Core Practices and Texas Instruments Technology

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Introductions

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Because of this webinar you should be able to…

- describe the two key aspects of core practices
- describe characteristics of active learning
- examine the power of combining active learning pedagogy and the use of technology

What are Core Practices?

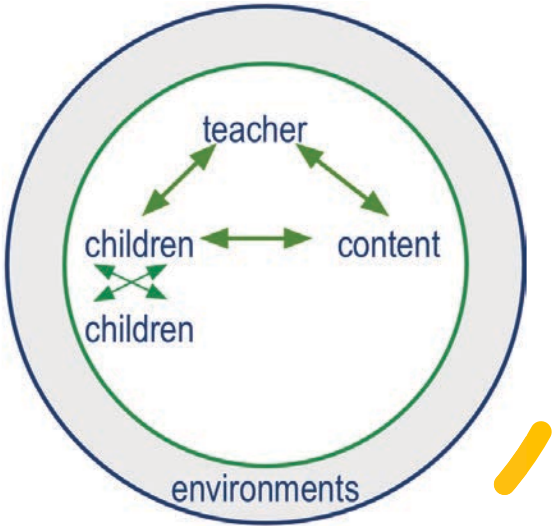
A core practice must be:

- Directly linked to deep and useable learning;

-and-

- Directly helpful in instruction aimed at helping students learn content in deep and useable ways.

TeachingWorks at the University of Michigan calls core practices “high-leverage practices (HLPs)”



WHAT DO WE MEAN BY "DIRECTLY LINKED TO DEEP AND USABLE STUDENT LEARNING"?

- "directly linked to student learning" means that there is evidence from research showing that the practice helps students learn

- "deep and useable student learning" means the development of worthwhile knowledge and skills and the ability to use what is learned for one's own purposes

WHAT DO WE MEAN BY "DIRECTLY HELPFUL IN INSTRUCTION"?

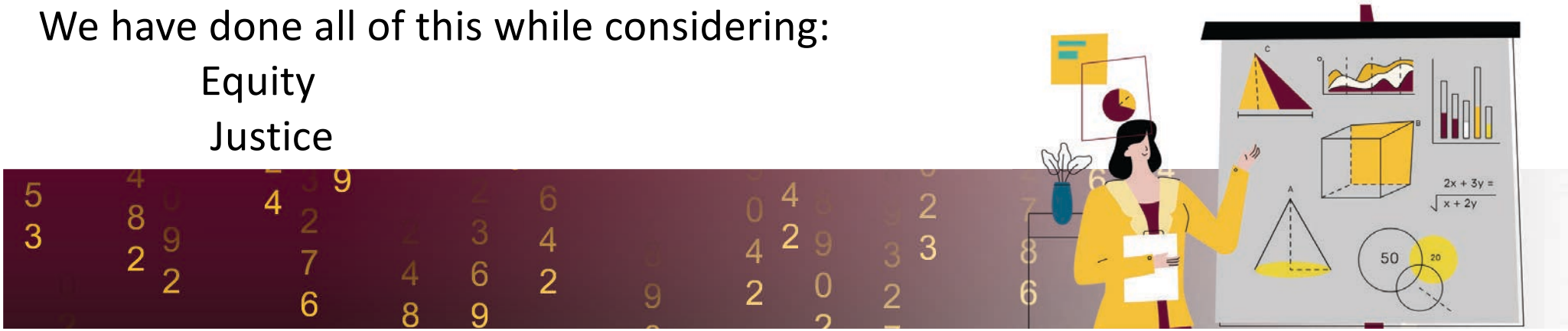
The practice is necessary to designing and implementing instruction that will help students learn content in deep and useable ways.

Examples include:

- Eliciting and interpreting individual student's thinking
- Leading a group discussion

We have done all of this while considering:

- Equity
- Justice



FOUNDATIONS FOR THE HLPS

1. The goal of classroom teaching and learning is to help students learn worthwhile content and skills and develop the ability to use what they learn for their own purposes.
2. All students deserve the opportunity to learn at high levels.
3. Learning is an active sense-making process.
4. Teaching is interactive work, co-constructed with students.
5. The contexts of classroom teaching matter, and teachers must manage and use them well.

TEACHINGWORKS HIGH-LEVERAGE PRACTICES

① Leading a group discussion

② Explaining and modeling content, practices, and strategies

③ Eliciting and interpreting individual students' thinking

④ Diagnosing particular common patterns of student thinking and development in a subject-matter domain

⑤ Implementing norms and routines for classroom discourse and work

⑥ Coordinating and adjusting instruction during a lesson

⑦ Specifying and reinforcing productive student behavior

⑧ Implementing organizational routines

⑨ Setting up and managing small group work

⑩ Building respectful relationships with students

⑪ Talking about a student with parents or other caregivers

⑫ Learning about students' cultural, religious, family, intellectual, and personal experiences and resources for use in instruction

⑬ Setting long- and short-term learning goals for students

⑭ Designing single lessons and sequences of lessons

⑮ Checking student understanding during and at the conclusion of lessons

⑯ Selecting and designing formal assessments of student learning

⑰ Interpreting the results of student work, including routine assignments, quizzes, tests, projects, and standardized assessments

⑱ Providing oral and written feedback to students

⑲ Analyzing instruction for the purpose of improving it

CHOOSING ELEMENTS OF PRACTICE MOST IMPORTANT FOR BEGINNERS

Criteria central to the practice of teaching:

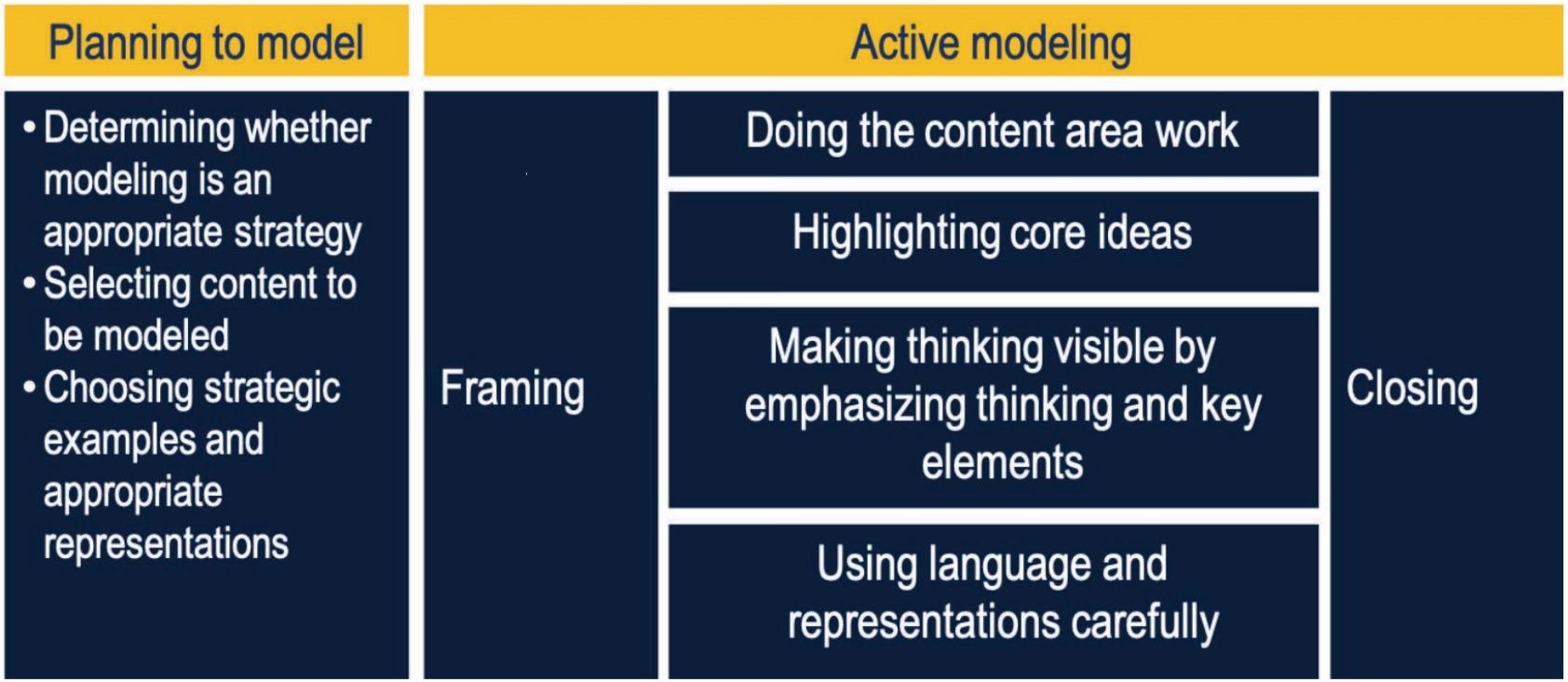
- Occurs with high frequency from a teacher's first day on the job
- Cannot be done for the beginning teacher by another school professional
- Useful across subject-areas, grade levels, curricula, and instructional approaches

Criteria central to the context and demands of teacher education:

- Can be unpacked and taught to beginners
- Is generative of additional learning and skill development
- Can be assessed

Explaning and modeling content, practices and strategies

Visual representation of explaining and modeling content, practices, and strategies



From TeachingWorks. This and more information at http://teachingworks.org

Eliciting & Interpreting Student Thinking

Formulating and posing questions designed to elicit and probe student thinking, with sensitivity to how students might hear or respond to the questions	Listening to and interpreting student responses	Developing additional questions, prompts, and tasks to probe and unpack what students say
•Developing general, open-ended questions •Using native language to pose questions or using translation support (if possible). •Slowing the pace of questioning and use repetition or leveled prompts to allow students time to process language and develop a response. •Using gestures, visuals, or leveled sentence stems as needed to support questioning and student response. •Choosing areas of the student's expressed thinking or work to focus on and developing appropriate questions. •Developing hypotheses to test about the student's thinking.	•Giving the student plenty of time to speak. •Allowing supportive "thinking time" for •students to interact with a peer, draw, or write so they can practice language and develop a response. •Paying close attention to what the student says, without unnecessary interruptions •Listening for ideas rather than academic language. •Noticing specific features of the student's thinking: common patterns, strengths, strategies, novel ideas, areas of particular interest or engagement, weaknesses, and errors. •Using knowledge of the student to make sense of responses	•Identifying elements of the student's thinking that he or she has said little about, and probing further •Identifying particularly interesting or confusing (to the teacher) aspects of the student's thinking and developing corresponding questions or prompts •Focusing on a particularly strategic aspect of the student's thinking to probe further (i.e., a good starting point for the student, something he or she needs to work on or develop more) •Developing additional questions that are attuned to the student's English language learning
•Posing questions that are culturally relevant and draw on the particular experiences and background knowledge of the learner. •Allowing students to communicate in their preferred mode (e.g. drawing, writing, speaking, etc.)	•Purposefully connecting the particular background knowledge or experiences of students to content. •Listening for specific evidence of English language development	•Encouraging emergent bilinguals who take risks to express themselves in English and do "double the work" as they engage in content discussion. •Questioning and probing emergent bilinguals with the same high expectations for all students, knowing that more planning and support may be needed.

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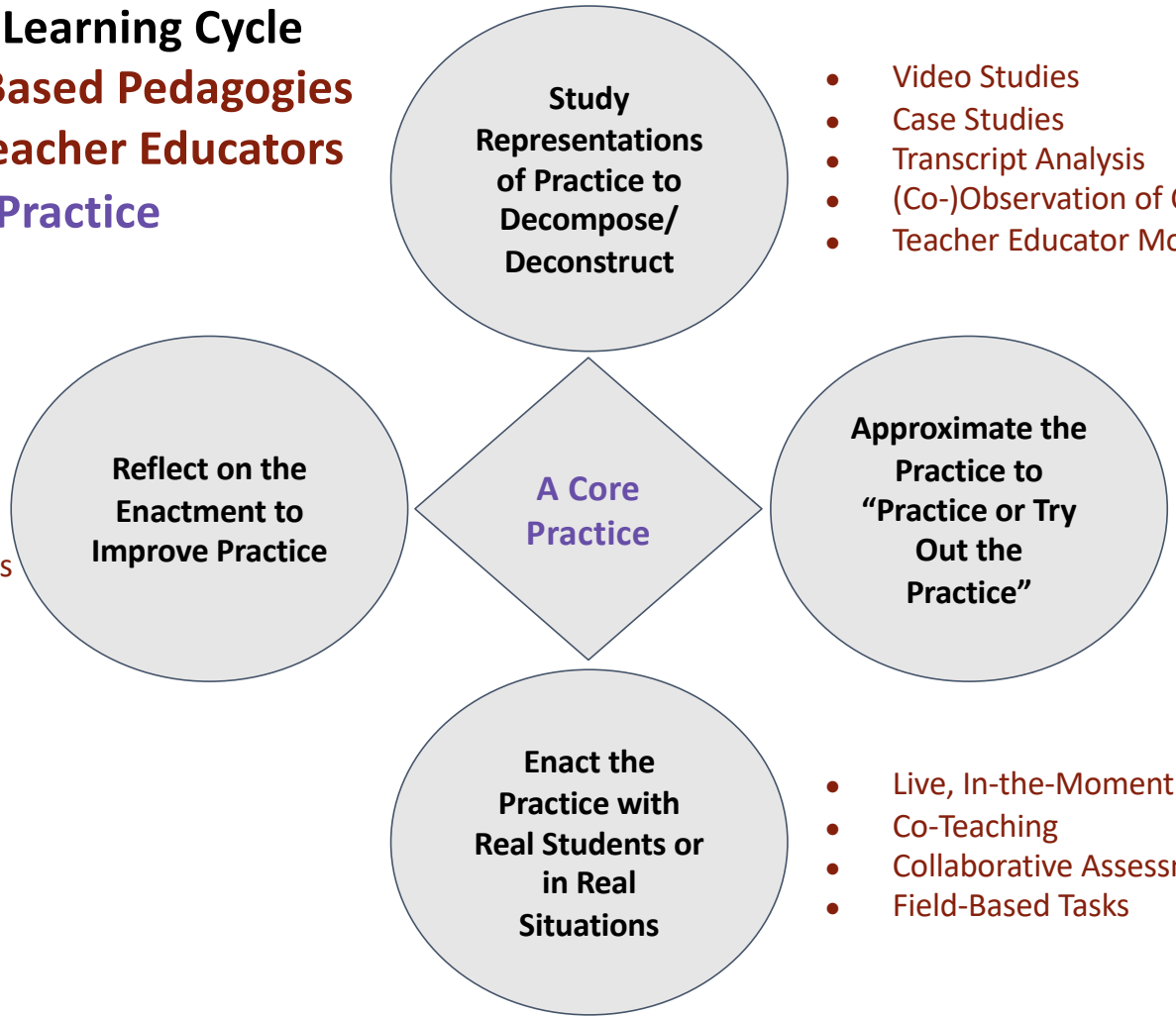
Practice-Based Learning Cycle
With Practice-Based Pedagogies Employed by Teacher Educators
Around a Core Practice



- Video Studies
- Case Studies
- Transcript Analysis
- (Co-)Observation of Cooperating Teacher
- Teacher Educator Modeling

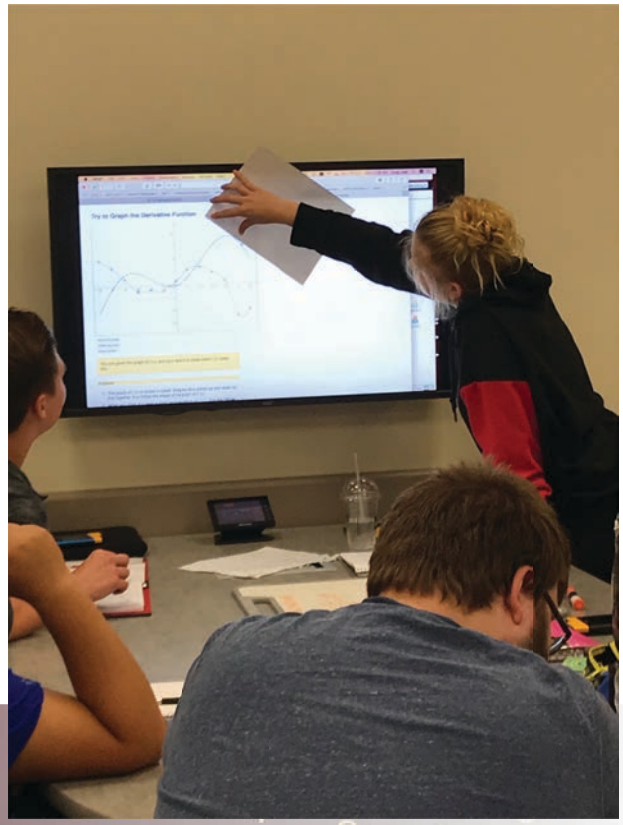
- Role Plays
- Simulations
- Assessing Student Work
- Rehearsals
- Microteaching
- Run-throughs

- Live, In-the-Moment Coaching
- Co-Teaching
- Collaborative Assessment/Data Collection
- Field-Based Tasks

- Field-based Tasks
- Observation Debrief
- Video Analysis
- Transcript Analysis
- Student Work Analysis
- Research to Improve

What is Active Learning?

- In general, active learning describes pedagogy that engages the students as active participants in the learning of content ***during class time***.
  - Students *work collaboratively* during class as well as outside of class.
  - Teacher is available during class to act as orchestrator of discussion.
  - Can take the form of short activities or longer labs or project-based investigations.
  - Students participate in decision making and groups may take different paths toward problem-solving.



Active Learning, Why Do We Care?

- Meta analysis of Active Learning in STEM fields (Freeman, et al., 2014)
  - Examined 225 research studies on active learning pedagogies.
  - On average, student performance increased by just under half a SD with active learning compared with lecturing.
  - On average, students in traditional lecture courses are 1.5 times more likely to fail than students in courses with active learning.

    Average failure rates were 21.8% under active learning but 33.8% under traditional lecturing—a difference that represents a 55% increase.

Active Learning?: Ain't Nobody Got Time For That.

One of the biggest concerns for implementing active learning is the perceived lack of time.

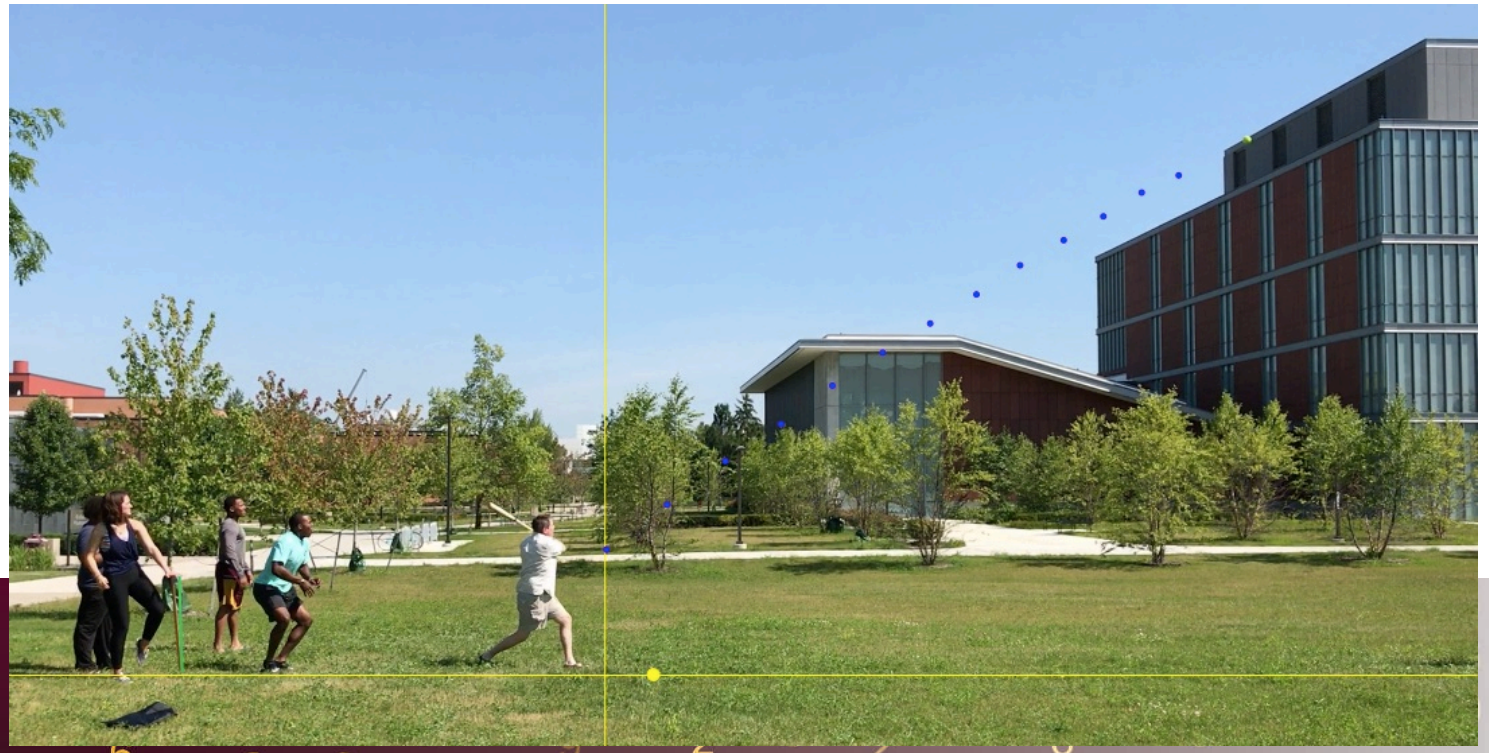
- Class time is reserved for discussion and debate as opposed to teacher-centered instruction.
- Teacher serves to facilitate discourse allowing student ideas to take drive the class.
- Teacher acts to summarize class observations and arguments.
  - This can take place both inside and outside of class. Video summaries reduce the need for the teacher to give formal definitions and proofs in front of the class, but rather these can be done outside of class extending the learning space beyond the physical walls where students can replay the video as opposed to watching the teacher once in class hoping to get it all written down.

How is an Active Learning Environment Related to Core Practices of Instruction?

- Leading a group discussion
- Eliciting and interpreting individual students' thinking
- Implementing norms and routines for classroom discourse and work
- Coordinating and adjusting instruction during a lesson
- Specifying and reinforcing productive student behavior
- Implementing organizational routines
- Setting up and managing small group work
- Building respectful relationships with students
- Checking student understanding during and at the conclusion of lessons
- Selecting and designing formal assessments of student learning
- Providing oral and written feedback to students

An example of Active Learning

Homerun Derby



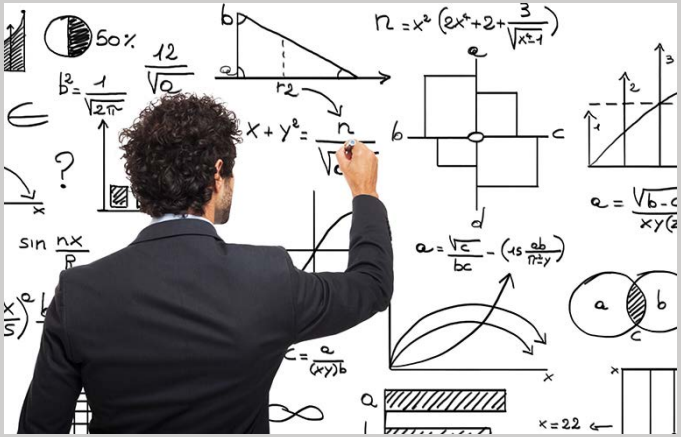
Commentary about the Core Practices Used in an Active Learning Environment

Explaining and modeling content, practices, and strategies

What are Demonstrations, Explanations, and Modeling?

- Demonstrations – showing how to do something with little commentary
- Explanations – showing while adding more commentary and advice
- Modeling – an explanation with verbally expressed thoughts about what is being done and why you have chosen to do it that way

Time for Questions



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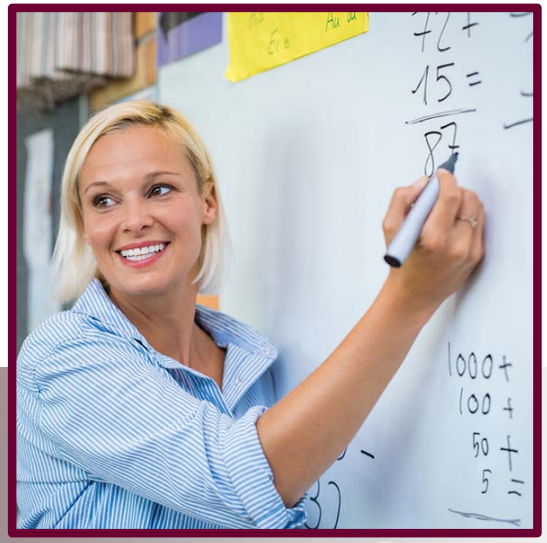
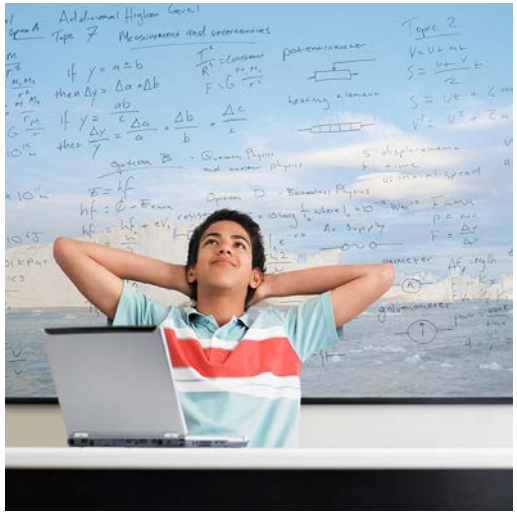
Thanks for coming. Enjoy your school year!