Using standards to improve teaching & learning

Anne Keith

goo.gl/N2Ayss (link to all documents)

Anne Keith

7th grade teacher, Bozeman

2010 MT Teacher of the Year

NBCT- Early Adolescence Mathematics

Presidential Award Winner for Math

Serve on MT Board of Public Education

25th year in education

15th year with standards-based classroom

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I LOVE Middle School!

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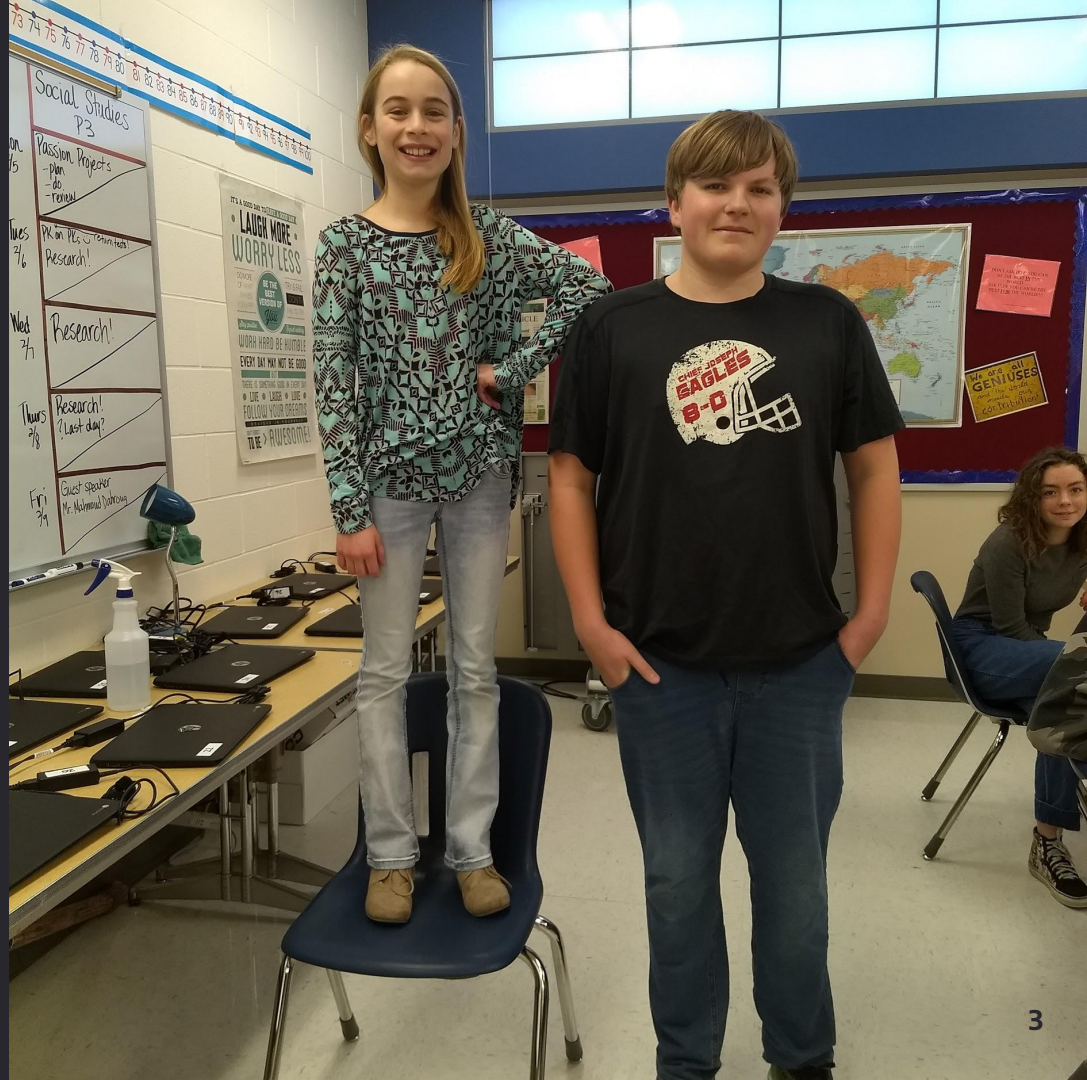
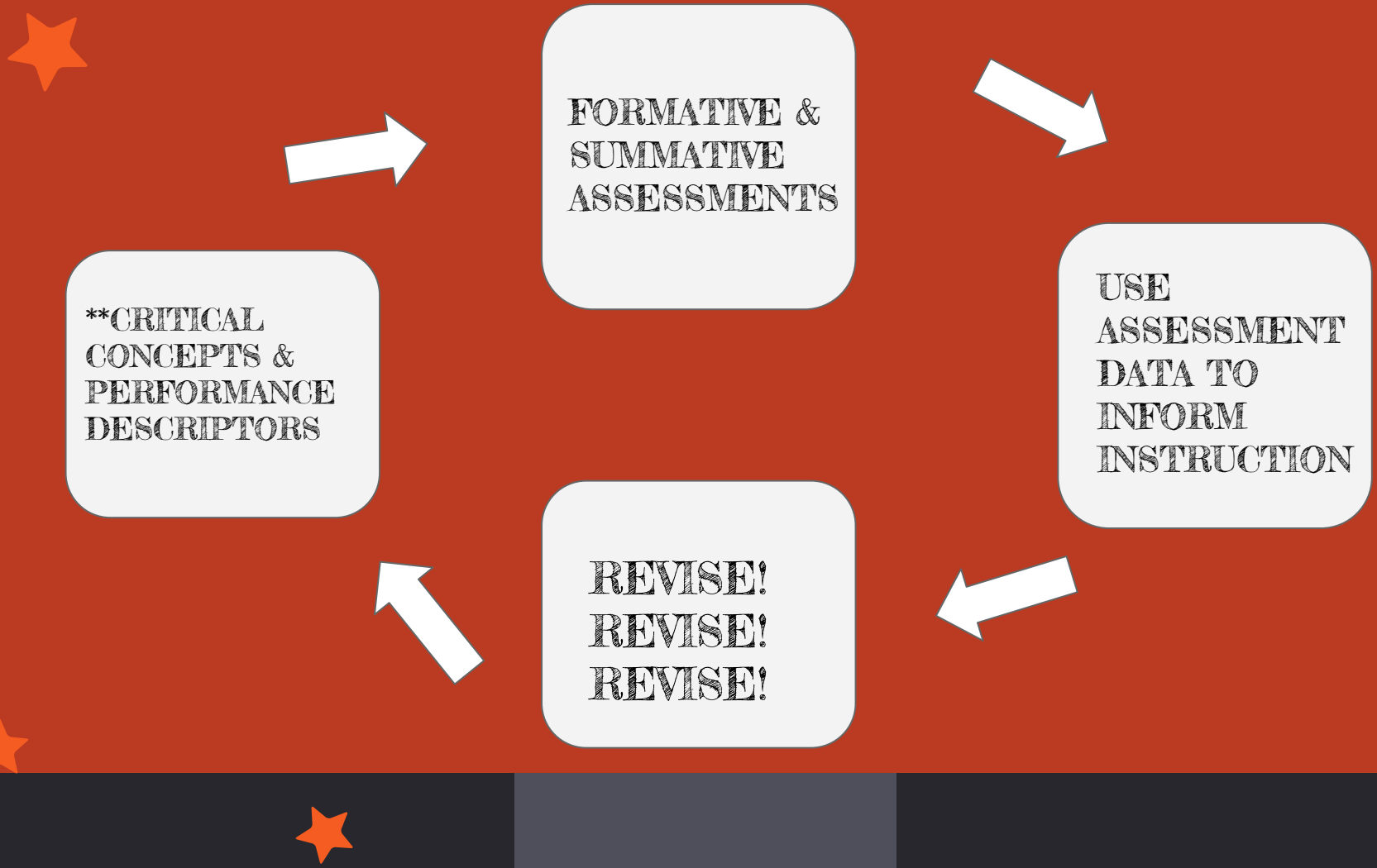


LEARN 1 NEW IDEA!


FORMATIVE & SUMMATIVE ASSESSMENTS
USE ASSESSMENT DATA TO INFORM INSTRUCTION
REVISE! REVISE! REVISE!
**CRITICAL CONCEPTS & PERFORMANCE DESCRIPTORS

CRITICAL CONCEPTS

WE'LL NEVER HAVE ENOUGH TIME!

There is never enough time to do everything, but there is always enough time to do the most important thing.

- Brian Tracy

LIST THE TOP 10 CONCEPTS YOUR STUDENTS SHOULD LEARN THIS SCHOOL YEAR

TELL YOUR STUDENTS ! (& PARENTS)

GROWTH CHARTS...

at the beginning...

Name:_____ Period:_____

Moving Straight Ahead Growth Chart

		Scores (evidence #1)	Scores (evidence #2)	Scores(evidence #3)
LE1	**Solve algebraic equations with one variable**			
PR3	**Write equations that represent proportional relationships to solve multistep problems**			
PR2	**Identify proportional relationships from graphs and tables**			
LE2	**Solve problems involving linear equations in two variables (use linear equations to solve problems)**			
LE3	**Graph ordered pairs that result from evaluating linear relationships.**			

Self Reflection:

FORMATIVE & SUMMATIVE ASSESSMENTS

FORMATIVE:

- ❑ Shorter- “quick dip” into few concepts
- ❑ Entrance cards
- ❑ Exit tickets (sticky notes, small sheets)
- ❑ Google forms, Google Sheets
- ❑ Can re-learn concepts (rewrite process)

SUMMATIVE:

- ❑ Longer- all concepts learned during unit
- ❑ Performance tasks
- ❑ Projects (ie-writing children’s books with linear relationships)
- ❑ No re-takes or re-do’s

Comparing and Scaling Check-Up #2

Standards:

7.RP.A.1 - Compute unit rates associated with ratios or fractions 7.RP.A.2.B - Identify the constant of proportionality (unit rate)	AP
7.RP.A.3 - Use proportional relationships to solve multistep ratio and percent problems	E

1 - Emerging

Apples are $10.00 for 5 pounds.

How much would 1 pound cost?

$\frac{\$}{\text{Pounds}}$ $\frac{10 \div 5}{5 \div 5} = \frac{2}{1}$

1 pound will cost $2

:)

There are 100 pets. 30 of them are cats.

What percent of the pets are cats?

$100 \div 30 = 3.\overline{3} \times 100$

$= 33\frac{1}{3}\%$

X

2 - Developing

Johnny has been driving for 5 hours and has traveled 350 miles.

What is the unit rate in **miles per hour?**

$\frac{\text{HRS}}{\text{MILES}}$ $\frac{5}{350} = \frac{1}{70}$:)

70 MILES per hour

An airplane traveled 2000 miles after flying for 8 hours.

What is the unit rate in **miles per hour?**

$\frac{\text{MILES}}{\text{HRS}}$ $\frac{2000}{8} = \frac{250}{1}$:)

250 MILES per hour

There are 25 cookies. 14 of them are chocolate chip.

What percent of the cookies are chocolate chip?

$24 \div 14 = 1.\overline{7} \times 100$

$= 71\frac{1}{4}\%$

X

Comparing and Scaling Test

Problem		Proficiency Level					
	PR 2 - Identify proportional relationships from graphs and tables (Averaged from the two sub-standards below)	**4**	**3.5**	**3**	**2.5**	**2**	**1**
1	Decide whether two quantities are in a proportional relationship	4	3.5	3	2.5	2	1
2	Compute unit rates associated with ratios or fractions Identify the constant of proportionality (unit rate)	4	3.5	3	2.5	2	1
3	**PR 1- Use proportional relationships to solve multistep ratio and percent problems**	**4**	**3.5**	**3**	**2.5**	**2**	**1**

HOW DO YOU KNOW IF YOUR STUDENTS ARE “PROFICIENT”?

Best P.D. I’ve ever had is conversations with colleagues….

“What **evidence** will convince us that our students have the knowledge & skills defined by the standards?”

PERFORMANCE DESCRIPTORS

Advanced Proficient = 4

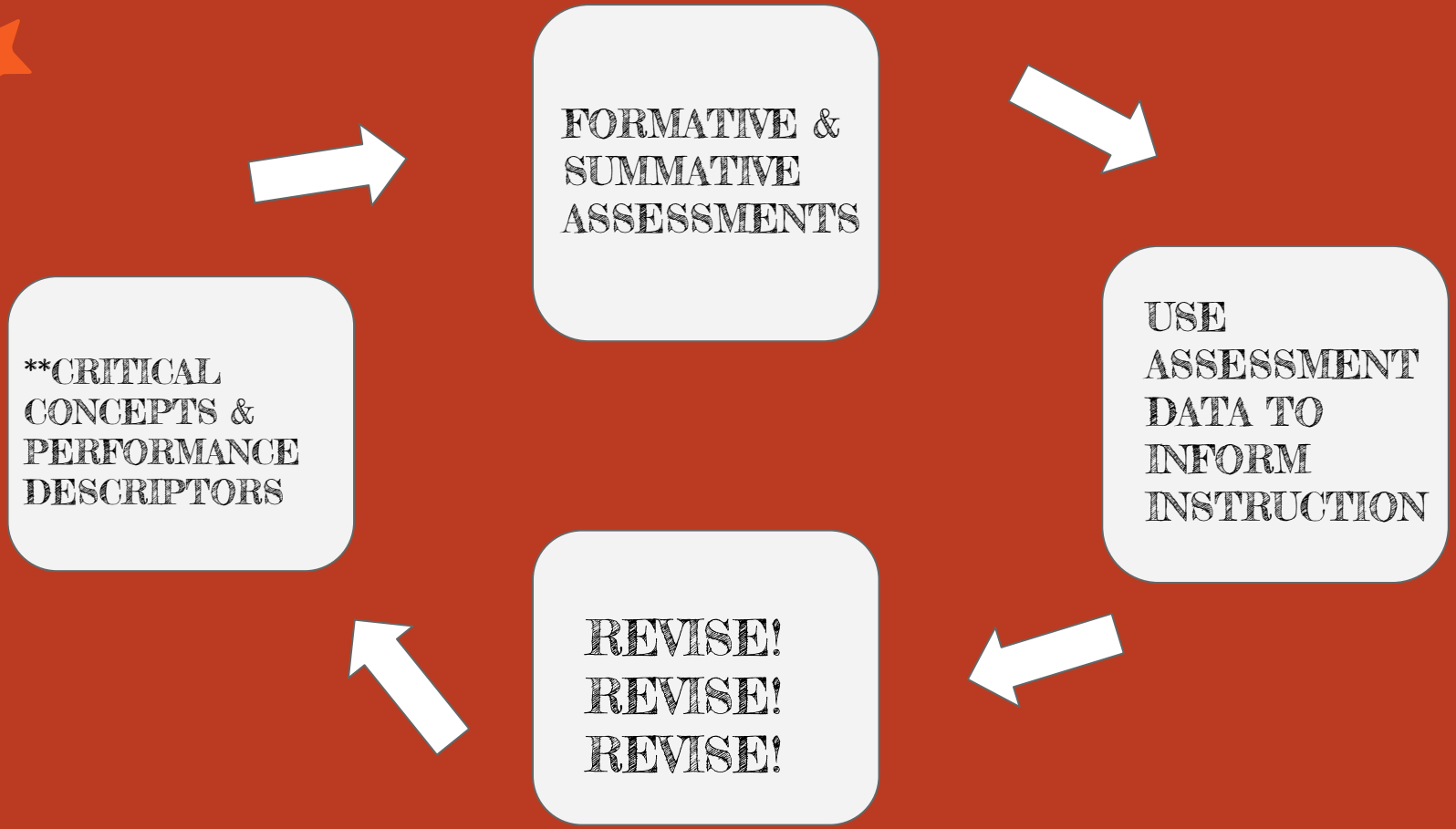
Proficient Plus = 3.5

Proficient = 3

Developing Plus = 2.5

Developing = 2

Emerging = 1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**CRITICAL CONCEPTS & PERFORMANCE DESCRIPTORS

“

Assessment results:

- What concepts do students know?
- What concepts need more work?

SO WHAT?

What do you do with your classroom assessment data?

- *2 groups: GOT IT, or NOT YET → design different lessons for them*
- *“Stations” with different levels of learning*
- *4 corners with different activities*
- *On-line resources that differentiate (EdReady)*
- *Math support classes (IFA & elective)*

YOUR IDEAS?

Growth Mindset

If you believe students should learn from their mistakes... how do they?

Name:_____ Period:_____

Math Rewrite

Name of Check up/Test (staple it to the back of this sheet):	The Critical Concepts you are re-writing:

Which problem number did you miss?	What did you do incorrectly? What math concept did you not understand? Explain.	Do the problem correctly.	Now find 1 similar problem in the book, or find a new problem on-line to do to show your understanding.

Self-Reflection

I learned that…….

I've done the following to ensure that I understand the above critical concepts…

A better way for me to learn this would be…

Is there anything that is still confusing? Would you like to get some extra help?

GROWTH CHARTS... at the end of the unit...

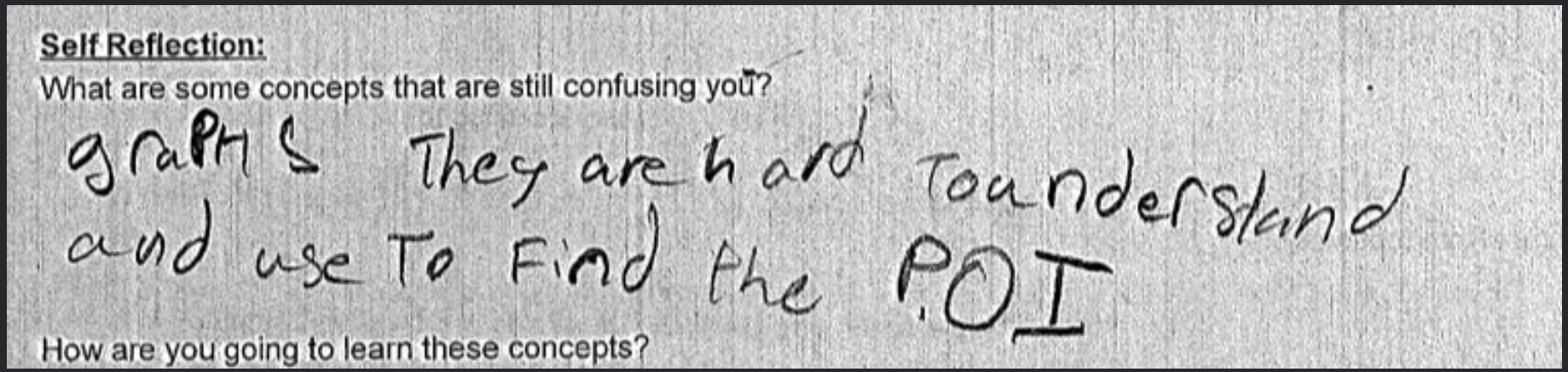
Name:_____ Period:_____

Moving Straight Ahead Growth Chart

		Scores (evidence #1)	Scores (evidence #2)	Scores(evidence #3)
LE1	**Solve algebraic equations with one variable**			
PR3	**Write equations that represent proportional relationships to solve multistep problems**			
PR2	**Identify proportional relationships from graphs and tables**			
LE2	**Solve problems involving linear equations in two variables (use linear equations to solve problems)**			
LE3	**Graph ordered pairs that result from evaluating linear relationships.**			

Self Reflection:

Give students the opportunity to reflect on their OWN learning

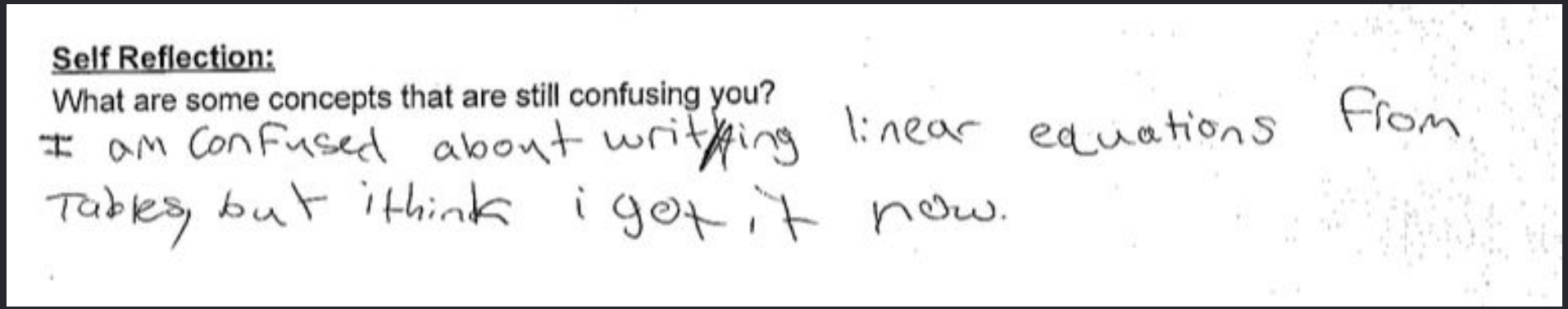


Self Reflection:

What are some concepts that are still confusing you?

graphs They are hard to understand and use To Find the P.O.I

How are you going to learn these concepts?



Self Reflection:

What are some concepts that are still confusing you?

I am confused about writing linear equations from tables, but i think i got it now.

“

Parent Note (optional):

- I would like to see that she can confidently solve linear equations and find the point of intersection between two lines. She hasn't shown that she has those concepts down yet.

Rate yourself in the following areas:

I listen carefully as instructions are given	AP	P+	(PR)	DP	DE	E
I am a helpful "elbow partner" to the person I sit next to	AP	(P+)	PR	DP	DE	E
I ask questions in class when confused	AP	P+	(PR)	DP	DE	E
I do my POOF as soon as it's assigned	(AP)	P+	PR	DP	DE	E
I am using EdReady twice a week	(AP)	P+	PR	DP	DE	E
I know my multiplication math facts	AP	P+	(PR)	DP	DE	E
I study for assessments by reviewing my flip-chart & class notes	(AP)	P+	PR	DP	DE	E

Based on your self-analysis, what is one area you could improve in the next unit?

My math facts

“

Parent Note (optional):

Taylor's on board to make it a top priority of 5-10 minutes of math facts nightly! I'm SUPER proud of her

Rate yourself in the following areas:

I listen carefully as instructions are given	AP	**P+**	PR	DP	DE	
I am a helpful "elbow partner" to the person I sit next to	**AP**	P+	PR	DP	DE	E
I ask questions in class when confused	AP	P+	PR	**DP**	DE	E
I do my POOF as soon as it's assigned	**AP**	P+	PR	DP	DE	E
I am using EdReady twice a week	AP	P+	PR	DP	**DE**	E
I know my multiplication math facts	AP	**P+**	PR	DP	DE	E
I study for assessments by reviewing my flip-chart & class notes	**AP**	P+	PR	DP	DE	E

Based on your self-analysis, what is one area you could improve in the next unit?

I could improve more by studying more before tests.

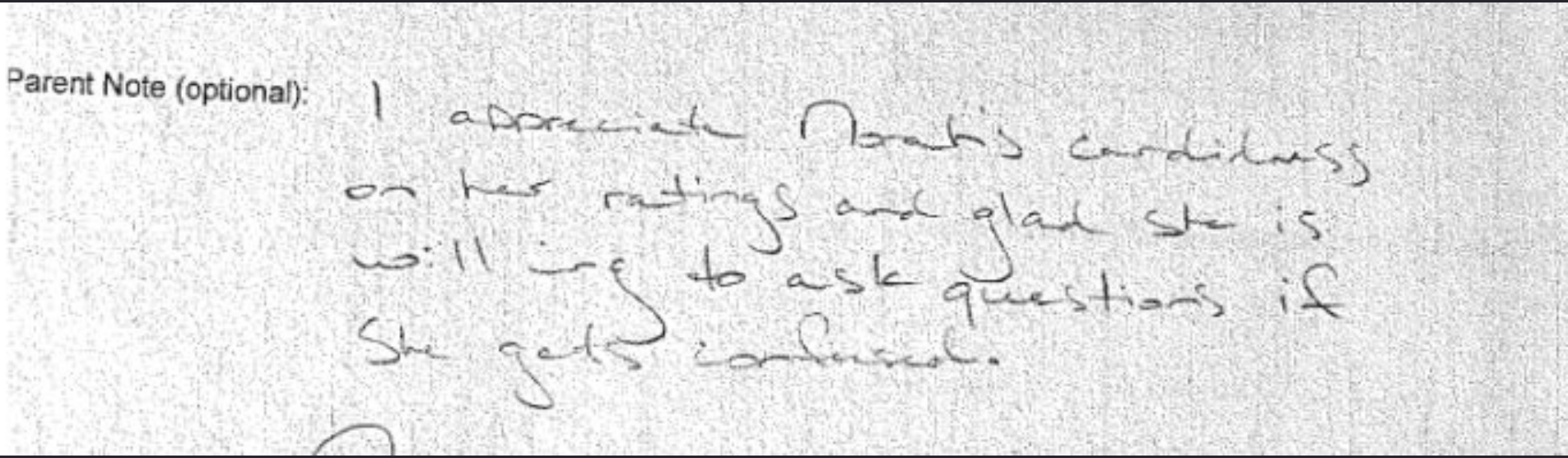
Rate yourself in the following areas:

I listen carefully as instructions are given	AP	P+	**PR**	DP	DE	E
I am a helpful "elbow partner" to the person I sit next to	AP	P+	**PR**	DP	DE	E
I ask questions in class when confused	AP	P+	PR	DP	**DE**	E
I do my POOF as soon as it's assigned	AP	P+	PR	**DP**	DE	E
I am using EdReady twice a week	AP	P+	**PR**	DP	DE	E
I know my multiplication math facts	**AP**	P+	PR	DP	DE	E
I study for assessments by reviewing my flip-chart & class notes	AP	P+	**PR**	DP	DE	E

Based on your self-analysis, what is one area you could improve in the next unit?

Asking questions in class.

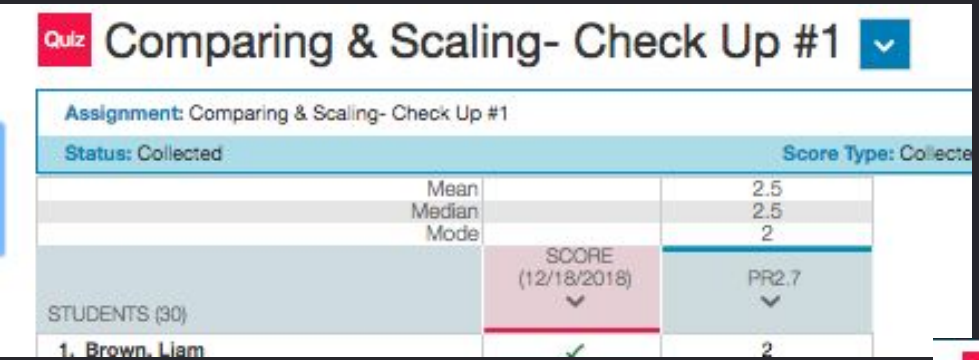
“


Parent Note (optional):
I appreciate Noah's candidness on her ratings and glad she is willing to ask questions if she gets confused.

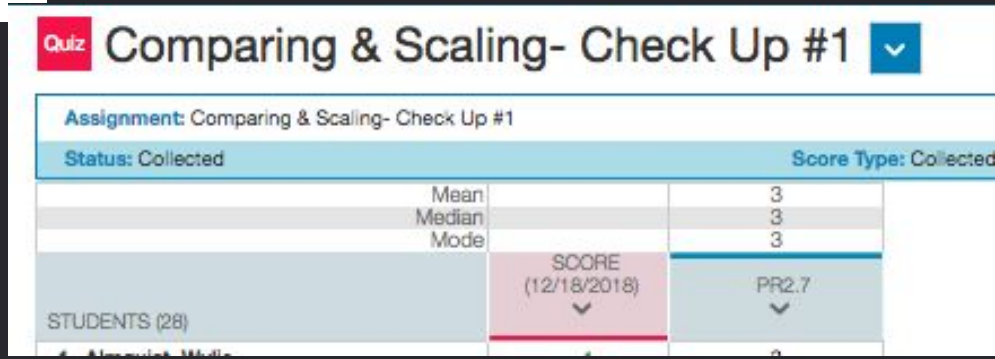
YOUR IDEAS?

POWER TEACHER PRO

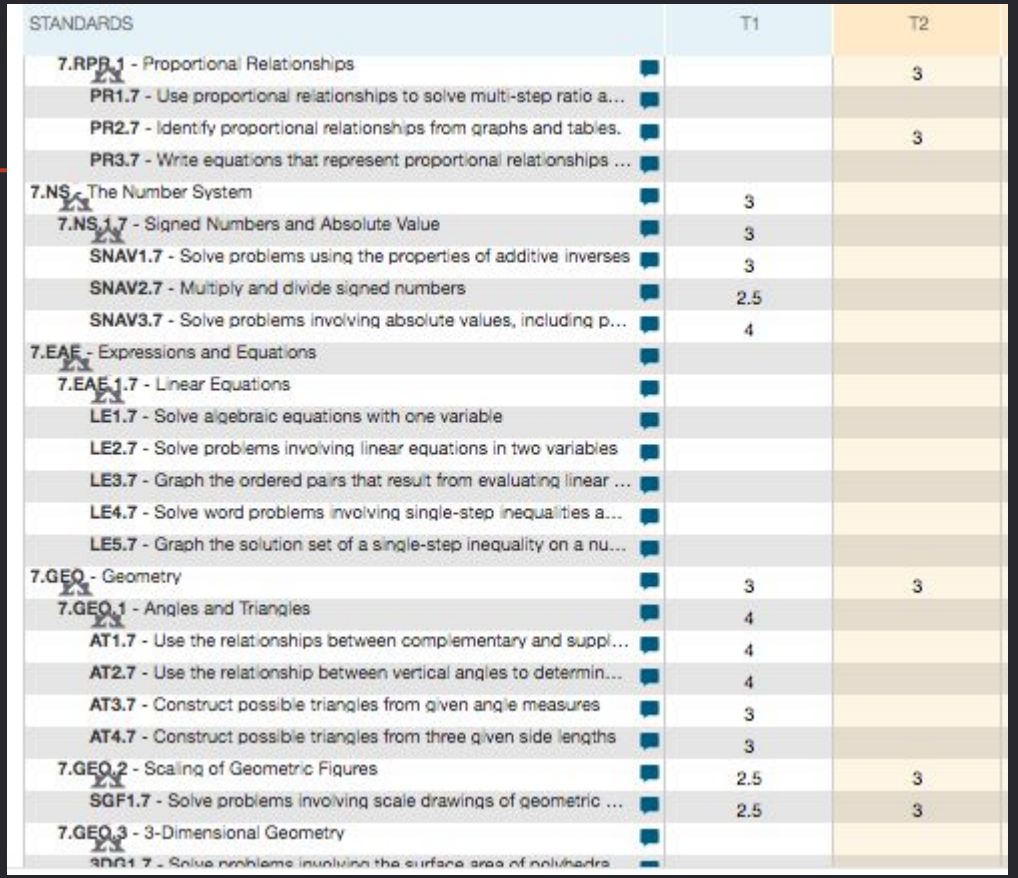
2 different classes, same assessment



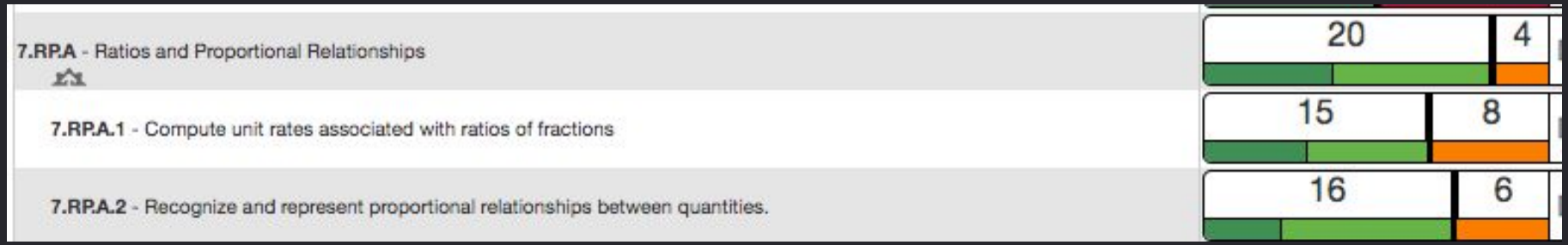
PR2 = Identify proportional relationships from graphs & tables



Can identify students strengths & areas of concern… which is much more meaningful than an overall grade in math class!



STANDARDS	T1	T2
7.RPR.1 - Proportional Relationships		3
PR1.7 - Use proportional relationships to solve multi-step ratio a…		
PR2.7 - Identify proportional relationships from graphs and tables.		3
PR3.7 - Write equations that represent proportional relationships …		
7.NS - The Number System	3	
7.NS.1.7 - Signed Numbers and Absolute Value	3	
SNAV1.7 - Solve problems using the properties of additive inverses	3	
SNAV2.7 - Multiply and divide signed numbers	2.5	
SNAV3.7 - Solve problems involving absolute values, including p…	4	
7.EAE - Expressions and Equations		
7.EAE.1.7 - Linear Equations		
LE1.7 - Solve algebraic equations with one variable		
LE2.7 - Solve problems involving linear equations in two variables		
LE3.7 - Graph the ordered pairs that result from evaluating linear …		
LE4.7 - Solve word problems involving single-step inequalities a…		
LE5.7 - Graph the solution set of a single-step inequality on a nu…		
7.GEO - Geometry	3	3
7.GEO.1 - Angles and Triangles	4	
AT1.7 - Use the relationships between complementary and suppl…	4	
AT2.7 - Use the relationship between vertical angles to determin…	4	
AT3.7 - Construct possible triangles from given angle measures	3	
AT4.7 - Construct possible triangles from three given side lengths	3	
7.GEO.2 - Scaling of Geometric Figures	2.5	3
SGF1.7 - Solve problems involving scale drawings of geometric …	2.5	3
7.GEO.3 - 3-Dimensional Geometry		
3DG1.7 - Solve problems involving the surface area of polyhedra		

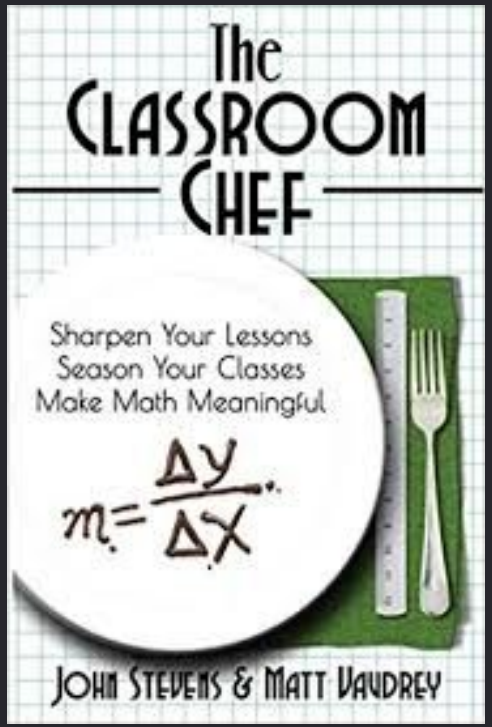


Green = proficient
Orange = not yet

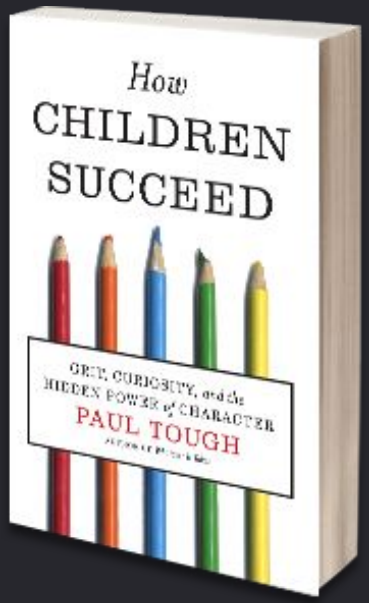
CONCERNS:

- Current main focus of math is critical concepts rather than tasks demanding higher level thinking & integration of subjects
- Need to audit our assessments
- Need to keep the 8 Mathematical practices on the radar
- "MULTIPLE & VARIED assessment opportunities" needed (Keynote speaker today) - Want many ways to show proficiency, not just paper & pencil

Growth mindset....



ARE NON-ACADEMICS MORE IMPORTANT THAN ACADEMICS?



Attributes of a Successful Learner in Math

Organization

- Turn your POOF in on time
- Come to class prepared (notebook, pencil)
- Come to class on time
- Use your notebook correctly
- Keep table and bins clean and organized

Engagement

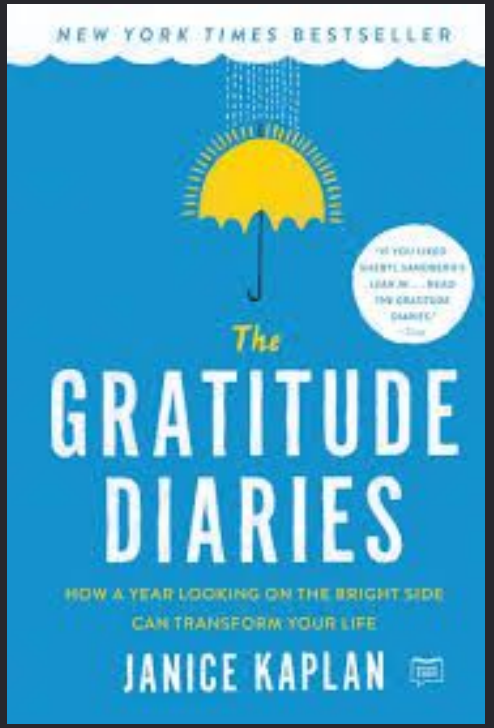
- Participate in class - answer and ask questions
- Listen to who's speaking
- Do the Do Now- NOW!
- Stay on Task
- Be a good elbow partner

Perseverance

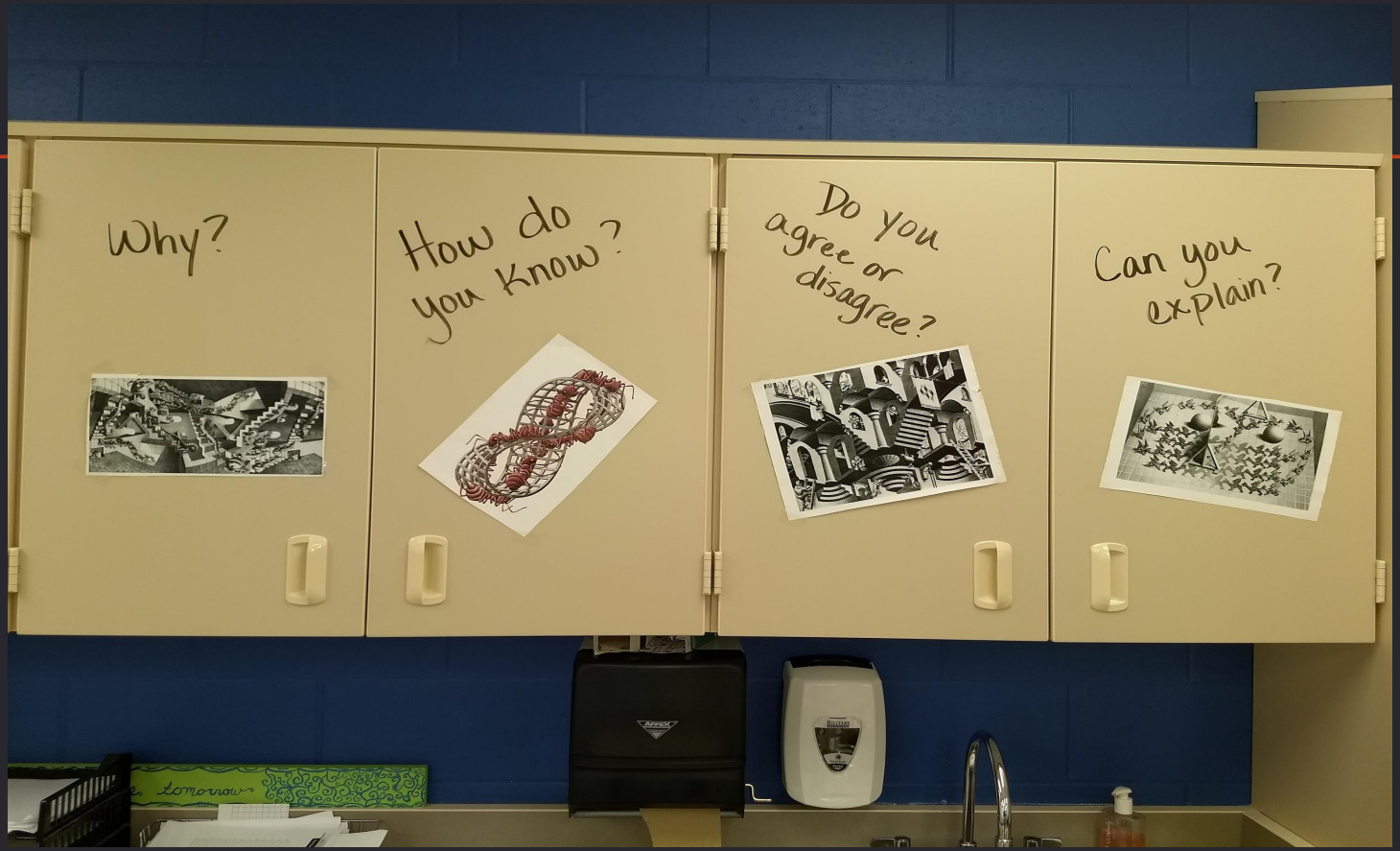
- Try your best
- Learn from your mistakes - Do ReWrites
- Keep trying when things get hard (Advanced problems)
- Find the best strategy that helps you
- Ask for help

Universals

- Include others
- Help your classmates
- Participate in class conversations
- Use classroom materials respectfully and appropriately
- Be KIND!

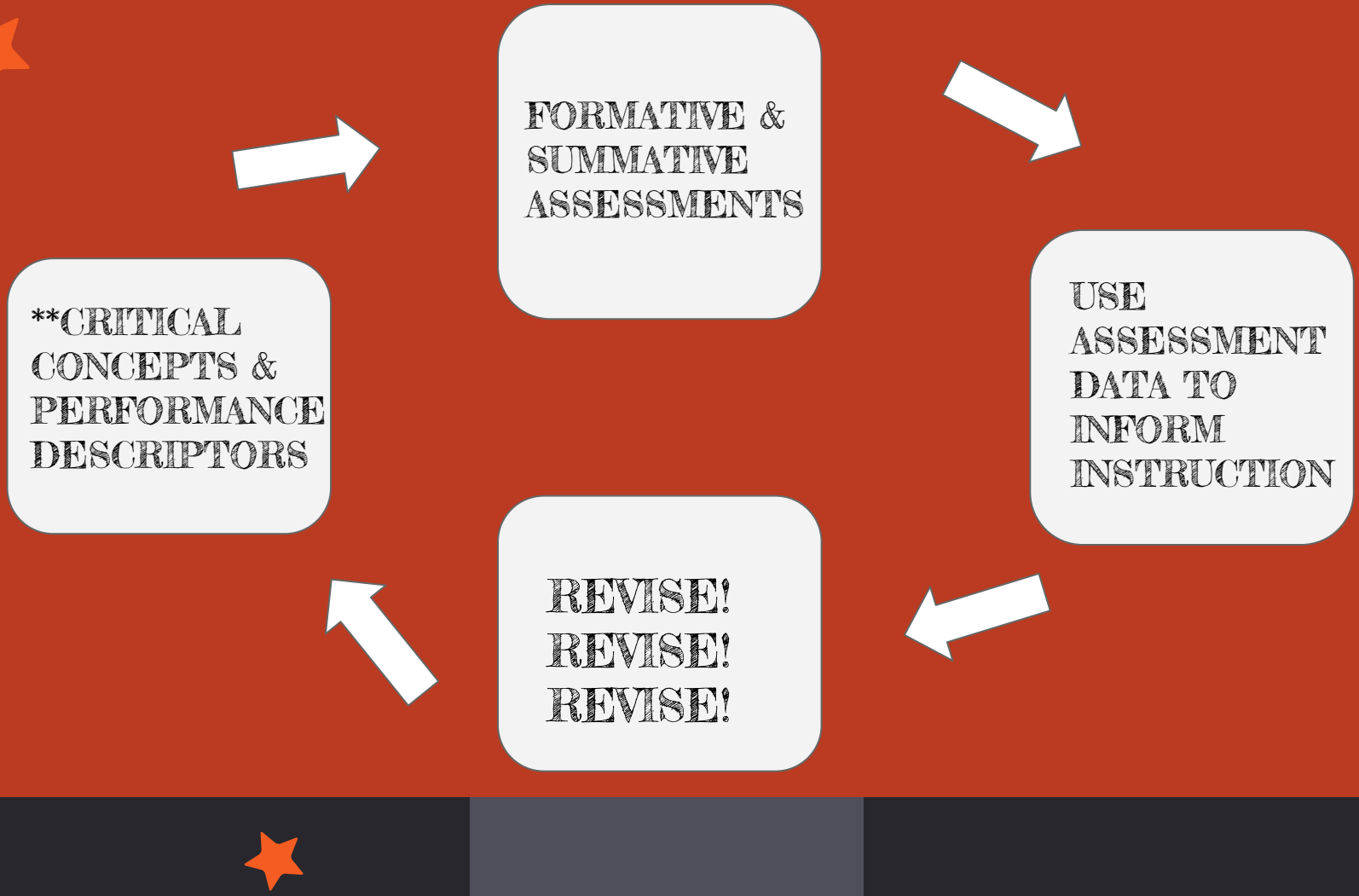

NEW YORK TIMES BESTSELLER
The
GRATITUDE
DIARIES
HOW A YEAR LOOKING ON THE BRIGHT SIDE
CAN TRANSFORM YOUR LIFE
JANICE KAPLAN


THE COMPASSION
PROJECT


Why?
How do you know?
Do you agree or disagree?
Can you explain?

“

CONTINUAL REVISION PROCESS!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RESOURCES:

Edutopia article (linked) “Will letter grades survive?”

How To Grade For Learning - Ken O’Connor □

A Repair Kit for Grading: 15 Fixes for Broken Grades - Ken O’Connor □

Classroom Assessment & Grading that Work - Robert Marzano □

Fair Isn’t Always Equal - Rick Wormeli □

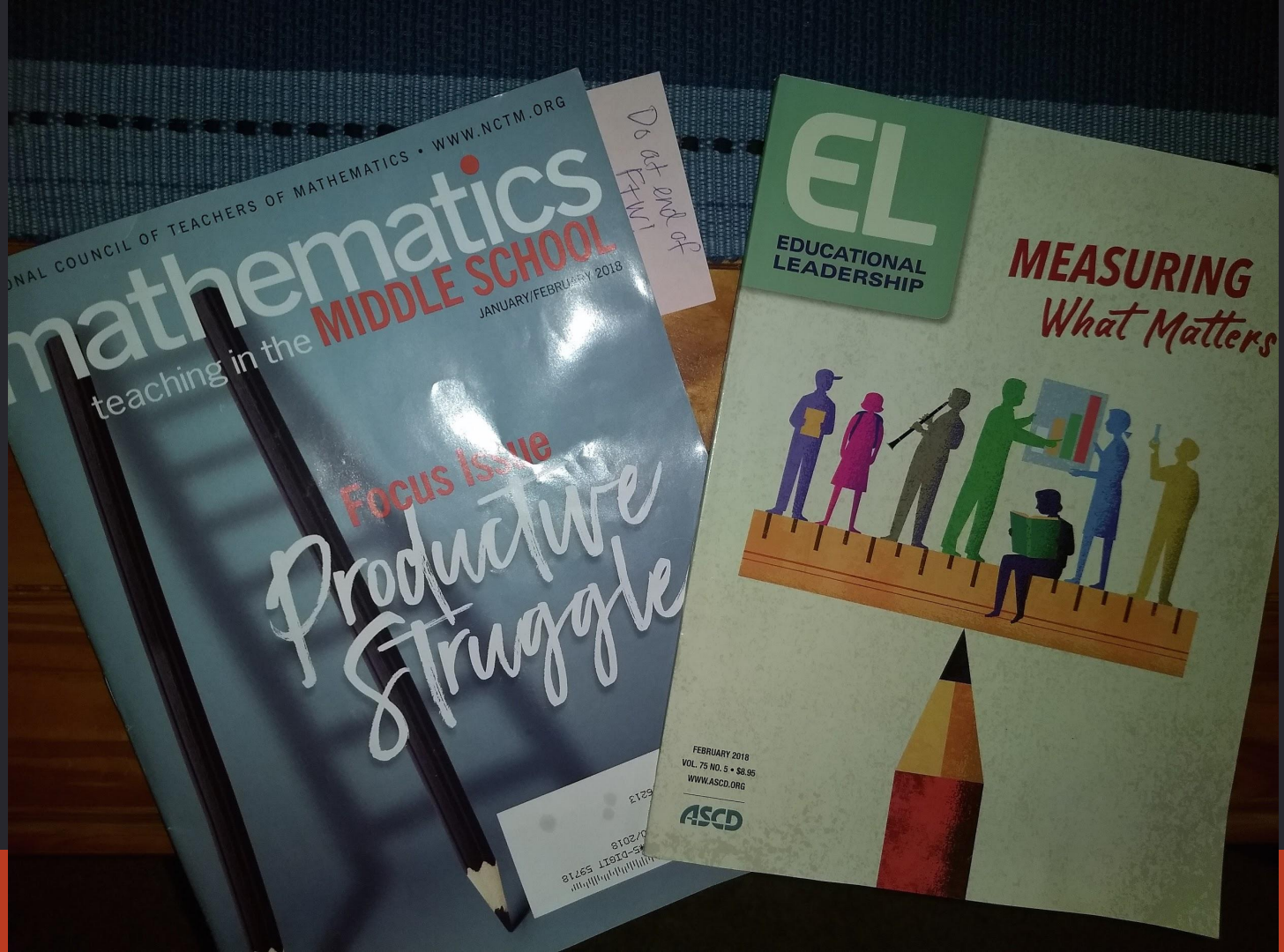
Integrating Differentiated Instruction & Understanding by Design - Carol Ann Tomlinson & Jay McTighe □

How to Teach so Students Remember - Marilee Sprenger □

Grading - Susan Brookhart □

Mindset - Carol Dweck

How Children Succeed - Paul Tough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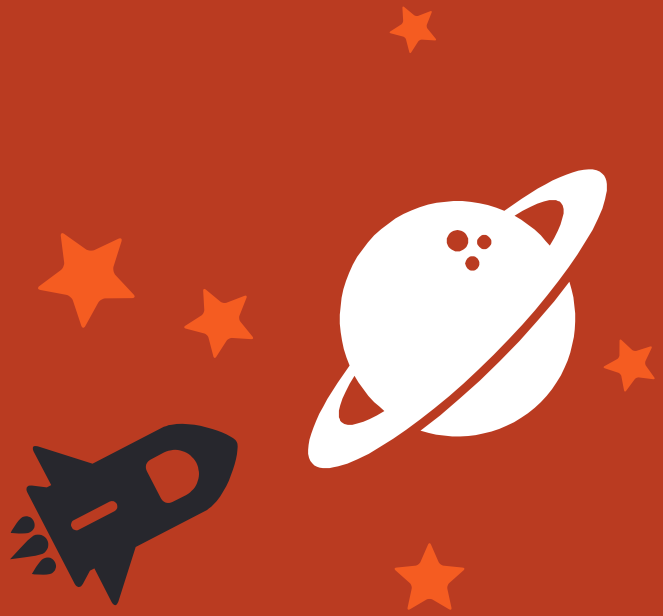
DID YOU LEARN 1 NEW IDEA?

QUESTIONS?



THANKS!

Please provide feedback for future presentations (I have a growth mindset!)

anne.keith@bsd7.org

Remember, all resources found at:

goo.gl/N2Ayss