

Tracy Zager

Tracy Zager loves teaching and learning. As a student, she studied mathematics, geology and physics at Wellesley College, physics and economic and social history at the University of Oxford as a Rhodes scholar, and teaching with an emphasis on special education at the University of Washington in Seattle. She finally traded in her backpack for a teacher's tote, and happily taught fourth grade in a public (state) school for several years. When her daughters came along, she gave up her classroom to work with pre-service teachers and their in-service mentors. After many years in adult education in a wide range of urban, suburban and rural schools, Tracy began extensive field research for her 2017 book, *Becoming the Math Teacher You Wish You'd Had: Ideas and Strategies from Vibrant Classrooms*.



APPEARING AT

MELBOURNE

All sessions for this conference are 2 hours in length

THURSDAY 18 MAY 2017

THURSDAY 18 MAY 2017

THURSDAY 18 MAY 2017

FRIDAY 19 MAY 2017

FRIDAY 19 MAY 2017

FRIDAY 19 MAY 2017

SATURDAY 20 MAY 2017

SATURDAY 20 MAY 2017

SATURDAY 20 MAY 2017

"I'm Not Really a Maths Person": Coaching Anxious Primary Teachers - Part 1

"I'm Not Really a Maths Person": Coaching Anxious Primary Teachers - Part 2

Teaching Students to Make Connections in Maths

Gut Instincts: Developing ALL Students' Mathematical Intuitions

Teaching Students to Make Connections in Maths (Repeat)

Developing Risk Takers: Teaching Students To Give It a Go

Maths Curriculum Makeovers: Inviting Students to Rise to a Challenge - Part 1

Maths Curriculum Makeovers: Inviting Students to Rise to a Challenge - Part 2

Developing Risk Takers: Teaching Students To Give It a Go (Repeat)

THURSDAY 18 MAY

SESSION 1: 8.30AM - 10.30AM AND SESSION 2: 11.00AM - 1.00PM

"I'm Not Really a Maths Person": Coaching Anxious Primary Teachers, Part 1 & 2

About one-third of working primary school teachers have maths anxiety. Many other teachers are not anxious, but dislike maths. Teachers' personal feelings about maths affect students' achievement and beliefs. In this double session, participants will share lessons learned during four years of coaching a K-6 school with a focus on transforming reluctant maths educators' approaches to teaching and learning. Participants will work together on specific coaching activities, including planning, rehearsing and teaching an instructional routine found to be highly accessible for all teachers and students. Participants will leave with new ideas to try and fruitful maths tasks to use with their staff.

SESSION 3: 2.00PM - 4.00PM

Teaching Students to Make Connections in Maths

Many students see maths content as a series of discrete topics, rather than a landscape of inter-connected concepts. Participants will analyse transcripts, problems and student work from different classes to develop strategies to teach relational thinking. For example, a student argued that $38 \times 12 = 40 \times 10$ because she could "take the 2 from the 12 and give it to the 38". What connection was this student trying to make? Does it work? If so, why? If not, why not? As a teacher, where should we go with this claim so students develop the thinking skills to test it, and deep understanding of the operations? Through classroom stories, discussion and collaborative work on rich maths problems like this one, participants will learn how to teach students to make – and break – mathematical connections. Throughout, we'll focus on the importance of multiple models and representations to encourage relational thinking.

FRIDAY 19 MAY

SESSION 1: 8.30AM - 10.30AM

Gut Instincts: Developing ALL Students' Mathematical Intuitions

We've long misunderstood mathematical intuition, assuming it's innate rather than developed through high-quality learning experiences. As a result, students who haven't yet had opportunities to foster their intuitions are often denied access to meaningful mathematics. Through analysis of powerful classroom teaching and learning, participants will explore three instructional strategies you can use to empower ALL students to grasp mathematics intuitively.

SESSION 2: 11.00AM - 1.00PM

Teaching Students to Make Connections in Maths (Repeat)

See Day 1, Session 3

SESSION 3: 2.00PM - 4.00PM

Developing Risk Takers: Teaching Students to Give It a Go

Risk taking is an essential disposition of mathematicians, and a key component of a growth mindset. Students must leave their comfort zones to make conjectures, embrace challenges, persevere and learn from mistakes. In this session, we will focus on instructional decisions and teaching moves that promote risk taking and teach mathematical courage. Participants will analyse discourse, student work, video and written feedback from several classrooms, and begin adapting strategies for their own teaching contexts.

SATURDAY 20 MAY

SESSION 1: 8.30AM - 10.30AM AND SESSION 2: 11.00AM - 1.00PM

Maths Curriculum Makeovers: Inviting Students to Rise to a Challenge, Part 1 & 2

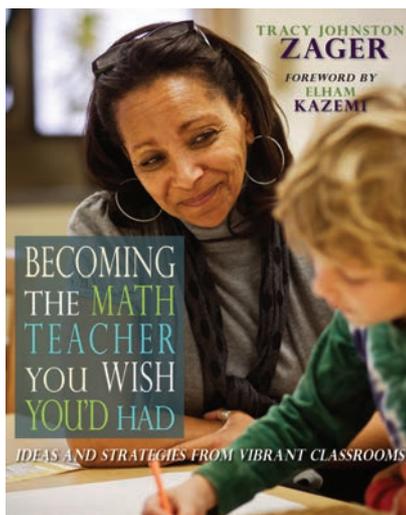
Mathematicians love a challenge – a worthy problem that occupies their mind until they solve it. How can we help our students taste this kind of satisfaction? How can we teach them to rise to meet the problem, to grapple with confusion, to focus, to persist, to develop strategies for when they're stuck and to keep working toward gratification, even if it's delayed or never comes? How can we bring these dispositions of mathematicians into our math classes? In this double session, we'll turn a critical eye toward tasks and problems and learn specific strategies to increase the cognitive demand, open up solution paths and make problems more captivating to students. We'll work together to "makeover" dreary problems into ones with which students are more likely to grapple. And we'll focus on instructional strategies to teach students perseverance and resourcefulness.

SESSION 3: 2.00PM - 4.00PM

Developing Risk Takers: Teaching Students To Give It a Go (Repeat)

See Day 2, Session 3

RESOURCES



SHP0423 • \$35.95

Becoming the Maths Teacher You Wish You'd Had

While mathematicians describe mathematics as playful, beautiful, creative and captivating, many students describe maths class as boring, stressful, useless and humiliating. In *Becoming the Math Teacher You Wish You'd Had*, Tracy Zager helps teachers close this gap by making maths class more like mathematics.

Tracy spent years observing a diverse set of classrooms in which all students had access to meaningful mathematics. She partnered with teachers who helped students internalise the habits of mind of mathematicians as they grappled with age-appropriate content. From these scores of observations, Tracy selected and analysed the most revealing, fruitful, thought-provoking examples of teaching and learning to share with you in this book.

Through these vivid stories, you'll gain insight into effective instructional decision making. You'll engage with big concepts and pick up plenty of practical details about how to implement new teaching strategies.

All teachers can move toward increasingly authentic, delightful, robust mathematics teaching and learning for themselves and their students. This important book helps us develop instructional techniques that will make the maths classes we teach so much better than the maths classes we took.