Shaping Success in Maths and English

GCSE Resits: Develop Your Practice (Level 5 Module) Maths

Trainer: Julia Smith

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WELCOME

BACKGROUND

- This module was commissioned in 2015 by the Education and Training Foundation to increase capacity in the education and training workforce to deliver GCSE mathematics.
- The module specification & content was developed by the East Midlands Centre for Excellence in Teacher Training (emCETT) and updated in April 2016 after piloting.
- The module in particular supports practitioners working with young adults (16 - 19) who are re-taking GCSE mathematics, having failed to achieve a Grade C or above previously.
- Watch the video http://youtu.be/FiKQ3FW02GI

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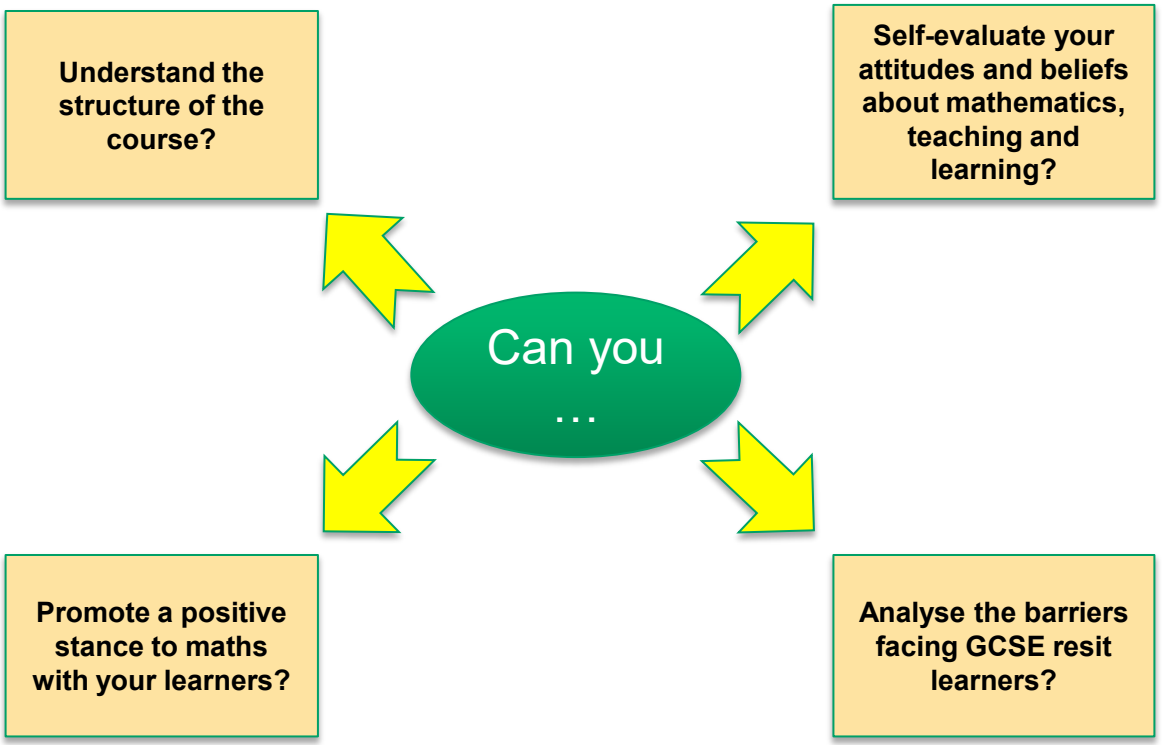
01

SESSION OBJECTIVES

LEARNING OUTCOMES



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02

COURSE OUTLINE

COURSE OUTLINE

1.	Course introduction & barriers to learning
2.	Engaging & motivating learners in GCSE mathematics
3.	Analysing new GCSE course requirements
4.	Using assessment approaches to support GCSE mathematics learning

COURSE OUTLINE

5.	Effective practice in teaching mathematics
6.	Improving Learning in Mathematics
7.	Using formative assessment in maths
8.	Making connections
9.	Putting it all together
10.	Participant presentations. Course review.

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03

FLIPPED LEARNING

Flipped classroom

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*'The flipped classroom describes a **reversal of traditional teaching** where students gain first exposure to new material outside of class, usually via reading or lecture videos, and then class time is used to do the harder work of assimilating that knowledge through strategies such as problem-solving, discussion or debates.'*

Vanderbilt University, Center for Teaching

Flipped classroom

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Between taught sessions, you will be required to complete a preparation task(s) before the next session, e.g.

– Read an article

– Watch a video

These tasks provide the knowledge & understanding required to participate fully in the next taught session - ***so it is vital that you complete them!***

Flipping the maths classroom

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Hegarty maths http://mathswebsite.com/about/flipped-learning or

Khan Academy https://www.youtube.com/watch?v=nTFEUsudhfs

Watch the video(s) before the next session.

Could you flip your maths classroom?

Preparation tasks will usually be introduced at the end of each session, and can also be found on the *Edmodo* website.

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COURSE COMPLETION

Criteria for successful completion

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To successfully complete the course you must:

Attend at least 8 out of the 10 sessions.

Participate fully in all of the activities in the sessions.

Complete preparation tasks between sessions.

Complete all surveys & evaluations.

Collaboratively plan & deliver a group presentation in the final session.

Optional accreditation

Level 5 award (12 credits) from Ascentis.
Additional accreditation fee of £200.
Additional written assessment task.
Will require deeper engagement with relevant literature (links to further reading will be given at the end of each session).

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SELF EVALUATION

Initial self-evaluation

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Complete the online self-evaluation before the next session (if you have not already done so).

Reflect on your own teaching practice.

- Look at each statement in turn and decide how common it is in your lessons. Be honest and say how common it is rather than give the answer you think may be expected.

Reflect on your beliefs about mathematics, teaching and learning.

- For each section give the three statements a percentage weighting (so that the sum of the three adds up to 100%).

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GCSE RESITS – CURRENT VIEW

Maths 16-19

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Since Sept 2014 it has been a condition of funding for learners on study programmes without a GCSE A*-C to continue studying maths

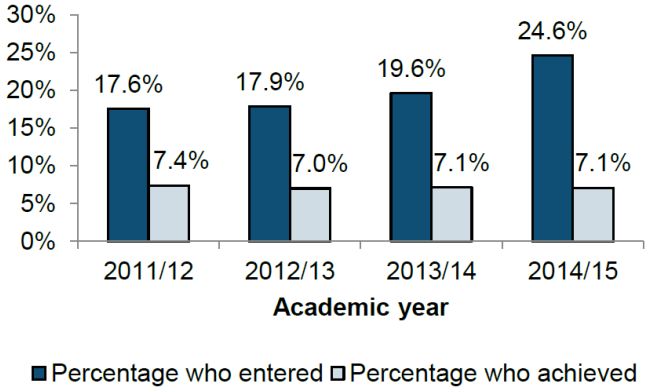
Since Sept 2015 it has been a condition of funding for all such learners who have a GCSE D grade to re-take GCSE maths

RECENT TRENDS

Maths: For those who had not achieved A* to C in maths by the end of Key Stage 4, entries in GCSE maths have increased in each year since 2011/12. Achievement of A* to C has remained steady.

Entry to GCSE maths and achievement of A*-C in GCSE maths at 16-18

(Of those not achieving A-C in maths GCSE by end of KS4)*



Thousands

Maths	2011/12	2012/13	2013/14	2014/15
Left KS4 without A*-C	**232.4**	**211.2**	**186.2**	**178.4**
Of which:				
Entered GCSE	40.8 (17.6%)	37.7 (17.9%)	36.5 (19.6%)	43.9 (24.6%)
Achieved A*-C	17.2 (7.4%)	14.8 (7.0%)	13.2 (7.1%)	12.6 (7.1%)

(Data from Statistical First Release, Level 1 and 2 attainment in English and maths by students aged 16-18: academic year 2014/15)

PARTICIPATION RATES

	Students at end of KS4 in 2012/13	16-18 students by 2014/15 Percentage who subsequently entered:				
	Number who did not achieve A*-C in GCSE mathematics	GCSE mathematics	Mathematics at level 2	Mathematics at level 1	Mathematics at entry level	Total entries
Total	178,374	24.6	7.0	17.1	14.2	63.0
16-18 participating students	159,905	26.9	7.5	18.3	15.0	67.8
State-funded mainstream schools	22,252	78.0	1.9	3.0	1.7	84.7
Sixth Form Colleges	8,403	60.9	8.2	11.9	4.8	85.8
Other FE sector colleges	94,368	19.3	9.2	22.4	20.6	71.5
Special schools	4,931	3.7	0.4	2.6	18.9	25.6
Part-time students in reported schools and colleges	10,012	3.3	5.3	14.7	10.5	33.8
Work-based learning	8,607	2.0	11.9	39.4	2.0	55.3
Other providers	11,332	14.2	6.5	12.6	14.6	47.9

SUCCESS RATES

	Students at end of KS4 in 2012/13	16-18 students by 2014/15				
		Percentage who subsequently achieved:				
	Number who did not achieve grades A*-C in GCSE mathematics	A*-C in GCSE mathematics	Mathematics at level 2	D-G in GCSE mathematics	Mathematics at level 1	Mathematics at entry level
Total	178,374	7.1	6.6	15.0	16.5	15.4
16-18 participating students	159,905	7.7	7.1	16.4	17.6	16.3
State-funded mainstream schools	22,252	19.6	2.9	52.0	2.9	2.5
Sixth Form Colleges	8,403	27.7	7.5	28.5	13.1	6.4
Other FE sector colleges	94,368	4.9	8.3	11.9	21.3	22.3
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2020 Calculated Grades

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“What is your experience?

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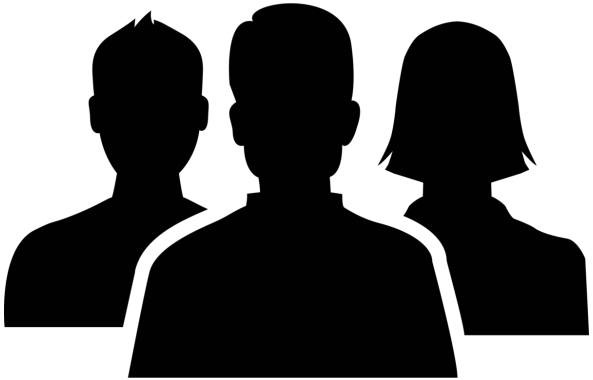
THE LEARNERS

LEARNERS RE-TAKING GCSE MATHS



- What motivates your GCSE learners?
- Why are they resitting GCSE maths?
- What are their past experiences of maths learning?
- What are the barriers to them engaging & succeeding in their resit?

Why do learners disengage from maths?

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Research suggests three key factors:

- Previous negative experiences at school
- Lack of perceived relevance to employment & real-life contexts
- Low learner self-confidence

ETF (2014) *Effective Practices in Post-16 Vocational Maths*

Developing self-belief

‘It is not just behaviour it is managing fear, it is managing a very deep sense of failure, being rubbish’.

‘In the early stages [of teaching] *it’s 90% psychology and only 10% maths’*

(Quotations from maths teachers: ETF (2014) ‘Effective Practices in Post-16 Vocational Maths’)

Maths Anxiety

"A feeling of tension, apprehension, or fear that interferes with maths performance" (Ashcraft, 2002)

Results in:

Avoidance

Lower grades

Negative attitudes & motivation towards maths

Negative self-perceptions

Impact on working memory

CAROL DWECK – GROWTH MINDSET

Fixed mindset	Growth mindset
Intelligence is static	***Intelligence can be developed***
Leads to a desire to *look* smart and therefore a tendency to:	Leads to a desire to *learn* and therefore a tendency to:
• avoid challenges	• embrace challenge
• give up easily due to obstacles	• persist despite obstacles
• see effort as fruitless	• see effort as path to mastery
• ignore useful feedback	• learn from making mistakes & criticism
• be threatened by others success	• be inspired by others' success

https://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve

How to learn maths (Jo Boaler)

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Watch the video clip from Jo Boaler's *'How to Learn Maths for Students'*.

As you watch, note down key points for further discussion

https://www.youcubed.org/students/

https://www.youcubed.org/online-teacher-courses/

Positive norms to encourage in the maths classroom

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1. Everyone can learn maths to the highest level
2. Mistakes are valuable
3. Questions are really important
4. Maths is about creativity & making sense
5. Maths is about connections & communicating
6. Depth is more important than speed
7. Maths class is about learning not performing

Final thoughts

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How can you overcome affective barriers to maths learning?

What strategies can you use to develop growth mindsets & a positive stance towards mathematics?

How can you involve others within your organisation?

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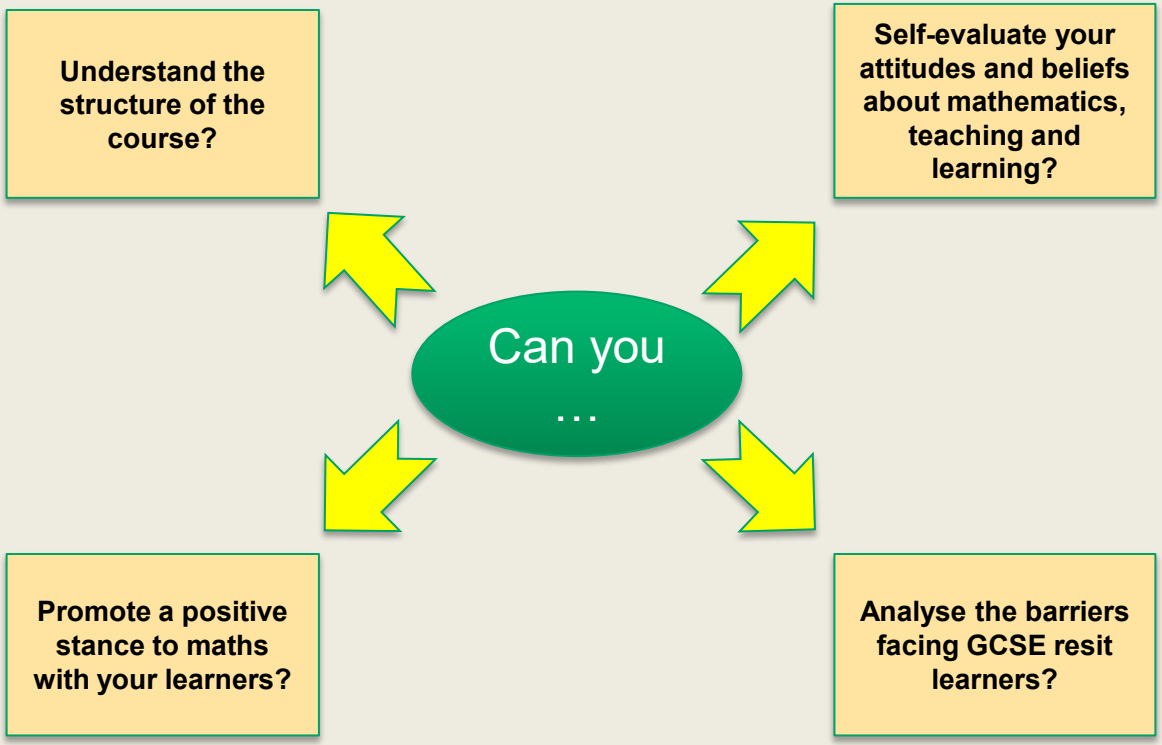
Review of the day

Learning outcomes



Follow-up activities

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Watch the Carol Dweck video https://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve

Download Jo Boaler's Setting up Positive Norms in the Maths Class

– follow some of the links to further information on each key point.

Explore Boaler's website: www.youcubed.org

Further reading
(for those pursuing accreditation)

Ashcraft, M.H. and Krause, J.A. (2007) 'Working memory, mathematics performance and math anxiety'. *Psychonomic Bulletin & Review*. 14(2), 243–248. [available at http://link.springer.com/article/10.3758%2FBF03194059].

Boaler, J. (2015) *Mathematical Mindsets: Unleashing Students' Potential Through Creative Math, Inspiring Messages and Innovative Teaching*. San Francisco: Jossey-Bass.

Dweck, C.S. (2008) *Mindsets and Math/Science Achievement*. [available at http://www.growthmindsetmaths.com/uploads/2/3/7/7/23776169/mindset_and_math_science_achievement_-_nov_2013.pdf].

The Research Base (2014) *Effective Practices in Post-16 Vocational Maths: Final Report*. London: The Education and Training Foundation. [available at http://www.et-foundation.co.uk/wp-content/uploads/2014/12/Effective-Practices-in-Post-16-Vocational-Maths-v4-0.pdf].

Preparation for next session

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1. Complete the online self-evaluation of your teaching practice (If you have not already done so).
2. Watch the Video(s) on flipped learning:
   http://mathswebsite.com/about/flipped-learning
   https://www.youtube.com/watch?v=nTFEUsudhfs
3. Access the MEI Contextualisation Toolkit website:
   http://www.mei.org.uk/contextualisation-toolkit
   - Download & read ***A guide to developing contextualised resources***. Note down key points for discussion in session 2.
   - Download & familiarise yourself with the ***Context grid***.

An opportunity for reflection: Engaging with the ETF's Professional Standards

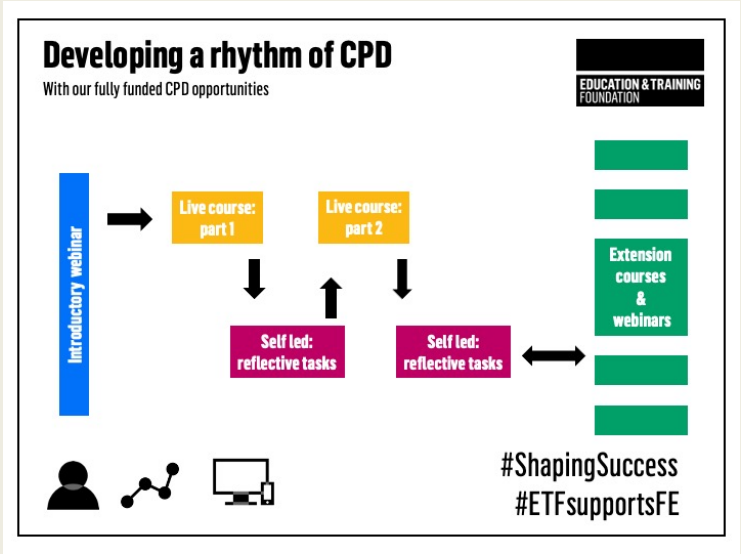
- In preparation for each of our courses we ask that you reflect upon your own professional progress and development in relation to the Education and Training Foundation's Professional Standards for FE Teachers.
- You may have also completed the ETF Professional Standards self-assessment Tool: Professional Standards - Self Assessment.
- You may now wish to revisit the Professional Standards:
  - *has your learning today supported your progression in relation to the professional standards?*
  - *has your learning today encouraged you to explore other areas of professional and/ or personal development as they relate to the professional standards?*

What Next?

We hope this L5 GCSE MATHS RESIT course has a positive impact on your practice and your learners.

We would appreciate your feedback: jo.byrne@ccconsultancy.co.uk

This course is part of the Education and Training Foundation's (ETF) rhythm of CPD.



Continue your professional development:

- The PDNorth CPD newsletter: https://bit.ly/PDNmail
- Further courses in the pathway: bit.ly/ShapingFE2020
- Foundation Online Learning: www.foundationonline.org.uk

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THANK YOU
ANY QUESTIONS?