebrate. Not least the end of a long and difficult term for our colleagues in schools. It has amazed us that, despite the challenges they face, they are still committed to providing the best maths education possible for their pupils. To date this term we have worked with over 160 participants from schools, colleges and ITT providers across our region as part of our Work Groups!

January will see the start of many of our Work Groups and again, we are blown away by the commitment of colleagues across our region to develop subject knowledge, pedagogy and local networks in order to benefit pupils.

In this edition of our newsletter we share our thoughts on ways to support pupils in Covid Recovery as well as sharing some NCETM updates.

Finally all that is left to say is we hope all of you reading this have a safe, peaceful and restful holiday.

Merry Christmas!



# Training Suite

The past term in school has seen thousands of pupils across the country having to access their learning from home. Without a shadow of doubt, teachers have provided these pupils with the very best alternative to face to face teaching, working hard to bring elements of face to face teaching into what now has become asynchronous learning.

We are being asked a lot to support schools in teaching maths during this pandemic and through discussions with colleagues across the region, we have been asking ‘what has been lost?’ Yes pupils will have ‘lost’ chunks of learning time around specific curriculum units, but what strikes us, is that what is also lost are opportunities to develop mathematical habits of mind. In their paper, Habits of Mind: An Organising Principle for Mathematics Curricula, researchers Cuoco, Goldenberg and Mark highlight the importance of a maths curriculum to have ways of thinking at its heart. **The paper outlines the following habits of mind and states that students should become:**

**PATTERN "SNIFFERS"  
EXPERIMENTERS  
DESCRIBERS  
TINKERERS  
INVENTORS  
VISUALISERS  
CONJECTURERS  
GUESSERS**

Sitting behind all of these habits of mind is resilience and the desire to keep going. In a classroom, you have your peers and teachers to support you, but at home this same level of support and drive to keep going isn't there. Exploring is great, but alone it can feel difficult. Arguably, this social side of mathematics is a loss of this period of teaching through a pandemic.

So how can we build that back into our curriculum so that students can develop the mathematical habits of mind which Cuoco, Goldenberg and Mark outline?

Many of our schools have started to focus on the questions that they ask to encourage these habits. A quick fix, but posing questions such as ‘What do you notice?’ alongside images such as that below can develop pattern sniffers, and describers. Extending this to ‘What do you wonder?’ develops conjecturers, and guessers. Adding in ‘What if..?’ can model the habit of becoming an experimenter, a visualiser and a tinkerer.



Other colleagues have begun to think about their programmes of study and look at opportunities to develop student's mathematical habits of mind by planning, in a more formal way, opportunities across the year for students to work collaboratively on tasks which help develop these habits. NRich has a great many activities which help develop these habits, along with resilience, curiosity, collaboration and being resourceful. Some of our favourites are:

<https://nrich.maths.org/shifting>

<https://nrich.maths.org/7502>

<https://nrich.maths.org/166>

<https://nrich.maths.org/6971>

By including these into their curriculum mapping, schools are hoping that they can overcome some of the 'loss' of these habits of mind and develop the social side of mathematics which cannot be replicated in the same way outside of the classroom. Allowing students opportunities to work together on these activities teaches them to be comfortable with struggle and comfortable in developing new ways to describe and approach problems. Developing these habits of leads beyond the walls of the maths classroom as they develop skills needed in roles and jobs students may have in the future.

Start with three pairs of socks. Now mix them up so that no mismatched pair is the same as another mismatched pair.



Now try it with four pairs of socks. Is there more than one way to do it?

<https://nrich.maths.org/166>

## NCETM Updates

The NCETM continues to update their KS3 resources. Experienced teachers offer advice, example questions and tips for avoiding student misconceptions in their new 'Planning to teach' videos and accompanying resources. These can be found here:

<https://www.ncetm.org.uk/features/which-ks3-topic-are-you-teaching-next/>

The team have also recently published an article looking at some myths which surround the use of representations in the primary classroom. Alongside this, we are given the chance to watch how representations are used effectively in the primary video lessons. The article and lessons can be found here:

<https://www.ncetm.org.uk/features/representations-in-our-primary-video-lessons/>

In a new podcast episode, an interview with a new teacher of Core Maths, as well as an insight into Core Maths over the past five years. Well worth a listen!

<https://www.ncetm.org.uk/podcasts/core-maths-five-years-on/>

#EncourageSupportCollaborate  
and...

Merry  
Christmas!