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PD Support Materials

Understanding Problems

Directions for Using the Overview Slideshow

Each Instructional Strategy Guide contains an overview slideshow that sets the context for the evidence-based practices that are presented in Teach with Tech and illustrated in the Lesson in Action. It also identifies ways to differentiate instruction based on the Universal Design for Learning (UDL) principles. Discussion questions are embedded in each slideshow.

PD Goals

- To set a context for delving into Teach with Tech and the Lesson in Action
- To elicit prior knowledge and build background knowledge

PD Materials

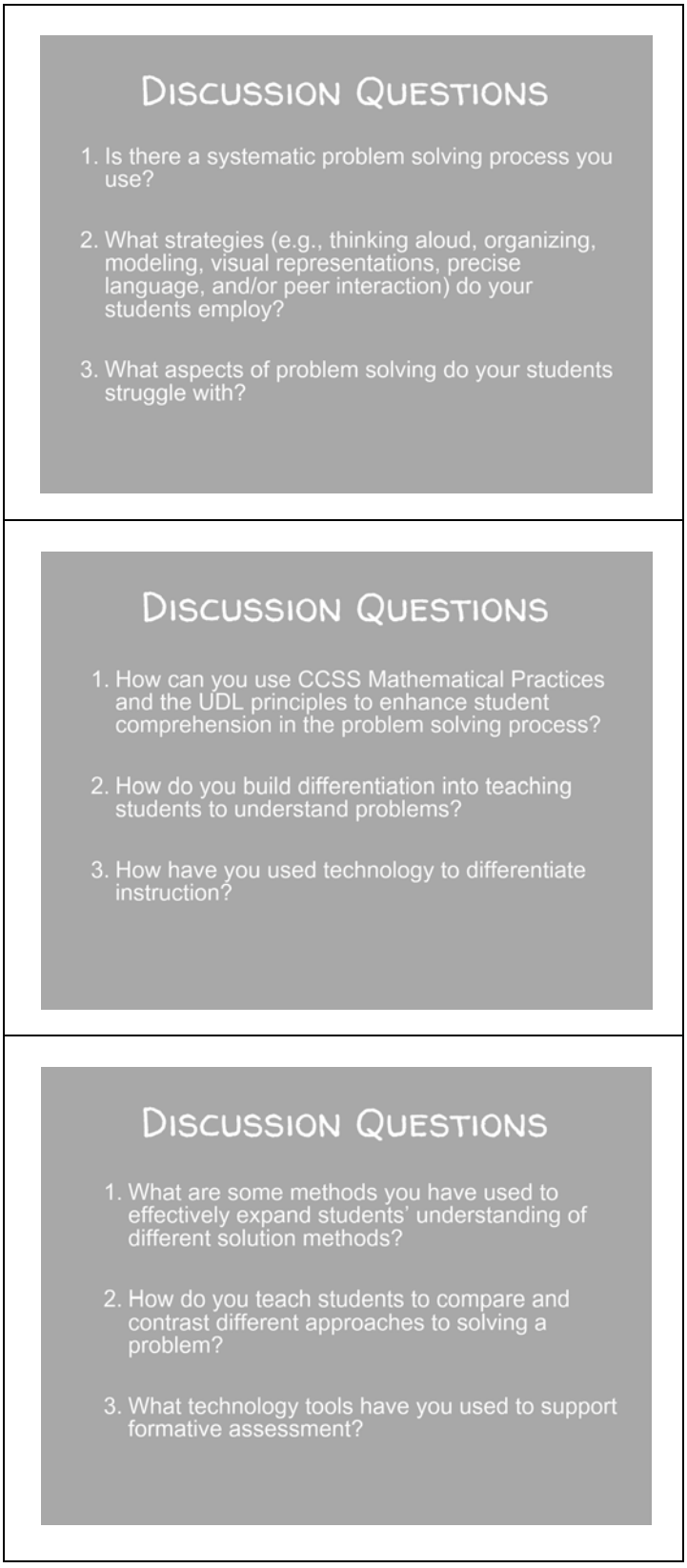
- The slideshow within the Instructional Strategy Guide
- Discussion questions (embedded within the slideshow and provided as a handout below)

PD Activity

- Ask teachers to review the slideshow (either before or during the session)
- Elicit conversation using discussion questions
- As a follow up, share key ideas

See the PD Facilitator Guide for related activities to support ongoing professional learning.

Discussion Questions for the Understanding Problems in Math Slideshow



Directions for Using Teach With Tech

Each Instructional Strategy Guide contains a Teach with Tech section, which presents suggestions for differentiating evidence-based practices and personalizing instruction using a range of technology tools.

PD Goals

- To examine and discuss evidence-based practices in terms of:
  - What they are and how they can be used to differentiate instruction
  - How technology tools can meet the needs of struggling students
- To generate additional instructional strategies based on the needs of your students and the technology tools that are available in your school

PD Materials

- Teach with Tech (which is located within the Instructional Strategy Guide). This can be:
  - Distributed as a handout
  - Projected onto a large screen
  - Viewed on laptops, tablets, and other devices
- A companion chart (below), titled ***Differentiate the Strategy***. The chart is divided into three columns:
  - The left-hand column, "Evidence-Based Practices," is divided into three sections, one for each of the three headings of evidence-based practices.
  - The middle column, "PowerUp Suggested Strategies," lists the strategies presented within PowerUp.
  - The right-hand column, "Differentiating Instruction with Technology," is blank so that it can be used to record ideas brainstormed by the group of teachers in your school.

PD Activity

- Review Teach with Tech (contained within the Instructional Strategy Guide)
  - Review the strategies under the three evidence-based practice headings
    - Discuss how relevant they are to your students' needs
    - Compare them with current classroom practices
    - Identify new ideas that could be implemented
  - Discuss the accompanying Quick Views
  - Explore and discuss the identified UDL Guidelines
- Introduce the companion chart titled ***Differentiate the Strategy***
  - Collaboratively (in small groups or pairs) brainstorm ideas to include in the right hand column ("Differentiating Instruction with Technology") by:
    - Exploring possible technology tools available in the school
    - Sharing ideas
  - Identify what it would take to implement these ideas in the classroom

See the PD Facilitator Guide for related activities to support ongoing professional learning.

Differentiate the Strategy: Understanding Problems in Math

Evidence-based Practice	PowerUp Suggested Strategies	Differentiating Instruction with Technology
Provide Clear Explanations	When students face new or relatively complex tasks, it is critical that teachers pause and provide clear explanations of what is expected and of the mathematics being learned. When providing guidance, use short declarative sentences, scaffold the questioning, and give students sufficient time to understand and react.	
	A common and effective strategy to reinforce directions and explanations is to ask students to present the directions or explanations in their own words. Prompt students by asking, "Can you repeat the directions that I just gave to the class?" or "Can you put the explanation that I just gave in your own words and repeat it for the class?"	
	Ask students to compare and contrast different approaches and then summarize what you hear. Students should understand what works and what doesn't work (and why), which methods are more efficient, and how models are different. It is critical that teachers elicit, value, and celebrate approaches that are different but still arrive at the correct solution.	
Give Students Strategies and Models	Use a process chart to guide students when presenting them with new problems. Teachers should focus on how each step in the process supports better access to the problem. For example, reading the problem a second time with annotations helps students sort out the core information from the background noise. Visualizing a story can be a powerful strategy that helps students create a picture or diagram of the problem. Estimating or approximating an answer helps students decide if they're on the right track.	
	Create a gallery walk of student solutions to help them evaluate and expand their repertoire of appropriate models. Gallery walks allow for public discussion and easy comparisons of solutions to the same problem. Technology tools, such as Thinking Blocks, can also expand their repertoire with virtual models.	
	Encourage students to embrace mistakes and errors, correct them as necessary, and move on with confidence. Note that it is rare to complete a problem from start to finish without a mistake or misstep.	
Provide Ongoing Formative Assessment	Check in with students to ask, "Can you explain to me what you are doing here?" (pointing to a student's work) to reveal whether or not students are on the right track and if additional guidance is needed.	
	When students face new or relatively complex tasks, it is critical that teachers pause and provide clear explanations of what is expected and of the mathematics being learned. When providing guidance, use short declarative sentences, scaffold the questioning, and give students sufficient time to understand and react.	
	A common and effective strategy to reinforce directions and explanations is to ask students to present the directions or explanations in their own words. Prompt students by asking, "Can you repeat the directions that I just gave to the class?" or "Can you put the explanation that I just gave in your own words and repeat it for the class?"	

Directions for Using the Lesson in Action

Every Instructional Strategy Guide includes one or more Lessons in Action. Each lesson provides a classroom example of the relevant evidence-based practice. The example illustrates how a teacher aligns instruction with the Common Core State Standards, differentiates instruction to meet the needs of her diverse students, uses technology to personalize learning, and engages in formative assessment.

PD Goals

- To analyze the Lesson in Action and reflect on current teaching practice
- To provide teachers with a foundation for their own lesson planning

PD Materials

- The Lesson in Action you selected from the Instructional Strategy Guide, which can be:
  - Distributed as a handout
  - Projected onto a large screen
  - Viewed on laptops, tablets, and other devices
- The companion handout (titled ***Scavenger Hunt***), which can also be distributed as a handout, projected onto a large screen, or viewed on devices

PD Activity

- Analyze and discuss the Lesson in Action
- Use the ***Scavenger Hunt*** handout to discuss how the teacher is:
  - Aligning the lesson with the Common Core State Standards
  - Employing the strategies suggested in Teach with Tech
  - Using technology to support struggling students
  - Personalizing instruction through differentiation
  - Translating UDL principles into action
- Compare the Lesson in Action with current practice in your school and classrooms
- Identify the new ideas the Lesson in Action offers for using:
  - Evidence-based practices
  - Differentiated instruction and UDL
  - Technology tools
- Use the Lesson at a Glance for lesson planning:
  - Discuss the sequence of the instructional steps: What? Why? How?
  - Discuss how the instructional steps can be used as a basis for lesson planning
  - Create a modified lesson plan to meet student needs by working individually or in collaboration

See the PD Facilitator Guide for related activities to support ongoing professional learning.

Scavenger Hunt

Within the Lesson in Action, can you find an example of how the teacher...

1. Aligns instruction to meet the Common Core State Standards?

2. Uses one of the Teach with Tech suggested practices?

3. Uses technology to support struggling students?

4. Personalizes instruction through differentiation?

5. Translates UDL principles into action?

If you can't find an example, what would you have done?