

Promoting Curiosity in the Classroom to Support Learning

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Learning & the Brain

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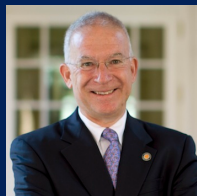
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Curiosity in classrooms: what does it look like?

- How would you define curiosity? (if not sure- what does it look like?)
 - Mentimeter:
 - <https://www.menti.com/gcnax3fbxf>
- Why is it important for learning in school?
- In what ways can students' curiosity be promoted through teaching?



(In Chat)

Curiosity in classrooms: what does it look like?



- (Show results)

How do we get these things to happen?



Learning Objectives:

1. Be able to imagine and recognize what academic curiosity looks like in students
2. Understand how curiosity supports meaningful learning
3. Apply a framework for promoting curiosity to existing instruction

- What is curiosity and why does it matter
- What does curiosity-promotion look like?
 - Why does it work?
- Take-away activity: Brainstorming/Practice

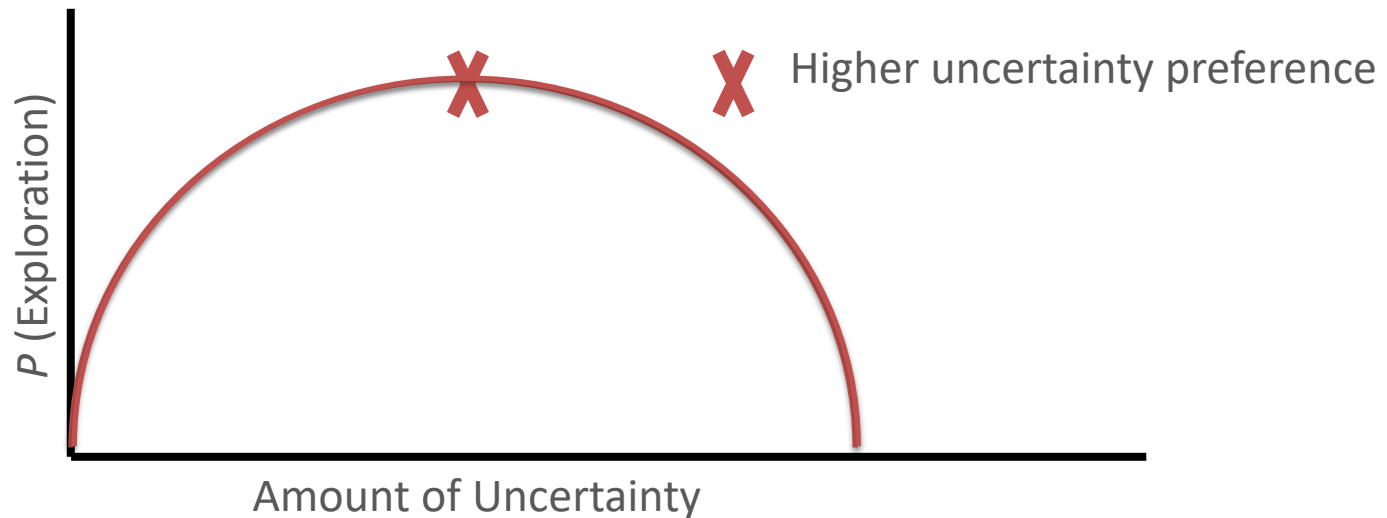
Curiosity in the Classroom: The Challenge

“Curiosity is the very basis of education...” (Edinburgh, n.d.)

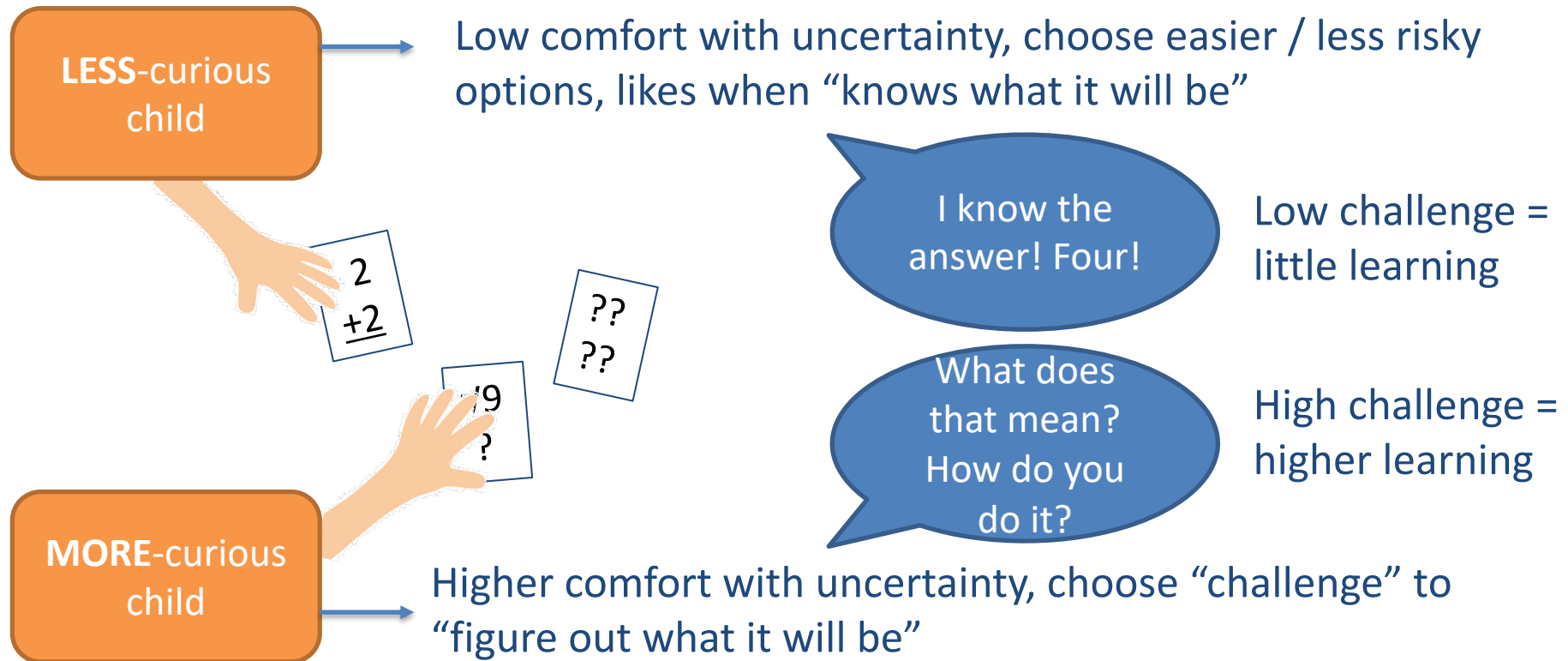
- Curiosity involves a desire for information (Berlyne, 1954)
 - Curiosity thought to diminish in formal schooling, despite still being curious
 - Question asking is rare in school settings
 - Both might be explained by disconnect between educational goals and curiosity-driven learning, a curiosity “risk”
 - (Post & Walma van der Molen, 2018; Tizard & Hughes, 1984; Engel, 2011; Jirout et al., 2019)

Curiosity as preference for (and comfort with) uncertainty

- People report most curiosity, explore most, when there is a “medium” level of uncertainty (Loewenstein, 1998; Jirout & Klahr, 2009)
- Peak of curve varies (Jirout & Klahr, 2011)



Why this matters:



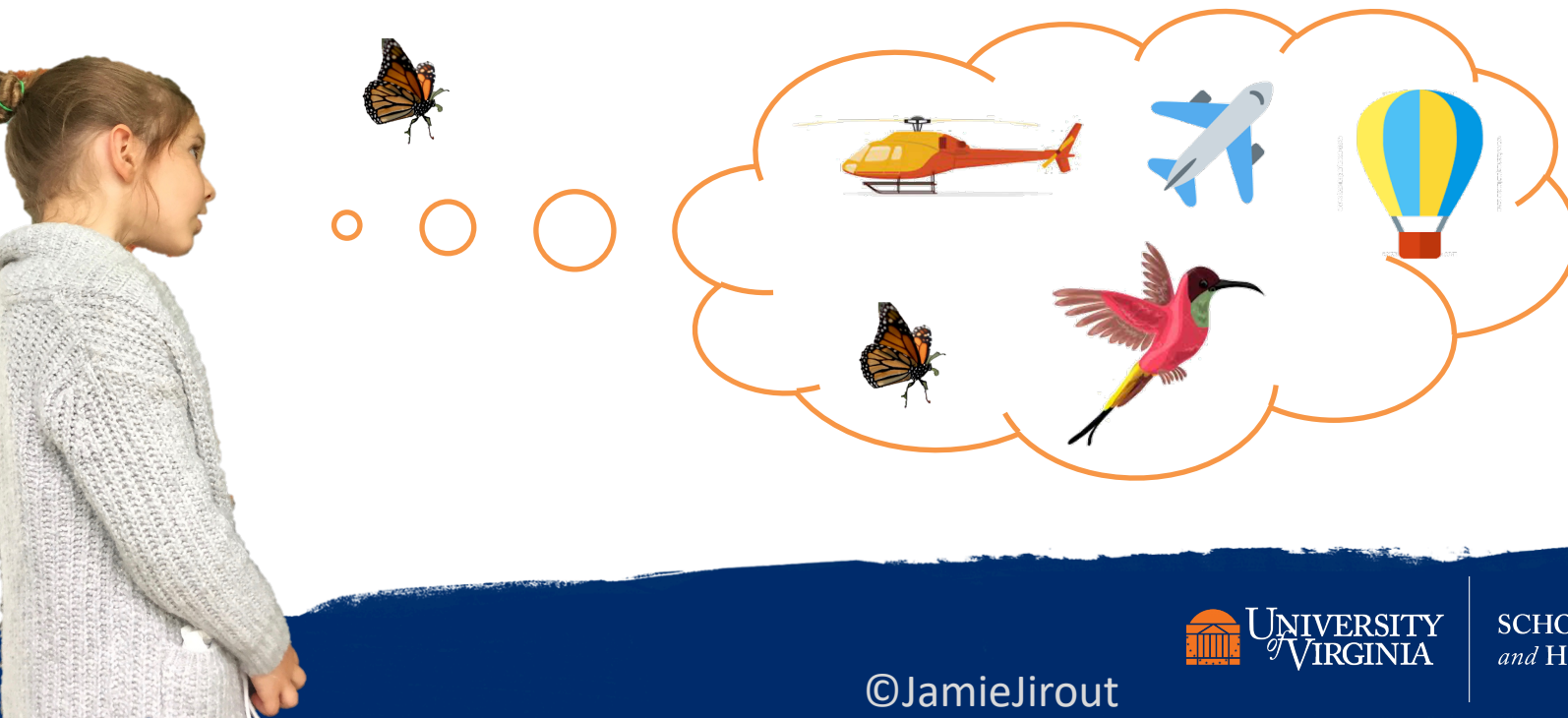
- Classrooms: curiosity-promoting language used might help change learning choices and behaviors

How can curiosity promote learning?

- School philosophy, climate matter (Hamre & Pianta, 2005)
 - Teachers important for creating climate, conveying philosophy
- What teachers say matters (Johnson, 2004)
 - Slight variations in language show impact on exploration

Curiosity as preference for (and comfort with) uncertainty

1. When children are more comfortable with uncertainty, they are more motivated to seek information (see Jirout 2020 for details)

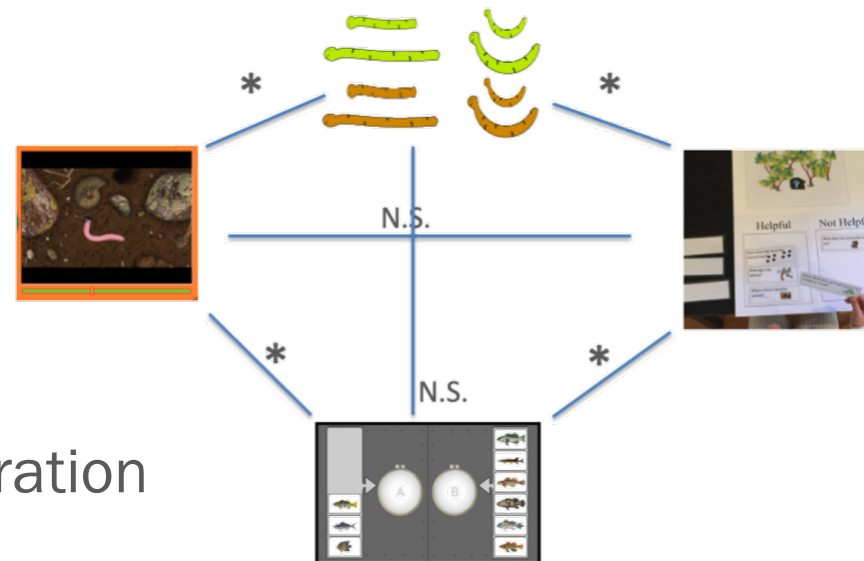


Curiosity as preference for (and comfort with) uncertainty

2. When children are more comfortable with uncertainty, they ask more questions

- Better recognize effective questions
- Learn more from their exploration

(Jirout & Klahr, 2012; 2020; van schijndel et al., 2018)



- Different question types and reasons for asking questions might rely on different processes



Curiosity as preference for (and comfort with) uncertainty

3. When children are more comfortable with uncertainty, they activate previous knowledge and support deeper learning



How can educational practice promote curiosity?

- School philosophy, climate matter (Hamre & Pianta, 2005)
 - Teachers important for creating climate, conveying philosophy
- What teachers say matters (Johnson, 2004)
 - Slight variations in language show impact on exploration

Role of the instructor: How does teacher language influence children's **curiosity**, **mindset**, and **learning goal orientations**?

"How many people are in the picture?"

"That's right! You're so smart!"

"Draw your own picture of your house and come back to the rug **when you're done**."



"What might he find behind the door?"

"Wow, **good thinking!** You came up with some creative ideas!" "Now draw what you think happens, and think about how you would tell the story!"

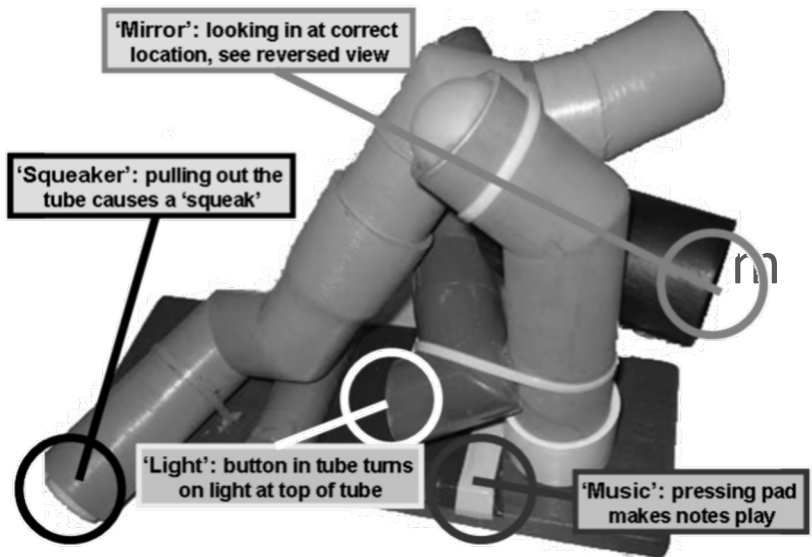


Why language matters for curiosity: An example

“I’m going to show you how this works. See that? That’s how it works.”

Vs.

“Huh, see that?
going to try to do that.”



Bonawitz, Shafto, Gweon, Goodwin, Spelke, & Schulz, 2011

Why language matters for curiosity: An example

“Here is how you find an animal.”

Vs.

“Here is how you find an animal.

There could be lots of other
to find animals.”



Kittredge & Klahr, 2014

Instructional language and curiosity

Can teachers promote curiosity by...

- Helping students be comfortable with uncertainty and practice seeking information
 1. Comfort/awareness of uncertainty
 2. Encouraging/provide practice resolving uncertainty
- Elements of this include giving students autonomy and focusing on process of learning, rather than product

Comfort and awareness of uncertainty

Awareness of uncertainty can lead to curiosity; discomfort with uncertainty leads to avoidance

Teachers can:

1. Give opportunities to think, question, participate
2. Ask students to generate questions
3. Ask students to generate alternative ideas
4. Help students recognize what they do and do not know
5. Demonstrating comfort with own uncertainty

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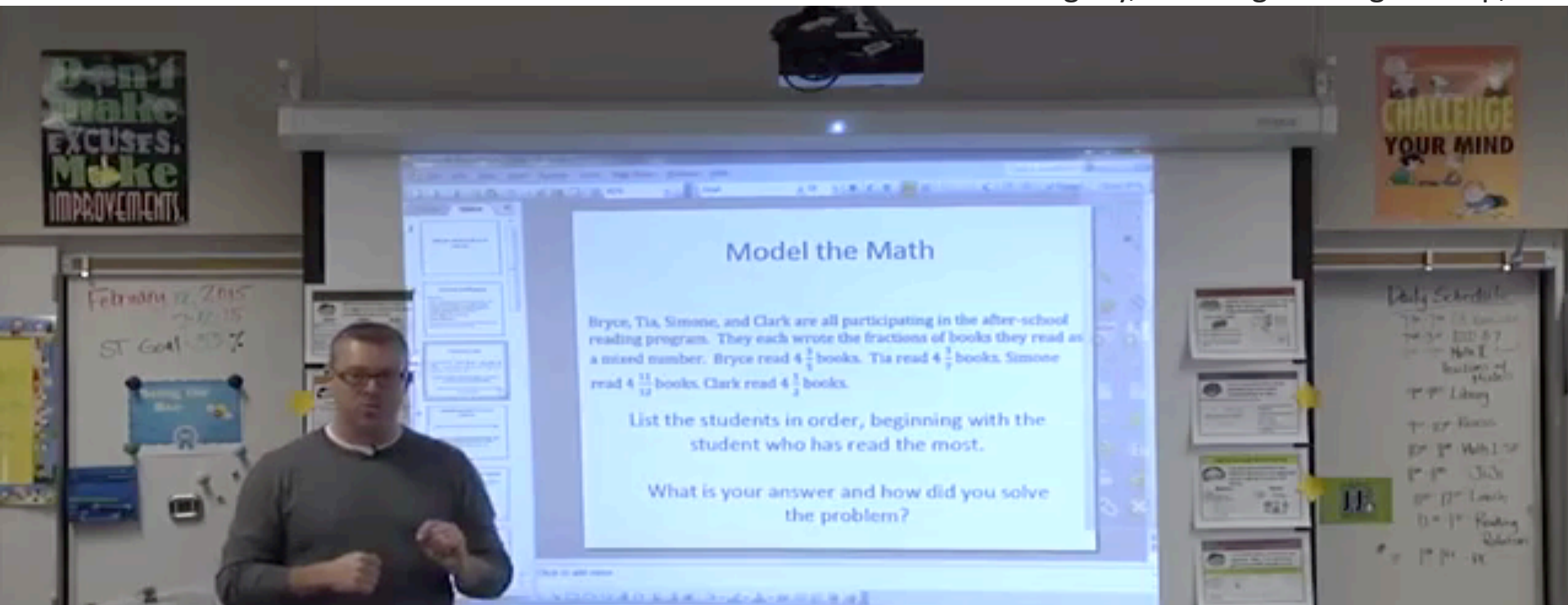
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What does this look like?

- Opportunities to think, question, participate

Video credit: J. Willoughby, Learning Leverage Group, Inc.



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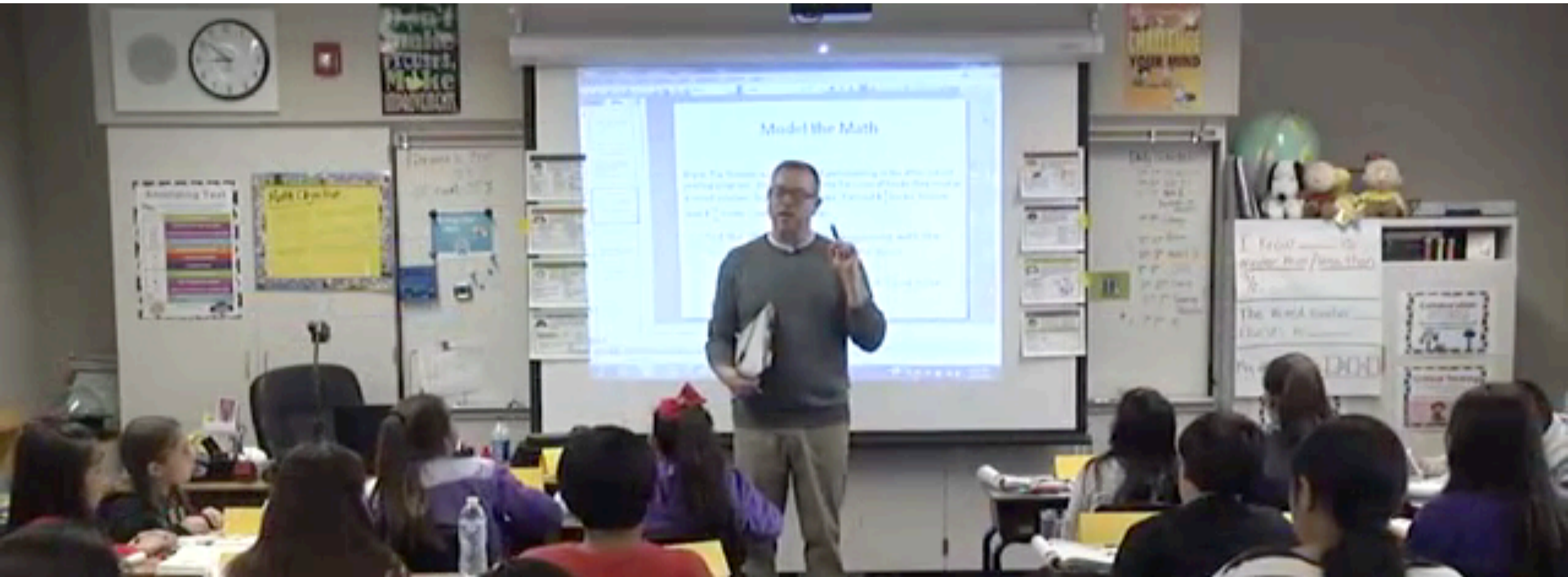
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Learning to resolve uncertainty through information seeking

Children will be more likely to practice curious behaviors if given scaffolding, opportunity, and reinforcement

Teachers can:

1. Opportunities to explore and “figure out”
2. Scaffold students’ information-seeking
3. Provide positive reinforcement to information-seeking

Learning to resolve uncertainty through information seeking

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What does this look like?

Practicing curious behaviors requires opportunity, scaffolding, and reinforcement

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Learning to resolve uncertainty through information seeking

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Brainstorming time!

What does this look like for you?

See table 1: <https://tinyurl.com/promotecuriosity>

- What language do you already use that aligns with this?
- What language do you use that could be tweaked to fit this?
- What language could you add-in to your typical instruction?

Reflect:

- Which of the framework components do you feel you do very or somewhat often? Try to give specific examples of what you do in the classroom, such as the language you use or ways you design activities.
- Which of the framework components do you feel might be challenging, for example with time restraints or classroom management or other reasons? Consider the reasons and what possibilities for change exist.

Questions?

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