



The Learning Institute

# Encouraging a positive attitude towards learning maths

## Overview

Many children and young people experience a negative attitude towards learning mathematics. This CPD task seeks to support practitioners by providing practical ideas to engage learners using thoughtful and relevant approaches.

## Target audience

Teaching assistants

## Duration

Approximately 1 hour

The Learning Institute provides opportunities for individuals and communities through high quality education, training and research programmes that challenge personal barriers and promote social inclusion. To find out more, please get in touch.

## Introduction

We will all have experienced students who are lacking the motivation to complete mathematical tasks. It could be that they have already decided before the lesson starts that they will be unable to understand or concentrate on the learning. They may try their hardest to understand but still be unable to work independently. They may even be disruptive and do their utmost to avoid the task. In each case we are observing students who are struggling to access or engage with mathematical tasks. Students may respond emotionally to this feeling of failure by becoming upset or angry. In cases where the child has some resilience they will come and ask for help. This CPD considers why students may be struggling to engage with mathematical tasks and give you some practical tasks to support their engagement.

## Objectives

- To understand why students can become disengaged when learning mathematics
- To know some strategies that can support student engagement
- To support personal reflection on how to support pupil engagement in mathematics

## Resources

Pen and paper for note taking

Internet access to following:

- TEDx Talk “Five Principles of Extraordinary Math Teaching” by Dan Finkel, available at [www.youtube.com/watch?v=ytVneQUA5-c](http://www.youtube.com/watch?v=ytVneQUA5-c)
- Prof Mike Askew (President of the Mathematical Association) speaking at the Maths Anxiety Summit [video] available at [www.youtube.com/watch?v=iuowAZpkSLc](http://www.youtube.com/watch?v=iuowAZpkSLc)
- “Effecting affect: developing a positive attitude to primary maths learning” by Sparrow and Hurst [article] available at <http://files.eric.ed.gov/fulltext/EJ885816.pdf>

## Task 1: Why do pupils exhibit a negative attitude to learning mathematics?

### Why do students become disengaged?

In the video detailed below, Dan Finkel considers Five Principles to support maths engagement. He suggests that mathematics is not about following rules but about playing, exploring, developing curiosity and finding our own answers. He proposes that rich learning encourages students to become more engaged with learning maths.

Watch Dan Finkel’s TEDx talk “Five Principles of Extraordinary Math Teaching”, available at <https://www.youtube.com/watch?v=ytVneQUA5-c> [running time approx. 15 mins].

Make notes on the following:

- What are the 5 rules that Dan Finkel says supports learning
- Why does he think this?
- How could you use this to support children's engagement?

### Why do students experience maths anxiety?

Mike Askew, Professor of Mathematics Education at King's College, University of London and a former primary school teacher, considers why students develop maths anxiety and how we consider how to support it.

Watch Mike Askew's speech at the 2018 Maths Anxiety Summit, available at <https://www.youtube.com/watch?v=iuowAZpkSLc> [running time approx. 14 minutes] and make notes on the following:

- Why does Mike Askew suggest that children get maths anxiety?
- How does he suggest we adapt our teaching to support maths anxiety?

### Task 2: How we support student engagement with mathematics

Read the article about strategies to support pupil participation in mathematics, "Effecting affect: developing a positive attitude to primary maths learning" by Sparrow and Hurst, available at <http://files.eric.ed.gov/fulltext/EJ885816.pdf>.

Using the ideas from the videos presented by Dan Finkel and Mike Askew and the practical examples presented in this article, jot down some ideas which could support the engagement of mathematical learners relevant to your age group.

### Task 3: Reflection on learning

Note down your responses to the following questions:

- What knowledge did I already have that has been refreshed by this CPD?
- How has this CPD developed my knowledge and understanding?
- How can I apply what I now know to my practice?
- If you enjoyed or would like to give feedback about this CPD experience then please contact [cpd@learninginstitute.co.uk](mailto:cpd@learninginstitute.co.uk).

### Sources

Learnus (2019) *Maths Anxiety Summit London 2018 - Prof Mike Askew*. 19 March. Available at: <https://www.youtube.com/watch?v=iuowAZpkSLc> (Accessed: 12 May 2020)

Sparrow, L. and Hurst, C. (2010) 'Effecting affect: developing a positive attitude to primary maths learning', *Australian Primary Mathematics Classroom*, 15 (1), pp. 18-24. Available at: <http://files.eric.ed.gov/fulltext/EJ885816.pdf> (Accessed: 12 May 2020)

TEDx Talks (2016) *Five Principles of Extraordinary Math Teaching: Dan Finkel at TEDxRainier*. 17 February. Available at: <https://www.youtube.com/watch?v=ytVneQUA5-c> (Accessed: 12 May 2020)

## Further reading

There are some useful resources on the following websites:

National Centre for Excellence in the Teaching of Mathematics (NCETM) - [www.ncetm.org.uk](http://www.ncetm.org.uk)

Mathematics Association - [www.m-a.org.uk](http://www.m-a.org.uk)

Association of Teaching of Mathematics (ATM) - [www.atm.org.uk](http://www.atm.org.uk)

NRICH (part of University of Cambridge Millennium Mathematics Project) - <https://rich.maths.org>

Times Educational Supplement (TES) - [www.tes.com](http://www.tes.com)

Students currently studying with The Learning Institute may find this article useful:

Rhydderch-Evans, Z. (2002) 'Attitude is everything', *Mathematics Teaching*, 181, pp. 20-23.

## Want to learn more?

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