

Teacher Guide: Focused Breathing to Reduce Math Anxiety

Time: 8 minutes

Audience: Teachers of secondary math students

Research citation

- Beilock, S. L., & Willingham, D. T. (2014). Math anxiety: Can teachers help students reduce it? Ask the cognitive scientist. *American Educator*, 38, 28–33. <http://eric.ed.gov/?id=EJ1043398>
- Khng, K. H. (2016). A better state-of-mind: Deep breathing reduces state anxiety and enhances test performance through regulating test cognitions in children. *Cognition and Emotion*, 31(7), 1–9.

Research background

- A focused breathing exercise can reduce math anxiety and boost performance by relaxing the mind and freeing up working memory resources.
- Focused breathing can be done as a ritual that students can perform before challenging math tasks, such as tests or quizzes. Rituals have been shown to improve performance on high-anxiety math tasks by reducing anxiety.
- This is related to “mindfulness.” Studies have found that mindfulness improves the emotional response to anxiety-producing testing situations, freeing up working memory resources and improving performance.
- This activity is adapted from the Transforming Education Mindfulness Toolkit, available at: Transforming Education. (2017). *Mindfulness Toolkit*. Retrieved from: <https://www.transformingeducation.org/mindfulness-toolkit/>.

Timing	Topic/Steps/Activities	Teacher Notes
1 minute	<p>Transition into activity</p> <ol style="list-style-type: none"> 1. Ask students to turn their attention to you. They can remain at their desks. 	<p><i>This activity will be more impactful if the classroom space is calming and welcoming, with plants (if possible) and comfortable lighting.</i></p>
5 minutes	<p>Focused breathing exercise</p> <ol style="list-style-type: none"> 1. Guide students through the focused breathing exercise. <p><i>Suggested script</i></p> <ul style="list-style-type: none"> • We're going to try a three-minute ritual to relax our bodies and minds before we take this [test/assessment], so we can help our brains get ready. If you do not wish to participate, you are free to relax and sit quietly for the next few minutes. • To begin, make your back as straight as possible; do not lean forward or lean too hard on the back of your chair. Make sure your head is straight and facing directly forward. Place your feet squarely on the floor. • Close your eyes or just relax your gaze onto the floor in front of you. • Relax your hands onto your lap, folding your right hand inside the left, and let your feet relax on the floor. • Make your face loose like jelly. Relax your forehead and jaw. Unclench your teeth. • Pretend your shoulders are heavy and let them hang while keeping your back straight. • Bring your attention to your belly and let it relax. • Check to see that your back is still straight. • Now direct your attention to your breathing. Notice that when you breathe in, your belly gets bigger and that it gets smaller as you breathe out. Don't try to change anything. Just try to focus deeply on your breath, just as it is. • If you get distracted by your thoughts, no problem—simply bring your attention back to your breath [*longer pause*]. • When you're ready, gently open your eyes and come back to the room. • Thank you. 	
2 minutes	<p>Transition out of activity</p> <ol style="list-style-type: none"> 1. Allow students to transition calmly to their next activity without having to hurry. 	