

Math Teaching Techniques

Texas Home School Coalition Convention
#THSC2012

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Find this slide deck online *now* at
www.MathFour.com/THSC12

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How do *you* teach math?

- Unschooling
- Stealth Schooling
- One to One
- One to Many
- None to One

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Elements of a Math Lesson

- Verbal Communication
- Written Communication
- The Questions
- The Answers
- Attitude & Culture

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Verbal Communication

- Avoid “just” and “all you have to do.”
- Answer everything - right then.
- Admit when you’re clueless.
- Ask - but be careful.
- If it’s legal, let it go.

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Written Communication

- Use lots of paper
- Use colors
- Write in a logical flow
- Signpost & write reasons
- Skip steps
- Allow for variety

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You try...

$$3x + 5 = 7x - 1$$

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Written Communication

$$\begin{array}{l} 3x + 5 = 7x - 1 \\ 3x + 5 + 1 = 7x \\ 3x + 6 = 7x \\ 6 = 7x - 3x \\ 6 = 4x \\ 6/4 = x \\ x = 1\frac{1}{2} \end{array} \quad \begin{array}{l} 3x + 5 = 7x - 1 \\ 3x = 7x - 1 - 5 \\ 3x = 7x - 6 \\ 3x - 7x = -6 \\ -4x = -6 \\ x = \frac{-6}{-4} \\ x = 1\frac{1}{2} \end{array}$$

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The Questions

- The Challenges of creating good examples
 - Limited digits
 - Digits combine unexpectedly
 - False conclusions could be made

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The Questions

$$\begin{array}{l} 3x + 2 = 4x - 1 \\ 3x = 4x - 3 \\ -x = -3 \\ x = 3 \end{array}$$

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The Questions

$$\begin{array}{l} 3x + 2 = 4x - 1 \\ 3x = 4x - 3 \\ -x = -3 \\ x = 3 \end{array}$$

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The Questions

- Creating good examples takes practice
 - Know primes & products
 - Know sums
 - Do many examples
 - Watch how your examples affect your child's learning

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The Answers

- Who's right?
 - You
 - Your child
 - Back of the Book
- What does it mean to be right?

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You try...

**By
Yourself**

According to an article, the US will compete in 246 of the 302 medal events in the 2012 Summer Olympic Games. If a viewer randomly tunes in to watch one medal event of the Games, what's the chance that the US will be competing in it?

<http://learning.blogs.nytimes.com/2012/07/23/test-yourself-math-july-23-2012/>

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The Answers

- Look at someone else's answer. Is it the same as yours?
 - Same value?
 - Same "shape"?
- Who's right?

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Elements of a Math Lesson

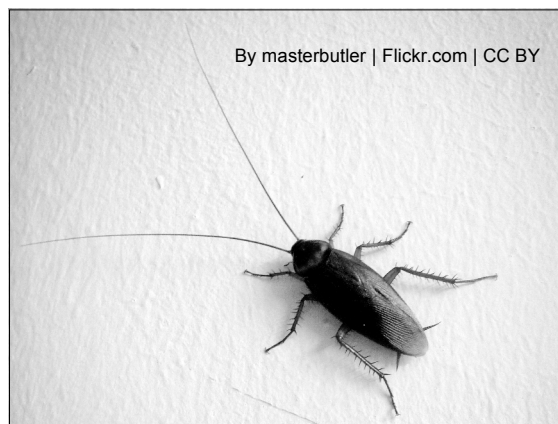
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Attitude & Culture

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Attitude & Culture

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Roaches vs. Kittens

- Cats carry a variety of diseases, some of which can be transmitted to humans:
 - Cat Scratch Disease
 - Hookworm Infection
 - Rabies
 - Ringworm
 - Salmonella Infection
 - Tapeworm

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Roaches vs. Kittens

- Roaches are obsessive compulsive about cleanliness!
- They spend most of their time resting, and the rest of their time cleaning themselves.

(<http://blog.hmns.org/tag/are-roaches-dirty/>)

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Attitude & Culture

- How did you learn to like kittens?
- How did you learn to cringe at roaches?

Social Modeling

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Attitude & Culture

- What's yours?
 - How do *you* feel about math?
 - Why?
 - Do you want your children to feel the same way?

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Attitude & Culture

- How do you model positive math behavior?
 - Find where you do math everyday
 - Say it out loud

That's
MATH!

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You try...

**In a
group**

- What math have you done or seen in the past 24 hours?

That's
MATH!

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**Booth
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It's Your Education (Waterway 6), Saturday 9:30
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