

Math activities for students who hate math!



By Ellen Piekarski

piekarski.ellen@gmail.com



Who - Who am I & Who hates math?

Why - Why teach with math activities?

How - How to teach math to students who hate math?

Who Is Ellen Piekarski

Non-Traditional Teacher

I love to hear myself talk, I think I am really funny, but when I lecture, I am really boring!

My first year teaching I taught Pre-Calculus classes ALL DAY LONG!

After repeating the same lecture 6 times a day for months, I flipped my classroom.

Mural about Mrs. Pi

Edweek Article

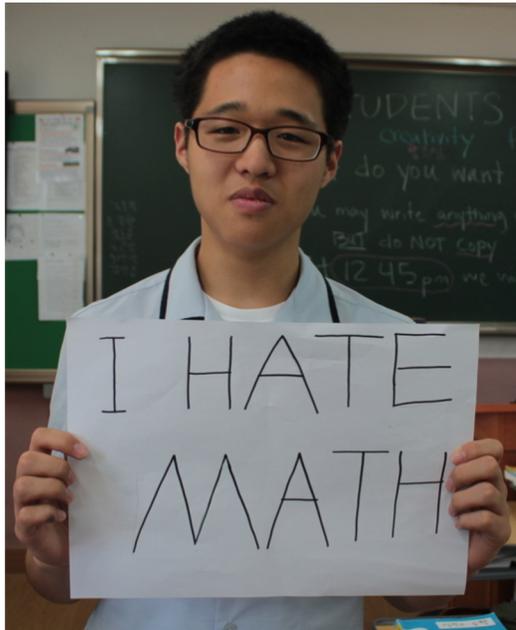
AK Humanities
Forum Article

Arctic Entries
Performance

Project Invent

Who Hates Math?

- Math Anxiety
- Test Anxiety
- Low-Income
- Homeless
- Fetal Alcohol Syndrome



- 504
- SPED
- Athletes
- Beautiful People
- Perfectionist

Stereotypes!!!!

Who Hates Math?

People who are are afraid of failure!

People who don't see the purpose!

I can accept failure, but I can't accept not trying. - Michael Jordan

I've missed more than 9,000 shots in my career. I've lost almost 300 games. 26 times I've been trusted to take the game winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed. - Michael Jordan

**A person who never made a mistake never tried anything new.
- Albert Einstein**

I failed my exam in some subjects, but my friend passed. Now he's an engineer in Microsoft and I am the owner. - Bill Gates

Failure is nothing more than a chance to revise your strategy. - Sissy Gavrilaki

Failure is not the opposite of success; it's part of success. - Arianna Huffington

Don't bury your failures, let them inspire you. - Robert Kiyosaki

Failure doesn't come from falling down. Failure comes from not getting up. - Zig Ziglar

Failure is a bruise not a Tattoo. - Jon Sinclair

Why do we teach math through activities or PBL?

If they can do the worksheet, they don't need it. If they can't, it won't help them anyway.

- Marilyn Adams

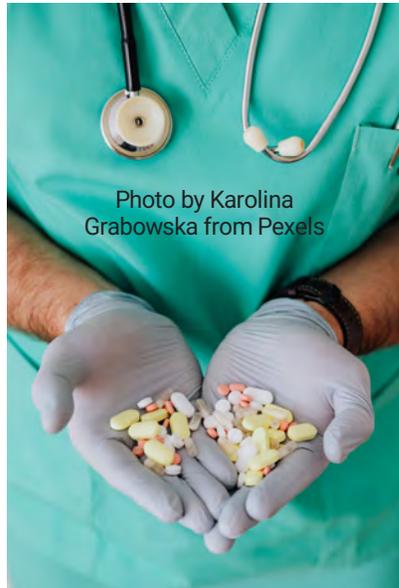


Photo by Karolina Grabowska from Pexels



Photo by Maarten van den Heuvel from Pexels

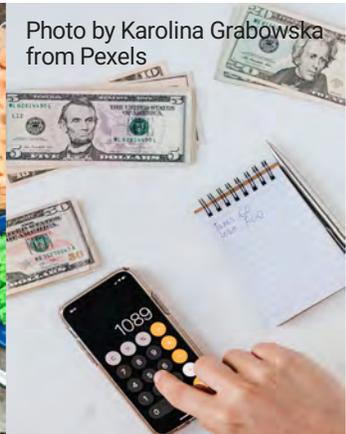


Photo by Karolina Grabowska from Pexels



Photo by Sunyu Kim from Pexels



Photo by Andrea Piacquadio from Pexels



Photo by RF_..studio from Pexels



We teach math so our students can solve real world problems!

Why is Math Important in Life?

10 Reasons Website

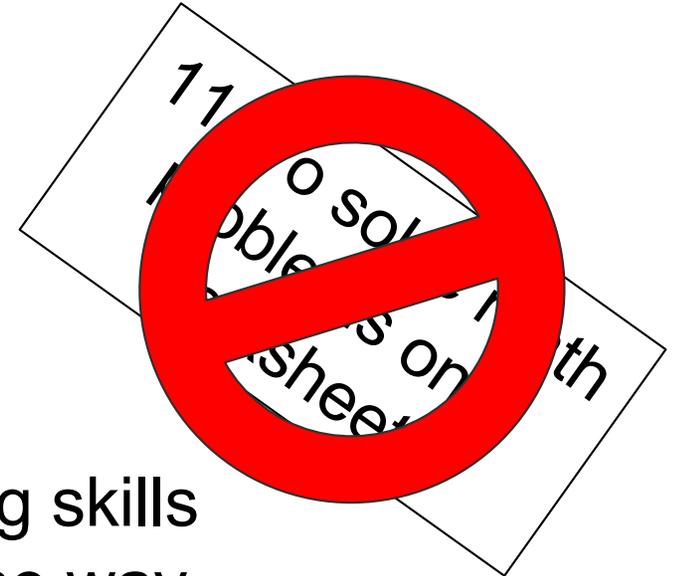
1. Learning math is good for your brain
2. Math helps you tell time
3. Math helps you with your finances
4. Math makes you a better cook (or baker)
5. Math helps us have better problem-solving skills
6. Practically every career uses math in some way
7. Math is all around us and helps us understand the world better
8. Math can make you more popular
9. Math can help you shop for a good sale
10. Math is a universal language

11. To solve math problems on a worksheet?

Why is Math Important in Life?

10 Reasons Website

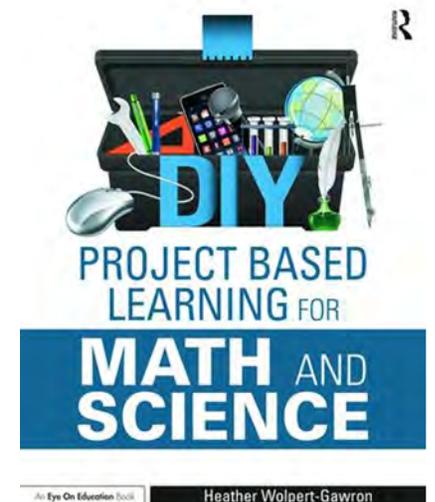
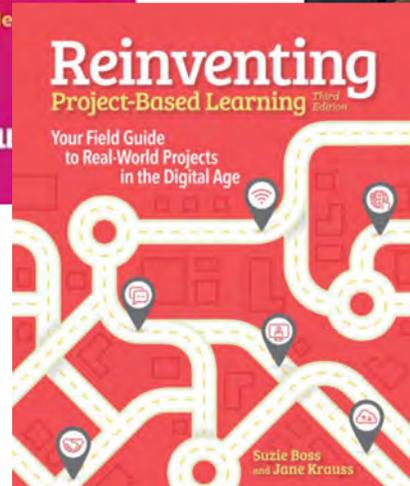
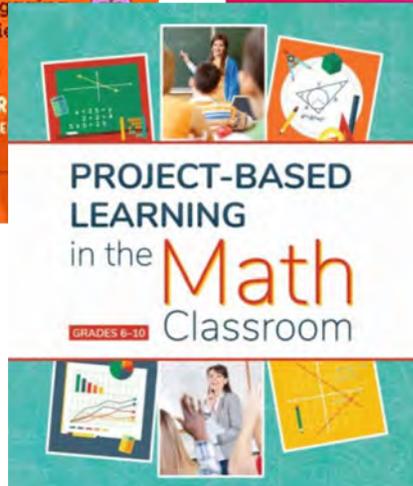
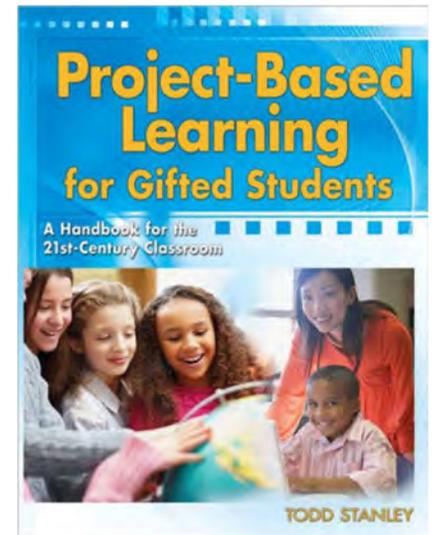
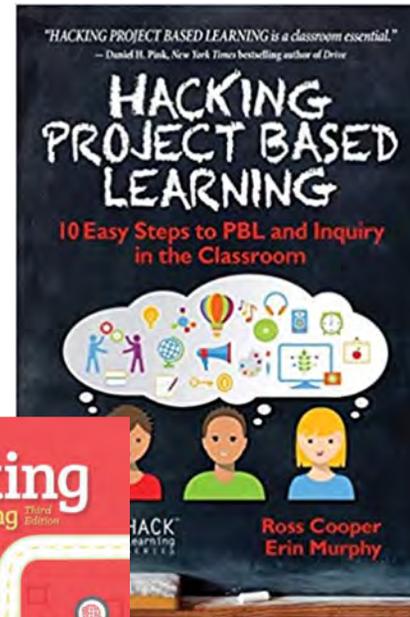
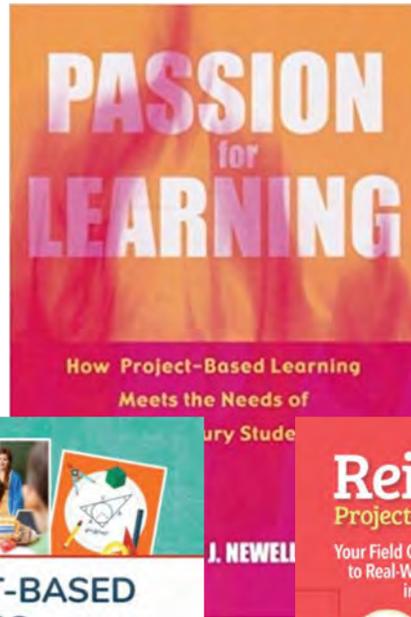
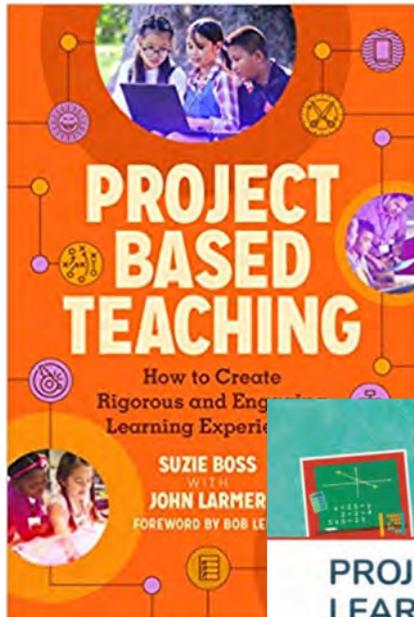
1. Learning math is good for your brain
2. Math helps you tell time
3. Math helps you with your finances
4. Math makes you a better cook (or baker)
5. Math helps us have better problem-solving skills
6. Practically every career uses math in some way
7. Math is all around us and helps us understand the world better
8. Math can make you more popular
9. Math can help you shop for a good sale
10. Math is a universal language



**But what about
standardized tests and
curriculum?**

**This leads me to
How . . .**

Book about PBL: [Link](#)



Most of these books are great and you should read them, but when you teach students who hate math, expect pinterest fails!



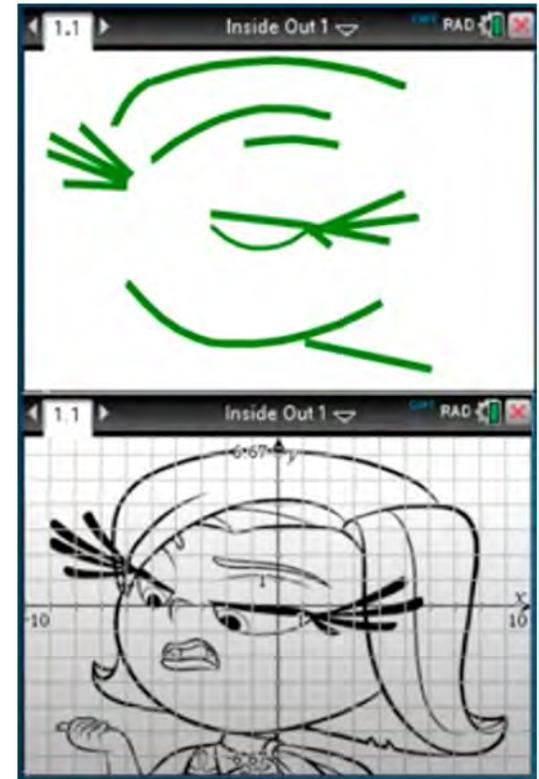
Schwarzenegger
-IM KIN-
Kindergarten
COP



Give yourself and your students grace and the ability to make mistakes. PBL will look different for every classroom!

Show them examples of epic past projects so they have something

to aspire to, but allow them the freedom to not make epic projects.



Allow for student voice and choice:

Exponential Functions: When learning about exponential functions, let the student decide if they want to:

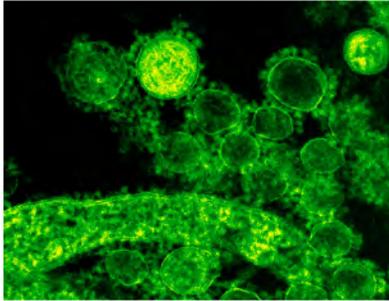


Photo by CDC from Pexels



Photo by Ivan J. Long from Pexels

**Eat bacteria
Play with M&M's
and/or become
a zombie!**



Photo by cottonbro from Pexels

Survey Algebra 9

Unit 2: Graphing and Writing Linear Equations

2018 – 2019

SAMPLE PACING GUIDE

Key: (1.2A) = McDougal/Littell Algebra 1 ©2007

(1.1*) = Big Ideas Algebra 1 ©2014

	<i>Monday</i>	<i>Block 1</i>	<i>Block 2</i>	<i>Friday</i>
<i>Week 10</i>	10/22 ✓	(4.1) Plot Points in Coordinate Plane ✓	(4.2A/B) (2.1*) Graph Linear Equations ✓	10/26 No School
<i>Week 11</i>	10/29 (4.4A) (2.2*) Slope of a Line ✓	(4.4B/4.5A) (2.2*/2.3*) Slope of a Line ✓ QUIZ	(4.5B) (2.3*) Graph Equations in Slope Intercept Form ✓ Activity	11/2 (5.1) (2.5*) Write Linear Equations in Slope-Intercept Form
<i>Week 12</i>	11/5 (5.3) (2.6*) Write Linear Equations in Point-Slope Form ✓	(4.3) (2.4*) Linear Equations in Standard Form ✓ QUIZ	Activity/Review ✓	11/9 No School

**What about
standardized
tests and
curriculum?**

Year At a Glance

QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
<p>Unit of Study AlgI.1: Fundamentals of Algebra McDougal Littell Alg 1 Chapter 1: (1.1, 1.2, 1.3, 1.4) Chapter 2: (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7) Chapter 9: (9.1 A) 16 days (12 lessons)</p> <p>Unit of Study AlgI.2A: Solve and Write Equations McDougal Littell Alg 1 Chapter 3: (3.1, 3.2, 3.3, 3.4, **3.6, 3.7, 3.8) **Optional Lessons 8 days (6 lessons)</p> <p>Unit of Study AlgI.2B: Solve and Write Inequalities Chapter 6: (6.1, 6.2, 6.3, 6.4, **6.5, **6.6) **Optional Lessons 8 days (4 lessons)</p> <p>Unit of Study AlgI.3: Linear Equations and Inequalities as Functions McDougal Littell Alg 1 Chapter 1: (1.6, 1.7, 1.7 Ext) Chapter 4: (4.1, 4.2, 4.3, 4.4) <i>Quarter 1 - 9 days (7 lessons)</i> <i>Continued in Quarter 2</i></p> <p>QTR 1 Total: 41 days</p>	<p>Unit of Study AlgI.3: (Continued) Linear Equations and Inequalities as Functions Chapter 4: (4.5, 4.6, 4.7) Chapter 6: (6.7) 10 days (4 lessons)</p> <p>Unit of Study AlgI.4: Write Linear Functions McDougal Littell Alg 1 Chapter 5: (5.1, 5.2, 5.3, 5.4, 5.5) 10 days (5 lessons)</p> <p>Unit of Study AlgI.5: Statistics McDougal Littell Alg 1 Chapter 5: (5.6) Chapter 13: (13.6, 13.6 Ext, 13.7, 13.8) Assessment Project 12 days (5 lessons and Assessment Prjct)</p> <p>Review and Semester Exam: 7 days</p> <p>QTR 2 Total: 39 days</p>	<p>Unit of Study AlgI.6: Solve Systems of Linear Equations and Inequalities McDougal Littell Alg 1 Chapter 7: (7.1, 7.2, 7.3, 7.4, 7.5, **6.7, 7.6) 11 days (6 lessons) **Optional Lessons</p> <p>Unit of Study AlgI.7: Exponential Functions McDougal Littell Alg 1 Chapter 8: (8.1, 8.2, 8.3, **8.4, 8.5, 8.6) 10 days (6 lessons) **Optional Lessons</p> <p>Unit of Study AlgI.8: Sequences McDougal Littell Alg 1 Chapter 5: (5.3 Ext) Chapter 8: (8.6 Ext) Recursive <i>Supp Lsn</i> Assessment Project 5 days (3 lessons)</p> <p>Unit of Study AlgI.9: Polynomials McDougal Littell Alg 1 Chapter 9: (9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, **9.8) **Optional Lessons 14 days (7 lessons)</p> <p>QTR 3 Total: 40 days</p>	<p>Unit of Study AlgI.10 Graphing Quadratics McDougal Littell Alg 1 Chapter 10: (10.1, 10.2, 10.2 Ext, 10.3, 10.5 Ext, 10.8, **10.8 Activity) **Optional Lessons 10 days (6 lessons)</p> <p>Unit of Study AlgI.11: Methods of Solving Quadratics McDougal Littell Alg 1 Chapter 10: (10.4, 10.5, 10.6, 10.7) 10 days (4 lessons)</p> <p>Unit of Study AlgI.12: Simplify and Solve Rationals and Radicals McDougal Littell Alg I Chapter 12: (12.4) Chapter 3: (*3.6) *Must do if not done in Unit 2A Chapter 12: (12.7) Chapter 11: (11.1, 11.2, 11.3) 12 days (6 lessons)</p> <p>Unit of Study AlgI.13 Parent Functions: Meet the Parents McDougal Littell Alg 1 Parent Functions <i>Supp Lsn</i> Transformations of Functions <i>Supp Lsn</i>, 4.1 Ext, 6.5 Ext Solution of Linear/Non-Linear <i>Supp Lsn</i> Assessment Project 10 days (3 lessons and Assessment Prjct)</p> <p>Review and Semester Exam: 6 days</p> <p>QTR 4 Total: 48 days</p>

Algebra II YAG

Make time in class for projects by flipping your classroom.

Content: Students will learn the domain and range of exponential and logarithmic functions

YouTube Video

What about students who don't have access to youtube at home?

Watch during tutoring, during lunch, before or after school, in the school library, on a friends device, and . . . during another class when they aren't doing anything!



Photo by Charlotte May from Pexels

Beg or borrow project ideas!

Do Not Reinvent the Wheel.

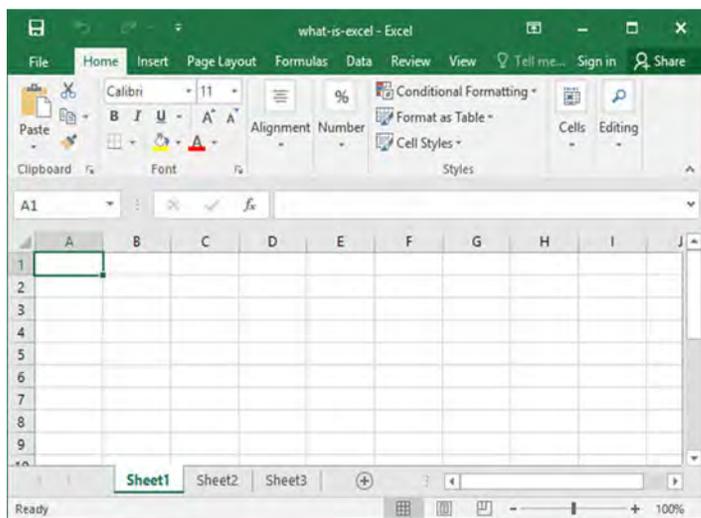
Tailor the projects to the needs of your students.

Find math projects specific to your area!

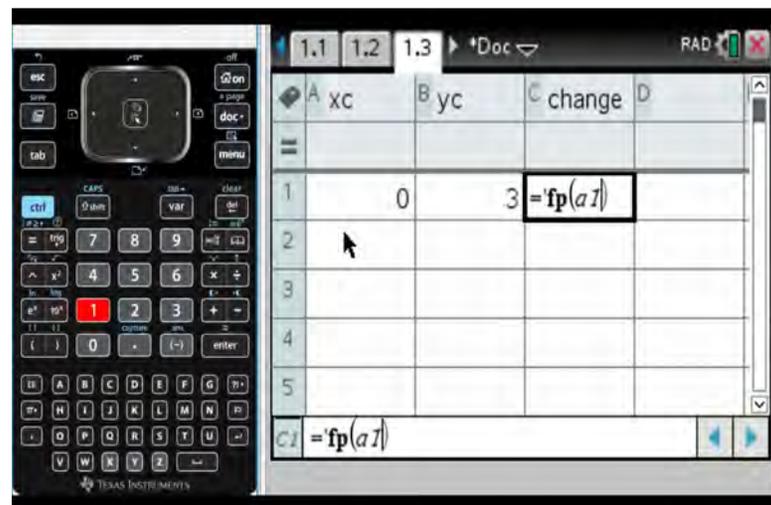
Use a variety of technology!

Ti Nspire Calculators w/ Teacher software

Texas Instruments Rovers



Excel
Spreadsheets



Great online resources:

Robert Kaplinsky Problems

Which One Doesn't Belong

Village Math Problems

Great online resources:

Texas Instruments
Activities

Zombie Activity

Code Breakers

Rover Projects

My Material

Finance a Car Project

Graph a Picture
Project

Pirate Project

Collaborate with other teachers!



Do theme based projects together!

Who Am I Project

Zombie Apocalypse

Wilderness Survival

Happiness Project

Emergency Preparedness

Food Truck Project

Math activities for students who hate math!



By Ellen Piekarski

piekarski.ellen@gmail.com

