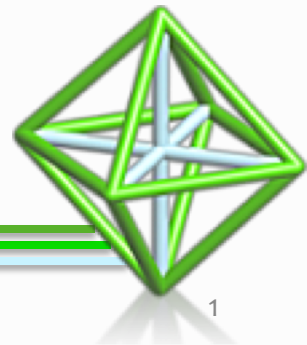
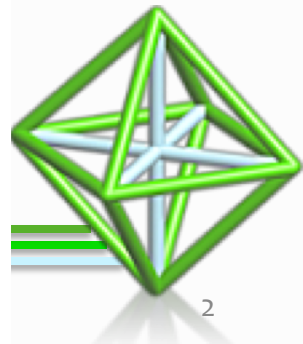
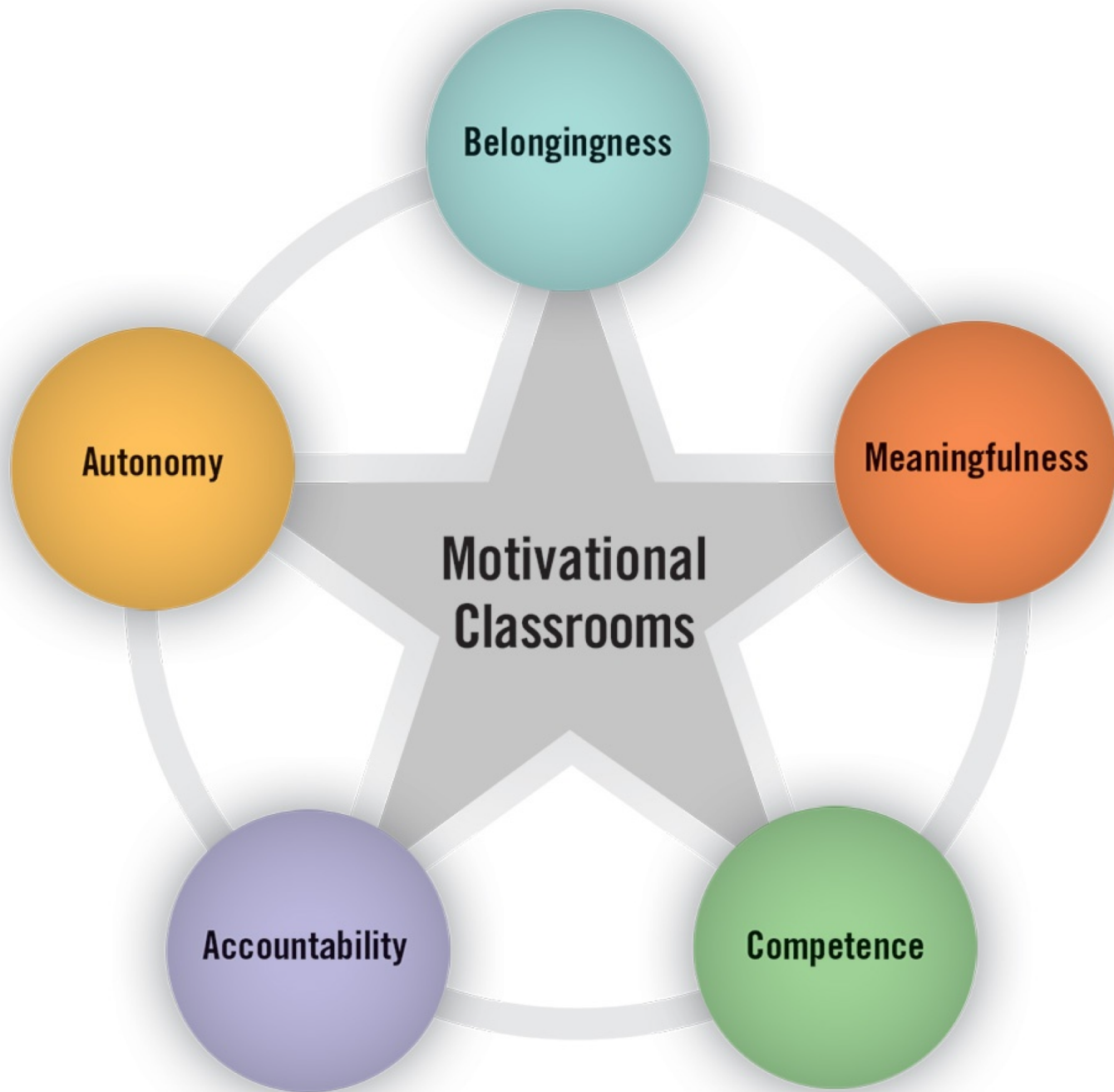


# Reflecting on Practice: Mathematics and Motivation

## Session 2: Belongingness

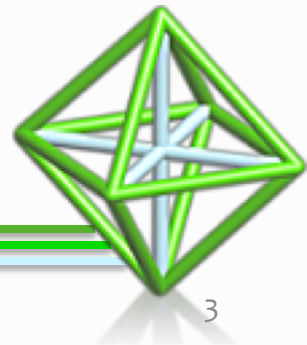




# Definition of *Belongingness* from Motivated

"When students experience frequent, pleasant interactions with the sense that others are concerned about who they are and for their well-being."

(Horn, 2017)



# VISIBLY RANDOM GROUPS

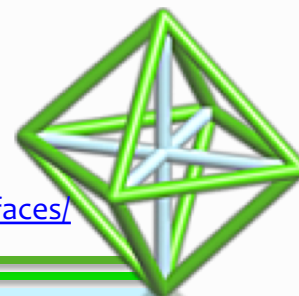
in math classrooms



Sketchnote: @wheeler\_laura

Research: Peter Liljedahl

<https://mslwheeler.wordpress.com/2014/11/09/visibly-random-groups-vertical-non-permanent-surfaces/>

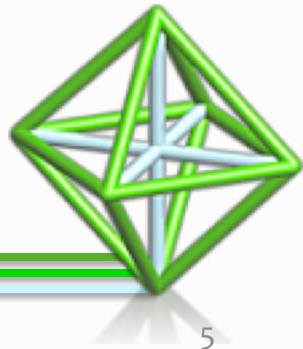




At your tables...

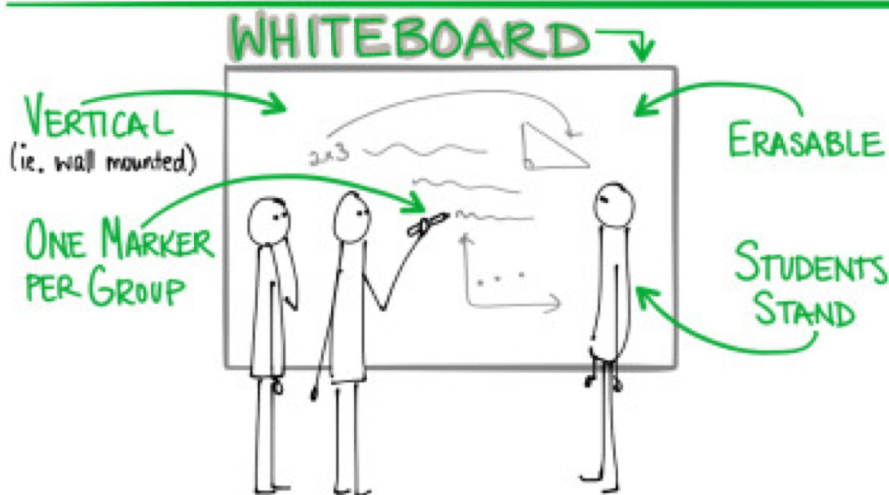
...talk about what you see as the advantages of visibly random grouping?

What do you see as the disadvantages?

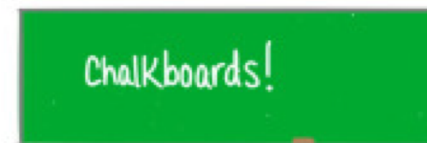


# VERTICAL NON-PERMANENT SURFACES

in math class



You can also use...



Windows  
with  
whiteboard  
markers

↓ **TIME TO 1<sup>ST</sup> NOTATION**

Start writing faster  
→ take risks  
→ erasable!

$$3x + 5 = 10$$

↑ **Eagerness  
Participation  
Discussion  
Persistence**



↑ **NON-LINEARITY  
of work**

more accurately  
reflects thinking  
process

↑ **MOBILITY  
OF  
KNOWLEDGE**



Research: @pglijedahl

Sketchnote: @wheeler\_laura

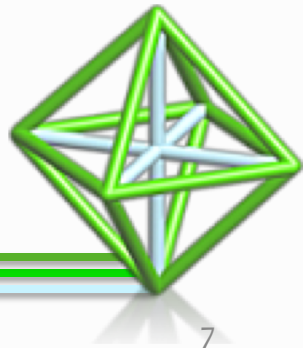
<https://mslwheeler.wordpress.com/2014/11/09/visibly-random-groups-vertical-non-permanent-surfaces/>



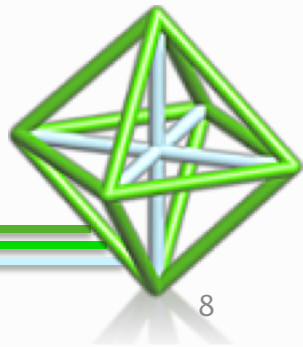
At your tables...

...talk about what you see as the advantages of having students working with a group at the vertical non-permanent spaces?

What do you see as the disadvantages?



"Belongingness is a crucial precursor to students' learning and success. "  
(Levett-Jones, Lathlean J., 2009)





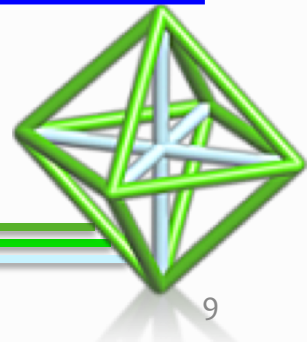
# Talking Points (Elizabeth Statmore in Horn, 2018)

I AGREE

I DISAGREE

I AM UNSURE

<http://cheesemonkeysf.blogspot.com/2014/07/tmc14-gwwg-talking-points-activity.html>



# Talking Points (Elizabeth Statmore in Horn, 2018)

- In your group of three, and one by one state whether you agree, disagree, or are unsure about the statement and give a reason for your answer.
- Go around a second time repeating whether you agree, disagree, or are unsure, with the option to change your mind explaining why you changed your opinion. This time the group may ask a question or offer another idea.
- Go around again to see where everyone has landed.

I AGREE

I DISAGREE

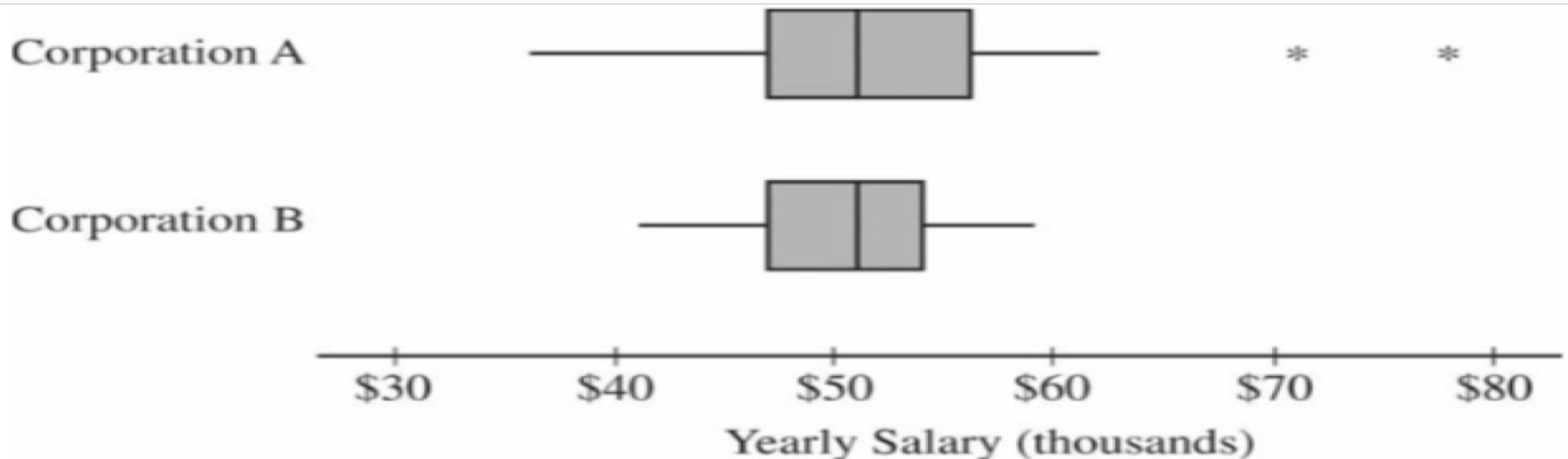
I AM UNSURE



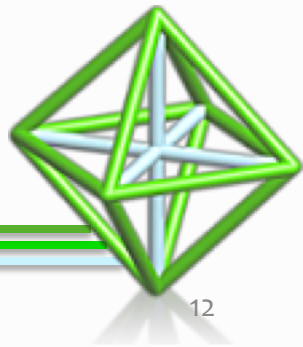
# Statement:

## Company A is the best place to work.

Two companies, A & B, hire new college graduates as accountants at entry-level positions. In 2009 the starting salary for an entry-level accountant position was \$36,000 a year at both corporations. The boxplots show the salaries of these employees 5 years after starting with the companies.

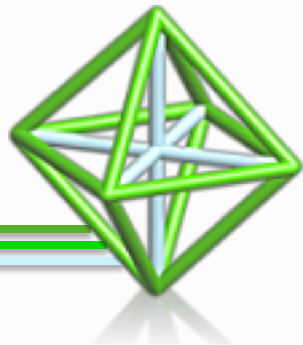


Statement:  
 $1.\overline{9}$  is equal to 2





Statement:  
Every linear function has a y-intercept.



Statement:  
 $1.\overline{9}$  is equal to 2



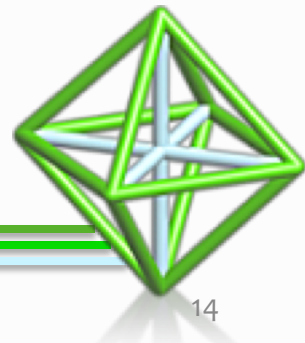
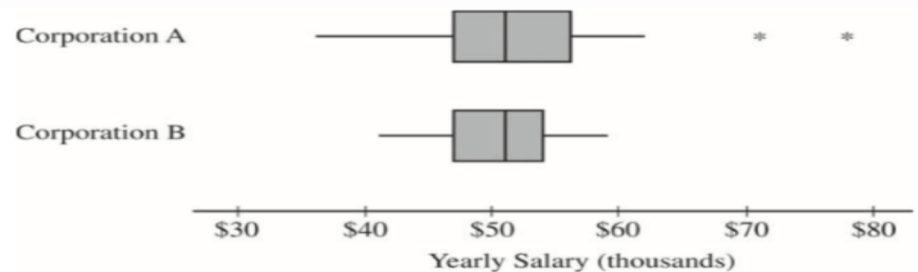
Statement:  
Every linear function has a  
y-intercept.



Statement:

**Company A is the best place to work.**

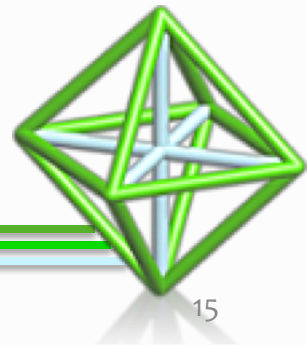
Two companies, A & B, hire new college graduates as accountants at entry-level positions. In 2009 the starting salary for an entry-level accountant position was \$36,000 a year at both corporations. The boxplots show the salaries of these employees 5 years after starting with the companies.



# Debrief

Consider if you ran this protocol in your classroom.

- What are some benefits you expect?
- What are some challenges?



# How to Motivate Students to Work Harder

In an era of rising academic standards, more kids than ever will struggle and fail. But research suggests new ways to help them thrive in the face of adversity.

THOMAS TOCH AND SUSAN HEADDEN SEP 3, 2014

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Read the *italicized* excerpt from The Atlantic article . As you read, star a piece of the article that resonates with you.

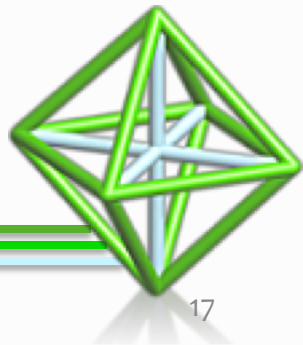
After everyone has read, share your thoughts with a partner at your table.





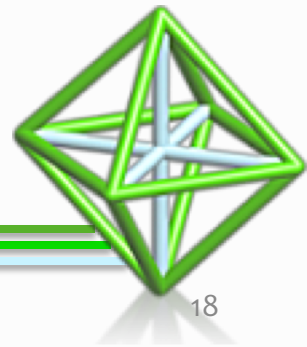
# Wise Feedback

“I’m giving you these comments because I have very high expectations and I know you can reach them.”



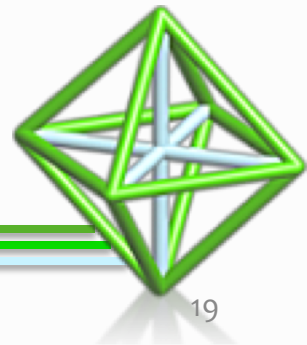
To give effective feedback, the teacher needs to know the student—to understand what feedback the student needs right now. And to receive feedback in a meaningful way, the student needs to trust the teacher—to believe that the teacher knows what he or she is talking about and has the student's best interests at heart. Without this trust, the student is unlikely to invest the time and effort needed to absorb and use the feedback.

-Dylan Wiliam



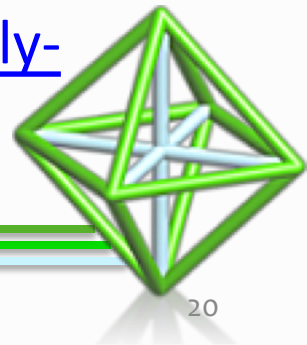
# How do we help build community and a sense of belongingness in our classrooms?

- Notice & Wonder
- Visibly Random Grouping (VRG)
- Vertical Non-Permanent Surfaces (VNPS)
- Talking Points
- Wise Feedback



# References

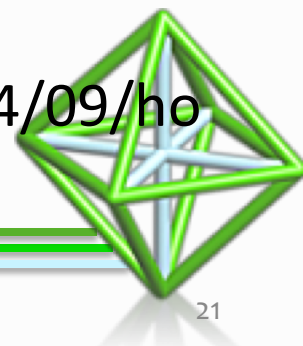
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