

LBAT Getting Started Guide to Maths Anxiety

Definition

'Maths anxiety is a negative emotional reaction to mathematics, which can interfere with the ability to perform mathematical tasks. Maths anxiety has many different manifestations, including emotional- for example, feelings of apprehension, dislike, tension, worry, frustration or fear, physical- for example, butterflies, racing heart, struggling to catch your breath, or behavioural- for example misbehaving in class, avoiding maths assignments, not studying maths beyond the minimum expected level.'

Hembree (1990)

Key Facts

- Maths anxiety is thought to impact on around 25% of the population.
- Parental attitudes and anxiety towards maths can impact on children and a lack of confidence in teachers can perpetuate maths anxiety in pupils.
- Working memory is susceptible to anxiety, this can impact on the child's ability to engage with maths tasks.
- In the classroom, maths-anxious children may present as not understanding, or refusing to do their maths. Anxiety causes the body to produce adrenaline to prepare for fight or flight, however in the classroom we can neither fight nor flee, so more adrenaline is produced. For some children, this problem can be so acute that looking at a maths problem can lead to paralysing anxiety.
- The anticipation of doing maths can raise anxiety- in recent neurological research it was shown that the part of the brain in maths-anxious children that is activated when anticipating doing maths is the same part that is activated when anticipating physical harm (Lyons and Beilock, 2012).

Causes include:

- Environmental causes, e.g. classroom issues, parental pressure, perception of maths as a rigid set of rules
- Intellectual anxiety, e.g. mismatch of learning styles/ teaching styles, self-doubt
- Personality factors, e.g. reluctance to ask questions in class, low self-esteem

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Indicators include:

- **Physical indicators** e.g. dry mouth, shortness of breath, increased heart rate, clenched fists, headaches, stomach aches, nail and lip biting
- **Psychological indicators** e.g. low self-esteem, extreme nervousness, confusion, disorganisation of thought, inability to recall and/ or retain information

Key strategies for support:

- Provide concrete materials- 'seeing' the maths provides a better chance of understanding. Much maths anxiety is caused by maths becoming too abstract too soon.
- Represent concepts pictorially e.g. using diagrams, drawings and models- this helps with visualisation.
- Look for connections and patterns e.g. $3+4=7$, therefore $30+40=70$.
- Focus on children's understanding rather than memorising facts.
- Create a safe environment where mistakes are part of the learning process.
- Encourage children to ask questions and engage in a two-way dialogue with the teacher about their maths learning.
- Show that you enjoy maths- convey a positive image of maths.
- Avoid putting children into maths sets or streams.
- Show children that their perseverance and resilience are valued.

Hornigold, (2017)

- Include lots of opportunities to play games and **remember to SMILE!** 😊

Useful resources for further reading:

- ***Maths Learning Difficulties, Dyslexia and Dyscalculia*** (chapter 3) by Steve Chinn, (2019)
- ***More Trouble with Maths- 3rd Edition*** (chapter 7) by Steve Chinn, (2020)
- ***Understanding Maths Learning Difficulties*** (chapter 2) by Judy Hornigold, (2017)
- ***Dyscalculia Pocketbook*** by Judy Hornigold, (2015)
- ***The Maths Anxiety Trust:*** <http://mathsanxietytrust.com/>
- ***Maths Anxiety Summit London 2018 - Prof Mike Askew on Maths Anxiety:*** <https://www.youtube.com/watch?v=iuowAZpkSLc>

For additional information and support, contact your LBAT Advisory Teacher.