



---

# Teacher Mindset

Marian Small  
October 2015



# Mindset Issues

- What do you think about most in terms of your teaching?



# Which is top of mind?

- Is it covering the curriculum?
- Is it keeping kids engaged?
- Is it higher EQAO scores?
- Is it love (or at least not hate) of the subject?
- Is it fitting in with the current ideology?



# In terms of the classroom

- Is your focus on the classroom environment? OR
- Is it on the nature of what students see what math is really about?



# What does that mean?

- Consider this:



# Grade 5

- Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.01 to 10 000 using a variety of tools and strategies



# View 1

- Make sure that when you present a number to a student, they can tell you which digit is in which place (and vice versa)



# View 2

Can answer a question like:

- A number has three fives in it and other digits too.



# View 2

- One five is worth 100 times as much as another.
- One five is worth 1000 times as much as another.
- What could the number be? (whole? decimal?)



# Or Grade 8

- Translate between equivalent forms of a number (i.e. decimals, fractions, percent)



# View I

- Given one form of a number, the student can give the other forms.



# View 2

- Can give examples of situations where using a decimal makes life easiest,
- Where using a fraction makes life easiest,
- Where using a percent makes life easiest.



# It makes a difference

- View 1 teachers bring out very different highlights in a lesson than View 2 teachers.



# Assessment beliefs

- Different mindsets can show up in assessment beliefs, too.



# Consider this task

- **Imagine it is for a grade 4 student.**



# The task

- You multiply two numbers.
- You find it super-easy.
- What numbers might you have multiplied?
- Why did you choose those numbers?



# View I teacher

- But how do I evaluate it?



# View 2 teacher

- I would find out so much about what they think!



# Comparing fractions

- A view I teacher asks:
- Which is more:  $\frac{2}{3}$  or  $\frac{3}{8}$ , etc.



# But

- A view 2 teacher asks:
- If one fraction has a closer together numerator and denominator than another, is it bigger?



# Or perimeters of rectangles

- A view I teacher provides a rectangle and maybe its dimensions and asks for a perimeter.



# Or perimeters of rectangles

- A view 2 teacher asks:
- Build rectangles where the perimeter is three times the length.
- What do you notice about the length and the width relationship? Why does that make sense?



# There are different views

- Is math about getting answers? Or
- Is math about having a deep understanding of mathematical relationships?



# Goals as a math teacher

- Is your goal as a math teacher....



# Maybe

- To have kids perform better on EQAO or in terms of school marks



# Maybe

- To build student confidence in themselves as math players



# Maybe

- To share your enjoyment of math and help it rub off



# Maybe

- To ensure none of your kids dread math.



# Maybe

- To build kids who see themselves as good at math



# Maybe

- To build kids who don't see math as boring



# Regarding yourself

- How important do you believe it is to try new approaches?



# Regarding yourself

- How important do you believe it is to read professional pieces about math teaching?



# With which statement

- Do you agree?



# Choice I

- If you work at your teaching, you improve and student learning improves.
- You can only control some of what kids learn; most of it depends on the attitudes/knowledge of your students. So do your best, but accept the inevitable.



# Choice 2

- Once you've taught for a while and have established some good practices, you should stick with those practices.
- You should always be testing out new approaches.



# Choice 3

You are a better math teacher if:

- you know the math you are teaching deeply.
- you've struggled with math yourself so you understand potential student struggles better.



# Choice 4

When you struggle with a new strategy:

- You keep trying until you get it.
- If try it once or twice and it doesn't work, you realize it won't be effective and look for others.



# Choice 5

If a problem seems challenging to you:

- You don't use it with your students; you want them to be successful.
- If you think it is mathematically valuable, you give it a shot anyway.



# All of the previous discussion

- Is not about what you should or should not believe, but what you could or could not believe.
- You have the right to decide. But perhaps it has to be a more conscious decision that it sometimes is.



# And maybe

- We have a professional responsibility to always be evaluating, rethinking, etc.



# With this in mind...

- It would be good if we worked on two tasks today.



# Task 1

- In grade groups,
- Choose 3 expectations.
- Figure out how a View 1 and a View 2 teacher might interpret them differently in instruction **AND** in assessment.



# Task 2

- In grade groups, build a lesson we might use for a lesson study.



# The lesson

- Should be a concept-based or problem solving lesson based on a grade level expectation.
- It should include:



# Components

- A learning goal
- A Minds On (Getting Started)
- Action (main problem)
- Consolidation (to bring out the salient points)



# Components

- Try to include manipulative/technology use.
- Try to include differentiation.
- Include something that students do at the end that will help you evaluate their success in learning what you really wanted them to learn.



# Download

- [www.onetwoinfinity.ca](http://www.onetwoinfinity.ca)
- RenfrewCOct19