

Teaching Math in the Common Core Era

Presenters:

Kathryn Lent & Celia Volbrecht, CST RAEN

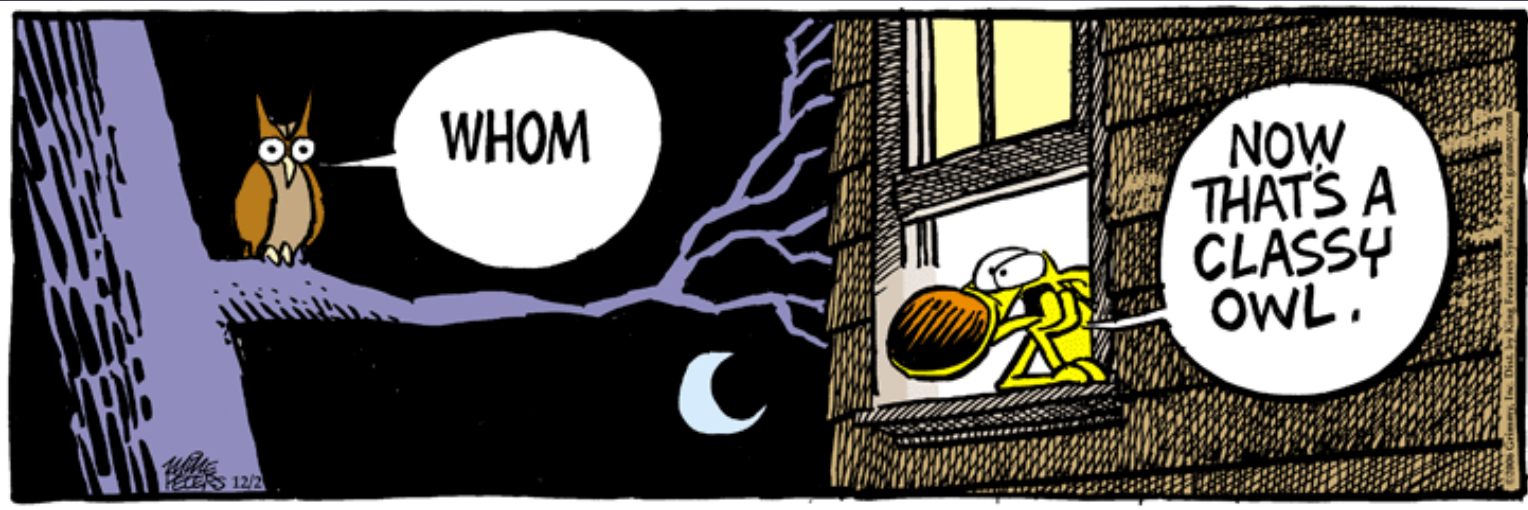
Patrick Cravillion, NYCDOE

November 9 & 10, 2015

Warm Up Activity

Leggo My Lego!

Who's Who?



Juggle Hats Today

- Teacher
- Student
- Struggling Student



What Does it Mean to Do Math?

Answer this Question

- What does it mean to “Do Math?”
- Activity; Handout
 - Pair/Share
 - Pick your top 5
 - Report out
 - “Votes” recorded on chart paper



“Hate Math?”

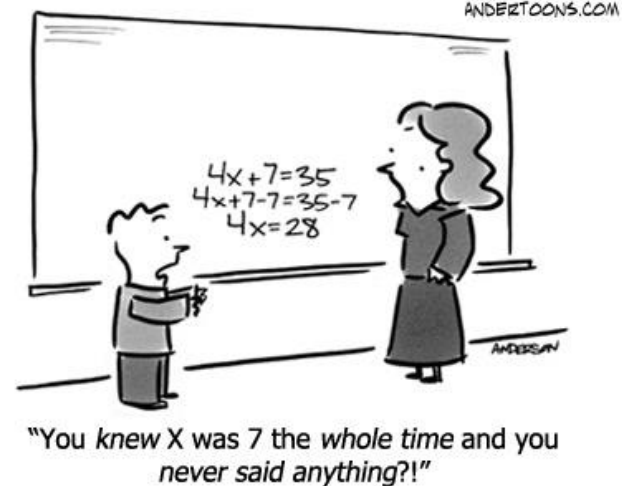
- Article
 - *“Teaching Math to People Who Think They Hate It”*
- Activity
 - Pair / Share
 - What stands out to you?
 - Report out to group



Developing a Mind Set and Perseverance

Developing a Mind Set & Perseverance

- Productive Struggle
 - Article, “*Struggle Means Learning: Difference in Eastern and Western Culture*”
 - Small Groups, Read
 - Pick a sentence → Phrase → Word
 - Share / Discussion
 - How does the article relate to your students?
 - Additional Handout



“I’m thankful for my struggle because without it I wouldn’t have found my strength.”

Unknown

“WHERE
THERE
IS NO
STRUGGLE,
THERE
IS NO
strength.”

Oprah Winfrey

Problem Solving Strategies

- Look for a pattern
- Construct a table
- Make an organized list
- Act it out
- Draw a picture
- Use objects
- Guess and check
- Work backward
- Write an equation
- Solve a simpler (or similar) problem
- Make a model

Condo Challenge

- Activity
 - Handout, materials
 - Groups of 4
 - 3 students, 1 recorder
 - List strategies you used
 - Identify the struggles encountered
 - Explain ways you persevered
 - Report out to whole group



Enjoy Your Lunch!



The Art of Questioning

Quote of the Day:

"Most teachers waste their time by asking questions which are intended to discover what a pupil does not know whereas the true art of questioning has for its purpose to discover what the pupil knows or is capable of knowing."

Albert Einstein

Types of Questions

- Open

- Closed



Ask Open-Ended Questions

Open-ended questions which begin with words like “what,” “how” and “why” will help eliminate dead-end “yes” or “no” responses and other unhelpful one-word replies.



The Art of Questioning

- Activity
- Pair/Share
 - Using the handout, “The Art of Questioning in Mathematics”:
 - Pick your top 5 favorites
 - Report out to whole group as a presenter records the “votes” on chart paper
 - Discuss the outcomes

The Art of Questioning

- Article, “The Art of Questioning: The Teacher’s Role”



Role Playing Activity

- Groups of 4 (1 Teacher, 2 Struggling Students, 1 Recorder)
- Attempt to solve problem provided (it's about the process)
- Using chart, Recorder writes the questions asked by the teacher into categories outlined in the chart
- Report out to large group
 - How did it feel as the teacher?
 - How did it feel as the student?
 - Students – What questions helped you the most?



Think about the following...

- How else can you support the efforts of your students without giving too much away?
- Identify what you want your students to walk away with/ add to their “toolbox”



Change Your Words, Change Your Mindset

FROM...

- I don't understand
- I give up
- It's good enough
- This is too hard
- I made a mistake
- I'll never be as smart as her
- I can't make this any better
- I'm not good at this

TO...

- What am I missing?
- I'll use some of the strategies that I've learned
- Is this really my best work?
- This may take some time and effort
- Mistakes help me improve
- I'm going to figure out what she does and try it
- I can always improve, I'll keep trying
- I'm on the right track

**Reminder:
Practice,
practice,
practice!**

**People
don't
change
overnight.**



Strategies Meet Struggles,

and a few good questions thrown in!

Lesson Title

Math
Adult Education
November 9 /10, 2015

Overview

We need to define this

Objective(s)

- This also
-

Activities

- 1.
- 2.
- 3.

Strategies Students Can Use

- 1.
- 2.
- 3.
- 4.
- 5.

Guide on the Side: Questions You Can Ask

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Evaluation/Assessment

Materials

-
-
-
-

Other Resources

-
-
-
-

Adjustments Needed?

Miscellaneous

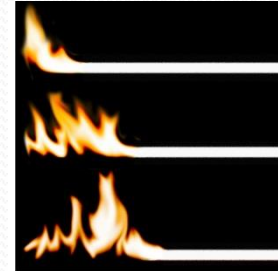
Develop a Lesson Plan (using today's techniques)

- Good morning Mr./Mrs./Ms. Phelps
- Your tools:
 - A Problem
 - A Lesson Plan Outline
 - Chart Paper
 - Markers



Develop a Lesson Plan

- Your job, if you choose to accept it:
- Break into pairs
 - Develop a Lesson Plan
 - Identify all strategies students can use
 - If not many, how can you make adjustments to allow for more?
 - Identify questions you can ask students to guide them in solving the problem
 - On separate sheets of chart paper, record:
 - As many strategies you can find to solve the problem
 - The questions you can ask students



Develop a Lesson Plan

- Post on the wall when done, one of your presenters will guide you as to where
- Gallery Walk
- Discussion

- This PowerPoint will not self-destruct in 5 seconds, but one of the presenters may!



Wrap It Up!

- Brief Summary
- Any Questions?
- Complete RAEN Evaluation
- Additional Handouts



Contact Information

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