

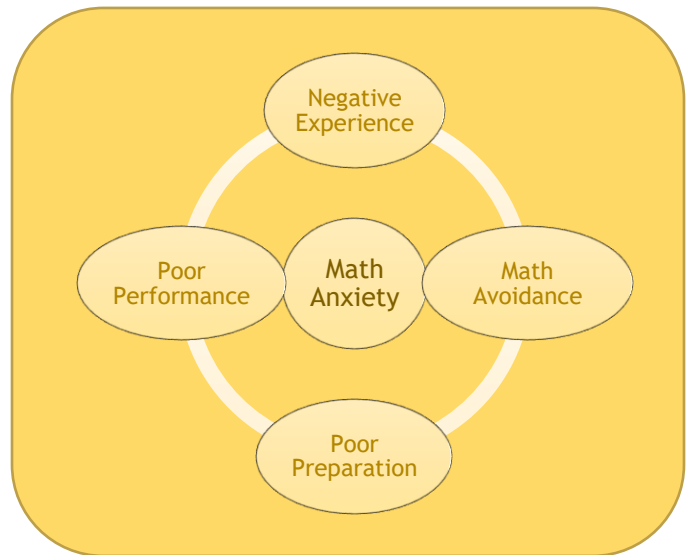
Math Anxiety

Part I: Understanding Math Anxiety

What Is Math Anxiety?

Math anxiety is “feeling of tension and anxiety that interferes with the manipulation of numbers and the solving of mathematical problems in ordinary life and academic situations.”

D.R. Hopko, et al., “The Effects of Anxious Responding on Mental Arithmetic and Lexical Decision Task Performance,” *Journal of Anxiety Disorders* 17 (2003): 648.



Part II: The Causes of Math Anxiety

Lack of a Positive Support Network

- Family, friends, teachers

Negative Teaching Experiences

- Authoritative and/or passive teaching style
- Fixed and strict curriculum goals
- Memorization (rather than active learning)
- Individual activities (rather than group problem-solving)

Setting

- The math classroom and/or timed, high-stakes events

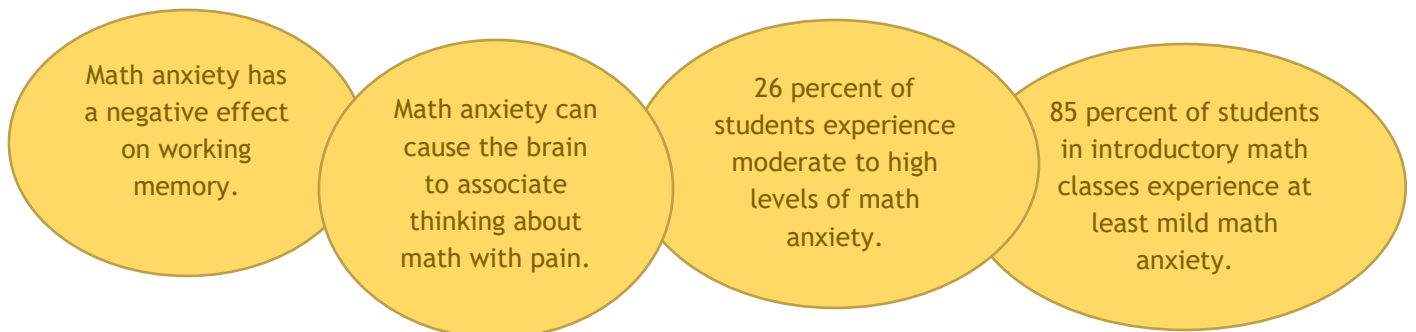
Lack of Self-Confidence

- Reluctance to become an active learner and fear of failure

Mark H. Ashcroft and Alex M. Moore, “Mathematics Anxiety and the Affective Drop in Performance,” *Journal of Psychoeducational Assessment* 27 (2009): 197-205.

W.G. Jones, “Applying Psychology to the Teaching of Basic Math: A Case Study,” *Inquiry* 6 (2001): 60-65.

Ian M. Lyons, “When Math Hurts: Math Anxiety Predicts Pain Network Activation in Anticipation of Doing Math,” *PLoS ONE* 7 (2012): e48076.
<https://doi.org/10.1371/journal.pone.0048076>.



Part III: Overcoming Math Anxiety

Self-Reflection

Detail your previous experiences with math and reflect upon how they have shaped your perceptions of this field.

- How have your family, friends, teachers, and previous math experiences contributed to your views of math?
- If your perceptions are not positive, what could you do to reframe your views?

The “Big” Picture

- Humanity: How has math contributed to human civilizations?
- University: Why does the university require students to demonstrate proficiency in math?
- Academics
 - How does the math course I am currently taking fit into the various “branches” of mathematical studies and why is it significant?
 - How is proficiency in math important for success in other academic courses and my major?
- Relevance: How do we use math skills in everyday life and how might I apply mathematical ideas in my post-collegiate life?

Practice Active Learning Strategies

- Participation: Become an active member of the class.
 - Complete all homework on time.
 - Take focused notes (e.g., definitions, formulas) and review regularly.
 - Ask questions.
 - Contribute to discussions.
 - Practice problem-solving regularly.
- Group Work: Working in groups increases opportunities for dialogue and offers a supportive approach to problem solving.
- Academic Support: Utilize tutoring and Supplemental Instruction (www.uidaho.edu/tcs).

Practice Self-Care

- Deep Breathing
- Stay Calm
- Think Positively
- Focus on Wellness
- Maintain Perspective

Resources

Ashcroft, Mark H., and Alex M. Moore. “Mathematics Anxiety and the Affective Drop in Performance,” *Journal of Psychoeducational Assessment* 27 (2009): 197-205.

Ellis, Dave. *Becoming a Master Student*. 13th ed. Boston: Cengage Learning, 2011.

Finlayson, Maureen. “Addressing Math Anxiety in the Classroom.” *Improving Schools* 17 (2014): 99-115.

Fiore, Greg. “Math-Abused Students: Are We Prepared to Teach Them?” *The Mathematics Teacher* 92 (1999): 403-406.

Hopko, D.R., et al. “The Effects of Anxious Responding on Mental Arithmetic and Lexical Decision Task Performance.” *Journal of Anxiety Disorders* 17 (2003): 647-665.

Lyons, Ian M. “When Math Hurts: Math Anxiety Predicts Pain Network Activation in Anticipation of Doing Math,” *PLoS ONE* 7 (2012): <https://doi.org/10.1371/journal.pone.0048076>.

Tobias, Sheila, and Carol Weissbrod. “Anxiety and Mathematics: An Update.” *Harvard Educational Review* 50 (1980): 63-70.