#RWLEARN

Writing reflectively in Math & Science… really? Whatever for?

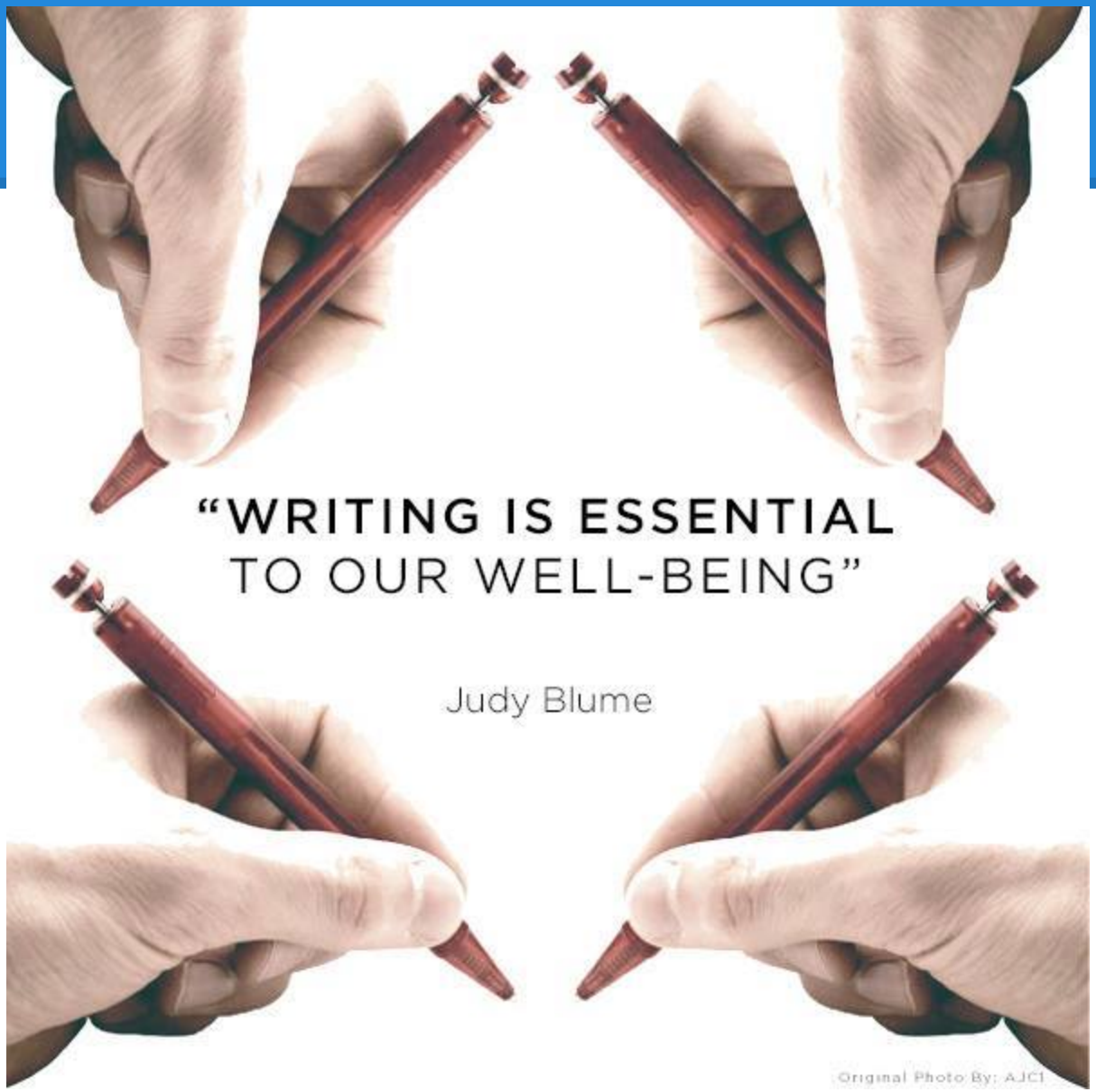
Kerry Cule, Peggy Drolet & Audrey McLaren

Getting to know you...

Use the chat to introduce yourself

Tell us

- your name
- your subject/grade
- where you are tonight!


"WRITING IS ESSENTIAL
TO OUR WELL-BEING"
Judy Blume
Original Photo By: AJC1

What is reflective writing?

A practice of writing that is:

- recursive *(learner can come back to it)*
- authentic *(not parroting, truly comes from the writer)*
- personal *(how is it meaningful in the learner's life)*
- a catalyst for deeper learning *(a different kind of knowing)*

Reflective writing promotes forward movement and inspires change!

What experience do you have with reflective writing?

Use the text tool to write on the board.

Why reflective writing?

The Brain-Based Benefits of Writing for Math and Science, July Willis, MD

Benefits of Reflective Writing

1. Reduce anxiety
2. Develop flexibility
3. Combat boredom
4. Conceptual brain networks
5. Memory cement

Benefit #1: Reduce Anxiety

"Fear of making mistakes….impacts learning. Reflections about content...give students the opportunity to express creative hypotheses and concerns for their understanding" - Judy Willis

Benefit #1: Reduce Anxiety

Braden
I think the video shows that you should never give up and always try your hardest to succeed

marley
i think this video relates to the "beginning of our new adventure" in that there are successes and failures in everything you do (including math) and to just embrace them and move forward

anne
This video shows that math has many parts to learn that all work together, also that no matter how many times you fail you should always try again.

Justine
I think this video is a good reminder that when we are in math class, we should not give up after our first try. Like with the golberg machine we will learn from our mistakes, adjust and suceed.

like in the begi
math skills. Th
nts of the machine represent
end of the Goldberg machine
signifgies our succes in the SN4 course.

Tell me what you think. What does this video have to do with the beginning of your new adventure?
Click on the arrow below to play the video.
Then click anywhere on the screen to add a comment.

Keara
I think this video shows that you can achieve anything you set your mind to. So if you set your mind on figuring out a math problem, you will eventually get it right, even if it's not on your first try. Keep trying!

Crystal
i think this video is proof that as long as you keep trying you will succeed, it (math) will be hard at times but never give up!

Kassandra
It wont be easy (math) but we will have try our best and if we try hard we will succed.

Nathan
I think that the beginning of our new adventure is just like the Goldberg Machine. It will be a bunch of complicated steps, in which we might fail or succeed, but no matter what, we have to keep going until we finally succeed.

Maile
I think this video shows that if you expect to fail you might be surprised of your result. It might be good

Ashley
I think this video is related to our new adventure by the saying "If you first don't succeed try, try again".

Mat
I th
e worth it at the end

Devyn
I think this video is showing that when you believe in your self and keep on trying you will succeed.
You may hit some rough patches along the way but you shouldn't ever give up

Elias
If u believe u can do it then you'll be able to. If u give up u won't be able to accomplish anything

Ka
I think this video describes what our year in Math will be like. We have to be patient, like the makers of that Goldberg machine must have been, in the beginning we will be trying things and experimenting with this new learning style but we will be organized and used to it by the end. We will have our failure but we shouldn't be discouraged, because "if at first you don't succeed try, try again". This video is kind of encouraging/uplifting if you ask me.

Benefit #1: Reduce Anxiety

If at first you don't succeed, try and try again. Because if at first it doesnt work, change part of it and try once more. Math problems are often like this, and often consist of backtracking to the difficulties and fixing them instead of ignoring them

i think this video relates to the "beginning of our new adventure" in that there are successes and failures in everything you do (including math) and to just embrace them and move forward

I think that the beginning of our new adventure is just like the Goldberg Machine. It will be a bunch of complicated steps, in which we might fail or succeed, but no matter what, we have to keep going until we finally succeed.

Benefit #1: Reduce Anxiety

In this document, you will share with your classmates, your thoughts on the evaluation of the project "Are We Really Happy?"
What needs to be included for each part? What details will I look for? Be specific. Try not to repeat what the others have said. You can add as many rows as possible. Refer back to this document in order to help you out.

Cover Page

Your Name	Your Comments
flavie	all we need has to be on the cover page, our name, both miss conrod and miss peggy's name, the due date, math sn4, and the name of our project.
Joelle	name, date, teachers name
Alex-	On the cover page, we need to include: the date, our name and the name of the project.
James	cover page, intro, main work, conclusion
soren	We need to introduce the subject so that readers know what the paper is about
Adrien	Include our name, date and title
Sam	We will have our name, possibly a picture, the date and a title.
Thia	Include name and math sn4 and teacher
Emmanuel	Intro, date, name
Sara	date name and all other important names on the cover page
Simon	Use appropriate format (name, date, title)

Benefit #1: Reduce Anxiety

A Geogebra Project

I am hardly motivated at all to do this assignment; geogebra does not help me learn and only confuses me

Figuring this whole thing out is pretty frustrating because I'm not sure how to add the t into the equation

Well now that I sort of figured out how to use the sliders, they work! and the whole project is sort of coming together.

I am not really a person that is good in technology but i was proud of me when I was able to complete this assignment.

This is probably not the prettiest/funnest coolest geogebra in the world but I still like it because I learned a lot on the math involved.

Benefit #2: Develop Flexibility

"...***through shared written reflections, students are exposed to multiple approaches to solving problems...building flexibility and open-minded approach***…" - Judy Willis

Dalton's Law, the Skittles Version

1

Posted on November 22, 2012

Today I will be explaining Dalton's Law of Partial Pressure as simple as possible. Take for example a bag of Sour Skittles. To be able to find the total amount of skittles in the bag, we need to divide the skittles up according to their specific colour. If we add the 4 different colours together, we will be able to find the total amount of skittles in the bag.

5 Pink Skittles | 4 Yellow Skittles | 3 Green Skittles | 2 Blue Skittles | Total Amount of Skittles

In other words,
if we use Dalton's Law it would
look like this

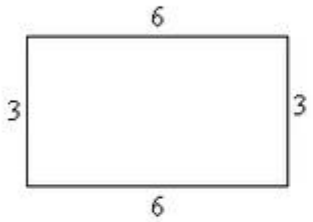
Partial Pressure 1 | Partial Pressure 2 | Partial Pressure 3 | Partial Pressure 4

Dalton's Law:

Dalton's law is just like finding of length of athe perimeter of an object.

If you want to find the total amount rectangle then you have to add all the sides together (side1 + side2 + side3 + side4 = perimeter)

ie:



=> 6 + 3 + 6 + 3 = 18

- Therfore 18 is the perimeter!

Benefit #2: Develop Flexibility

#reflectiontrig I need to remember to always look at a figure with an open mind. It could be divided into many different ways.

#reflectiontrig I need to practice more, I don't have too much trouble with the formulas and how to use them, but more practice will help.

#reflectiontrig I need to remember the steps when doing the different formulas because sometimes I try to do too much in one step.

Twitter Alternative

4C Tweet Draft – Compose your tweet, making sure you only use the 136 characters provided. Don't forget a space is a character! Then, show it to Mrs. Johnson and she will help edit it if needed and/or give you permission to tweet it out to our followers.

. ___ ___ (your initials)

4C Tweet Draft – Compose your tweet, making sure you only use the 136 characters provided. Don't forget a space is a character! Then, show it to Mrs. Johnson and she will help edit it if needed and/or give you permission to tweet it out to our followers.

. ___ ___ (your initials)

Twitter Alternative

Benefit #3: Combat Boredom with Personal Relevance

"***Even when the facts of the math or science are not debatable, individual responses to the information are appropriate writing topics.***" - Judy Willis

Benefit #3: Combat Boredom with Personal Relevance

MathMineCraft

January 17, 2012

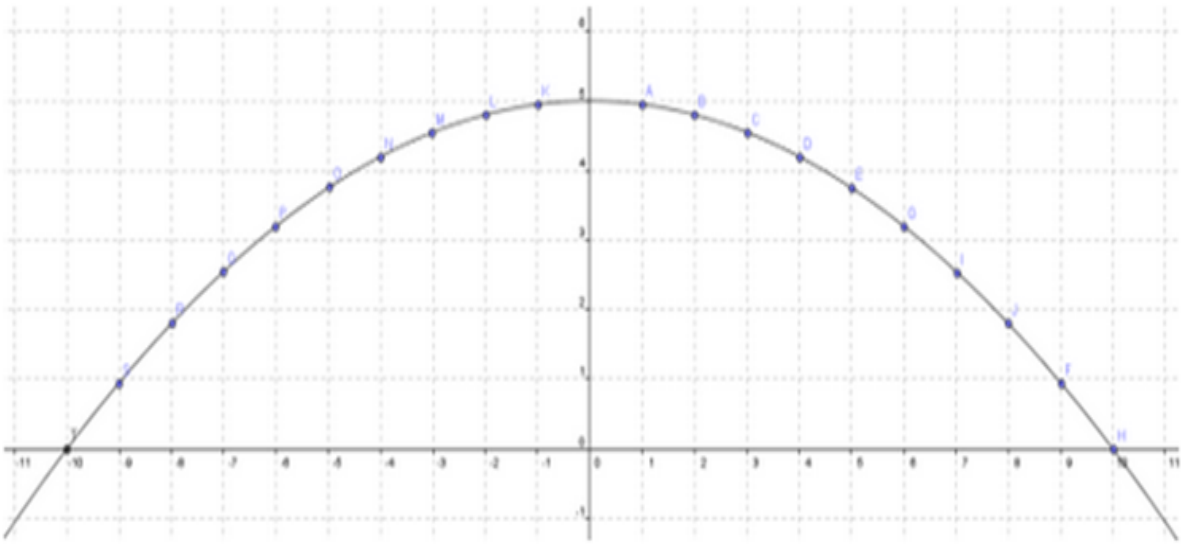
Minecraft is an amazing game, staged in a randomly generated world built utilizing 1 meter cubes. It is a type of sandbox game, in which you are free to do whatever you please. I use Minecraft to create epic feats of architecture, mostly large mansions or castles. One of my latest creations is a large, multi-floor brick mansion, with a large living room and balcony above it.

I wanted to have a curved, panoramic living room window, but because of the limitation of only square cubes, I had to improvise... somehow. I decided that the window should be parabolic, giving it an appealing and professional look. I tried building it on the spot, but couldn't get it to look quite right... so I got an idea: Geogebra! I created a simple function based on the width and depth of the window, which ended up being:

Benefit #3: Combat Boredom with Personal Relevance

MathMineCraft January 17, 2012

I ended up with this graph, and placed a point on each full x integer on the parabola:



yeah, epic skills, ehh?

Benefit #3: Combat Boredom with Personal Relevance

MathMineCraft

January 17, 2012

Well why don't I show you the final product, and maybe give you the taste of playing Minecraft!

Benefit #3: Combat Boredom with Personal Relevance

Save My Lake WSQ = Watch, Summarize, Question

This WSQ is to help you remember the video and to help me understand what type of questions you have regarding the video.

* Required

What is your name? *

WATCH

Save My Lake documentary: http://www.cbc.ca/docu
ID=1867857094

SUMMARIZE

What was the video about? *

Your summary tells me if you understand the video or not. If I can't make sense of your summary, then you probably didn't understand it well enough because you can't verbalize it.

QUESTION

What is one question that relates to the video? *

It can be a question about something you didn't quite get OR a question that someone else might have about the video OR a question about an important piece about the concept.

Benefit #3: Combat Boredom with Personal Relevance

Why do dogs die within hours of ingesting the algae, but humans only suffer from mild conditions like nausea and diarrhea?

I was really curious to how the effects on the lake can be reversible? Like what has to be done once we reduce the pollution?

Why does the green foamy stuff (I can't remember the name) appear on some shores of the lake but not others?

What has infected the lake and what is known to be the possible consequences to drinking or coming into contact with the water of the lake?

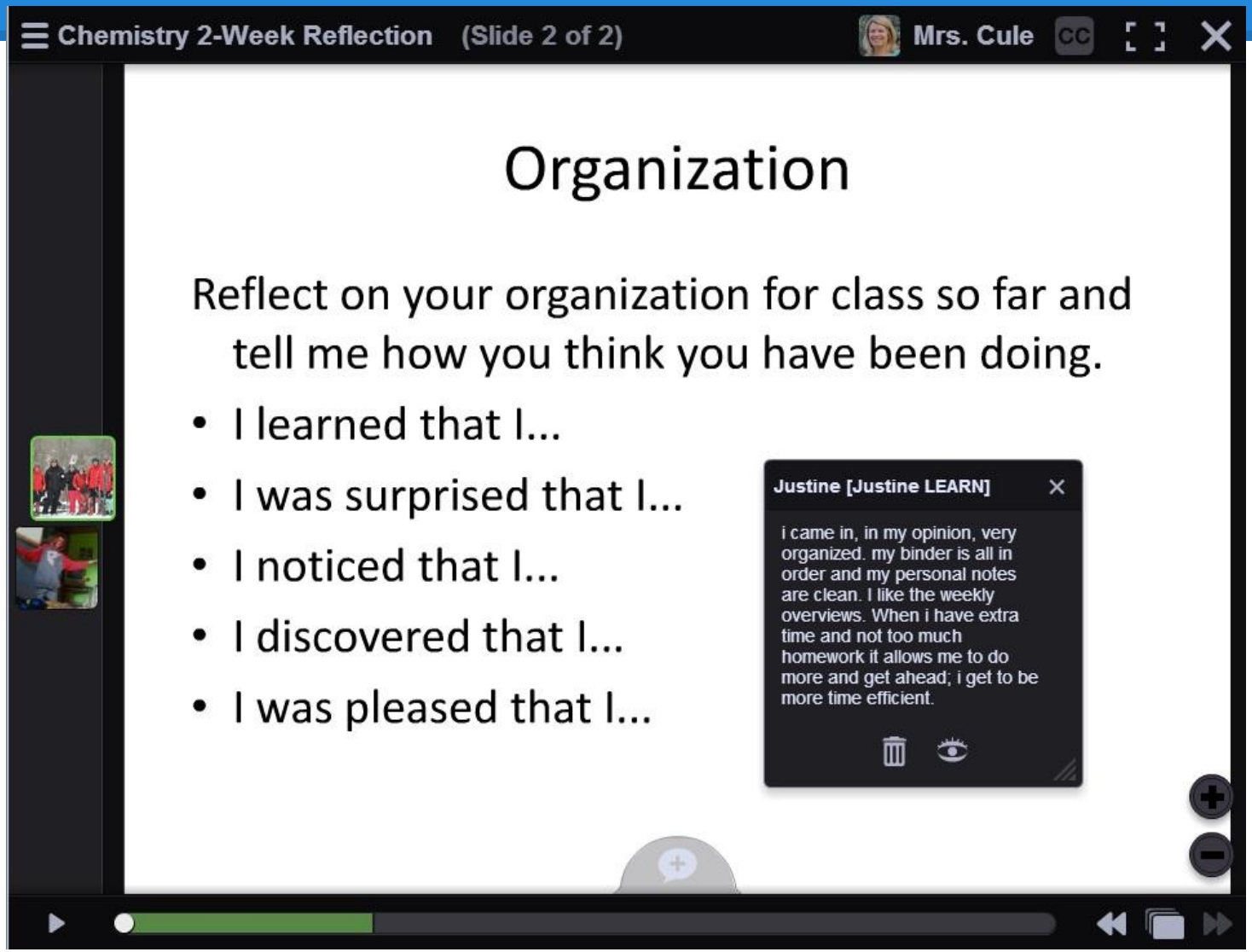
Why doesn't the government build purification stages before the water reaches the lake?

Benefit #4: Conceptual Brain Networks

"...***conceptual networks are the valuable tools the brain uses in the highest order of thinking.***"

"***...activate stored prior knowledge memories that relate to the new situation***". - Judy Willis

Benefit #4: Conceptual Brain Networks



Benefit #4: Conceptual Brain Networks

i have realised that this geogebra was similar to the other one except that there were more conditions to show objects and more rules about certain intercepts or zeros that we needed to enter.

After two weeks of working with this equation and logarithms I figured out how to isolate the x. I made the cordinate subtituting 0 into my y's and I thought it worked. It only seemed to work properly when my h was = to zero. I relooked over my rule and seen that I made a mistake and instead of subtracting h I added it. Afterwards my zero worked perfectly and i felt like i could do anything!

Benefit #5: Memory Cement and Concept Glue

"***The many varieties of writing can serve to guide the brain to recognize, construct, and extend its patterns.***" - Judy Willis

Benefit #5: Memory Cement and Concept Glue

I was really happy to have figured out how to get my conditions right for my text that I did a happy dance in my head. So I figured that a>0, b>0 and a<0,b<0 means that it will increase and if a<0,b>0 and a>0, b<0 it will decrease. I was really happy.

The longest part about the texts was actually finding what the conditions were. This is why making students use GeoGebra helps them understand how the function actually works and it's like having animated notes you can use to study

OH MY GOSH!!!! It works!!! FINALLY!! Okay, so my mistake was sillly. I had written my P like this: P = (t, a sqrt(b(x-h)))+k I had put my last bracket in the wrong place. It is now: P = (t, asqrt(b(x-h))+k).

Benefit #5: Memory Cement and Concept Glue

While you are waiting…

Tweet—

#mygeomemoryaid

1. What makes a good memory aid?
2. What do I hope to accomplish today when we discuss these definitions

learn

Benefit #5: Memory Cement and Concept Glue

Your exit ticket....

#mygeomemoryaidreflection

Today, I realized I need to .....

Benefit #5: Memory Cement and Concept Glue

moles isnt the most clear. yes i can learn the formulas, but i dont understand why and when do we use them. what are they for? and how do i know when to use them?

Why, when using lewis notation do you have to add another Cl atom? why can't the Mg atom just be left with only 1 electron?

In summary: Benefits of RW

1. Reduce anxiety
2. Develop flexibility
3. Combat boredom
4. Conceptual brain networks
5. Memory cement

Any questions? Use the chat tool.

Getting Started

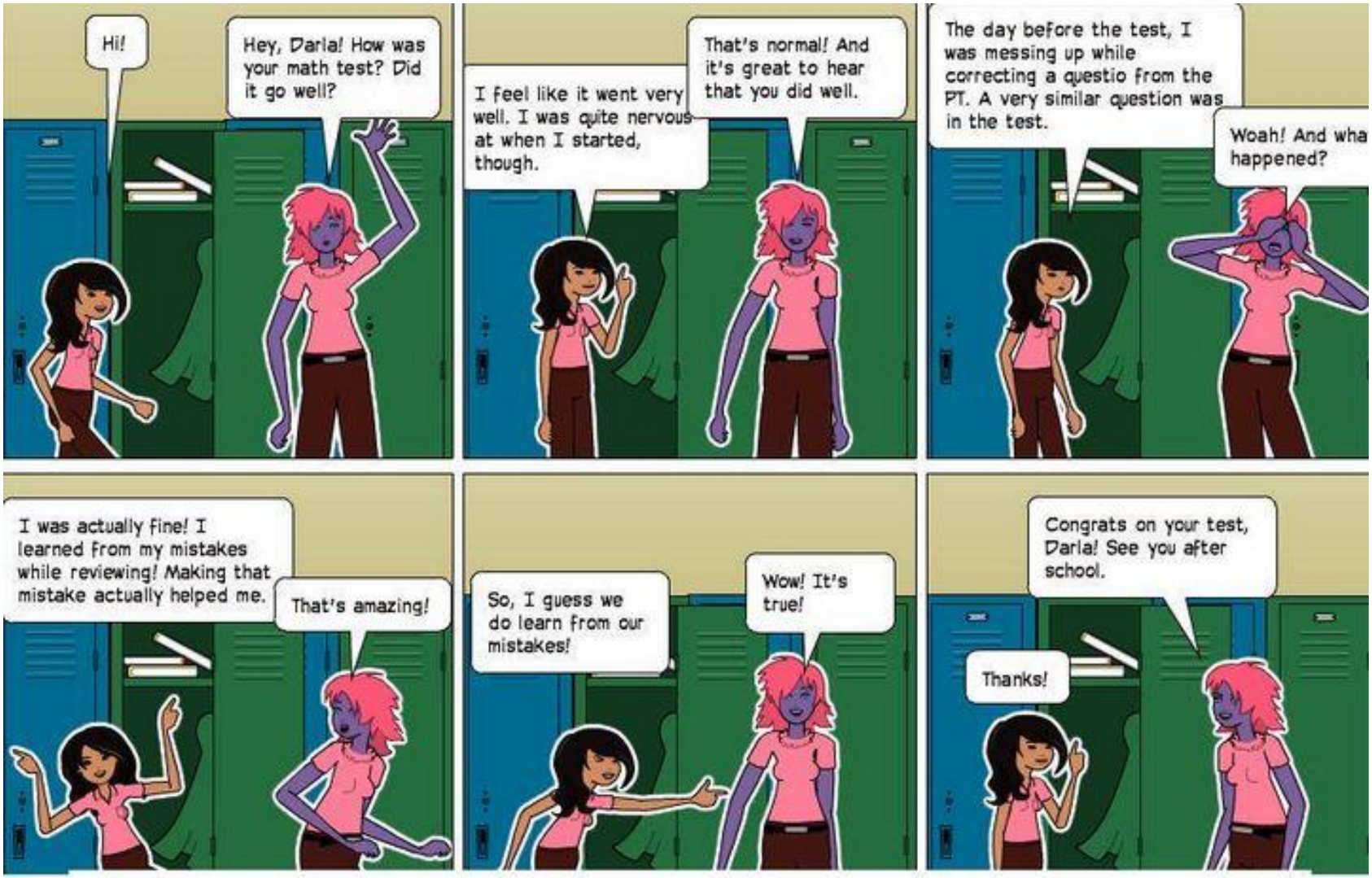
1. Motivating students to write
2. Prompting students to write
3. Structuring reflective writing
4. Choosing the best tool
5. Providing feedback

Use the text tool to vote on the board.

Getting Started
1. Motivating Students

- routine
- variety
- feedback
- sharing student reflections
- environment

Getting Started
1. Motivating Students



Getting Started
2. Prompting Students

- I learned that I...
- I was surprised that I...
- I noticed that I...
- I discovered that I...
- The hardest thing for me was...
- I am the most proud of... because...
- The biggest challenge I encountered during this task was...
- The strategy that I will try if I get stuck on something in the future is…
- I used to think… Now I know…
- The last time I tried this…..but this time…...

Getting Started
2. Prompting Students

I verified by first using each of the sliders separately, observing how they affected the function and the rule. When all worked as it should **I performed combinations of the parameters,** still observing the variables involves and the rule of the function.

To verify my function I checked all parameters on their own to make sure they properly effected the line **both visually and mathematically** (its rule).

By doing this I found little errors in my geogebra, like **at first my "b" wasn't integrated into my rule (whoops), and then my vertex (V) point wouldn't cooperate** and actually follow the vertex, which turned out to be a rule problem, again.

Getting Started
3. Structuring RW

- keep it simple at first
- use checklists
- open-ended questions

Reflection time!

The most important thing I learned during this assignment was:

- [ ] if at first you don't succeed, try try again.
- [ ] the early bird catches the worm.
- [ ] I need to sleep more.
- [ ] Other:

Getting Started
3. Structuring RW

- provide choice for students
- start informally - for example, while you're waiting...

Getting Started
4. Choosing Tools

- be aware that different tools offer varying degrees of privacy and interpersonal interactions

Getting Started
4. Choosing Tools

Tool	Interaction		Privacy		
	S↔S	S↔T	Private	Class	Public
Paper Journal	Y	Y	Y		
Whiteboard / Chalkboard / Post-It Notes	Y	Y		Y	
Twitter (tweets)	Y	Y		Y	Y
Twitter (direct messages)	Y	Y	Y	Y (new!)	

Getting Started
4. Choosing Tools

Tool	Interaction		Privacy		
	S↔S	S↔T	Private	Class	Public
Padlet	Y	Y		Y	Y
Digital Portfolio	Y	Y	Y	Y	
Google Forms		S→T only	Y		
VoiceThread (comment moderation off)	Y	Y		Y	Y
VoiceThread (comment moderation on)		S→T only	Y		
Blogs	Y	Y			Y

Getting Started
5. Providing Feedback

- create opportunities to provide and respond to peer comments
- make personal contact with students often (especially at the beginning of the year)
- don’t use score
- causes thinking rather than emotional
- pay attention to how to move forward

Any questions?

For more info:
http://tinyurl.com/RWLEARN

Thanks for attending our presentation!