



KENTUCKY CENTER FOR MATHEMATICS

### Math Intervention Expert Talks with Tonda Thompson

# Welcome!

### **Expert Math Interventionist**



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# **More About Me**











# **KY Math Intervention**

Kentucky legislators created the Mathematics Achievement Fund in 2005.

Thank You!

The goal of the MAF is...

"to provide developmentally appropriate diagnostic assessment and intervention services to students, primary through grade 12, to help them reach proficiency in mathematics on the state assessments."



# Agenda

- What does the research say?
- Look at the Mathematics Teaching Practices (MTPs)
- Video Viewing
- What MTPs are evident in the video?
- How can Implementing the MTPs in our teaching improve reasoning and problem solving?



# Research

"The teaching practices, based on knowledge of mathematics teaching and learning accumulated over more than two decades, represents a core set of high-leverage practices and essential teaching skills necessary to promote deep learning of mathematics" (NCTM 2014, p.9).



# **8 Effective MTPs**

- 1. Establish mathematics goals to focus learning.
- 2. Implement tasks that promote reasoning and problem solving.
- 3. Use and connect mathematical representations.
- 4. Facilitate meaningful mathematical discourse.
- 5. Pose purposeful questions.
- 6. Build procedural fluency from conceptual understanding.
- 7. Support productive struggle in learning mathematics.
- 8. Elicit and use evidence of student thinking.



### **Establish Mathematics Goals to Focus Learning**

"Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions." (NCTM, Taking Action, 2017)

When and how might you communicate lesson goals in ways that make sense to students?

Was a goal communicated to the student and how did it drive instruction?

https://youtu.be/lr6mhxfTYsl





### Why not just teach the KAS?

Inbox What do Pinterest Fails have to do with Depth of Knowledge? 🔨 🗸









### **Pose Purposeful Questions**

Do you think the questions make the mathematics visible?

# Were strategies used to ensure the student is thinking of answers?

https://youtu.be/lr6mhxfTYsl





## **Support Productive Struggle**

What might get in the way of students reasoning and thinking for themselves?

What kind of support might students need in order to determine for themselves the correctness of their thinking?





### A Vision for Teachers as Facilitators of Student Learning

"Ambitious teaching views students as capable of making sense of mathematical ideas and being able to use their understanding to solve authentic problems (Lampert, Boerst, and Graziani 2011) and values students' thinking, including emergent understanding and errors, and attends to student thinking in an equitable and responsive manner (Anthony et al.2015)





## **SHARED MATERIALS**

- NUMERAL ROLL
- NUMERAL TRACK
- TREASURE HUNT



### Upcoming Virtual Professional Learning





### Visit Our KCM Website

### www.kentuckymathematics.org



#### **Good News!**

The KCM is hard at work to ensure Kentucky teachers have access to innovative professional development from home.

Through the newly launched <u>KCM Virtual</u> site, mathematics teachers from all grade levels will have access to live zoom meetings, video records and corresponding materials. <u>Read more</u>.

<u>Elementary: Make 'n Take Supporting Number Sense</u> and Fluency - Mar. 23-27

<u>Middle: Fractions, Decimals & Percents - Mar. 30-Apr.</u> <u>3</u>

<u>High: Algebra & Geometry - Thursdays, Mar. 26 - Apr 16</u>

Math Intervention Expert Talks - Apr. 6 - Apr. 10

Focus on Place Value - Apr. 13 - Apr. 17





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