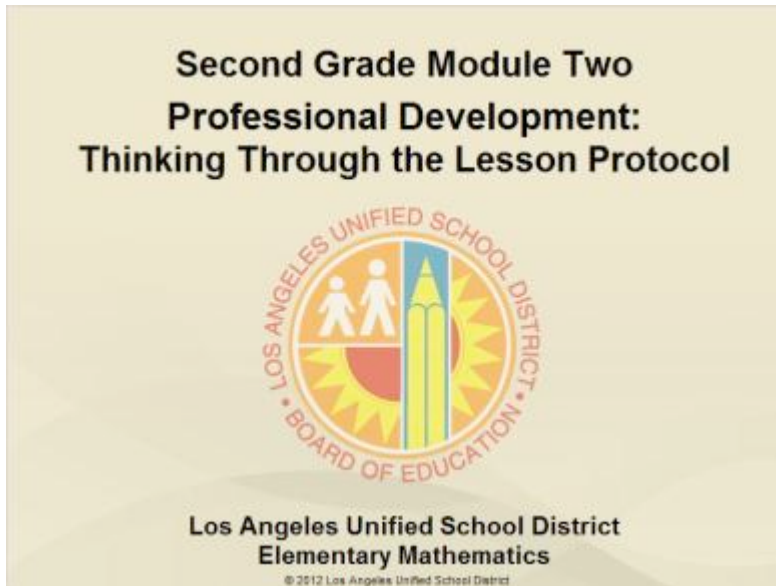


Second Grade Module Two: Thinking Through the Lesson Protocol

1. TTLP

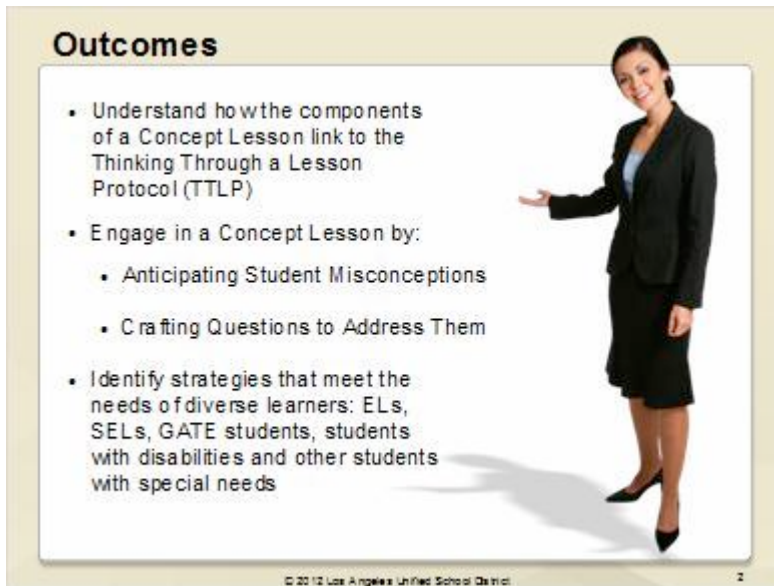
1.1 Introduction



Notes:

Welcome back to our Second Grade Math Training on the Thinking Through the Lesson Protocol. This is part 2 of the three-part series.

1.2 Outcomes



Outcomes

- Understand how the components of a Concept Lesson link to the Thinking Through a Lesson Protocol (TTLP)
- Engage in a Concept Lesson by:
 - Anticipating Student Misconceptions
 - Crafting Questions to Address Them
- Identify strategies that meet the needs of diverse learners: ELs, SELs, GATE students, students with disabilities and other students with special needs

© 2012 Los Angeles Unified School District 2

Notes:

In our previous module, we looked at the Set-Up Phase of the Thinking Through the Lesson Protocol, and solved the Concept Lesson different ways. In this module, we'll work with the "Explore" phase of the TTLP, as we continue through the Concept Lesson. Today, we'll examine student misconceptions and the role of questioning in building students' mathematical knowledge. And we'll write questions to specifically address the diverse needs of our students.

1.3 Objectives



Objectives

Ties to Teaching and Learning Framework:

Standard 3: Delivery of Instruction

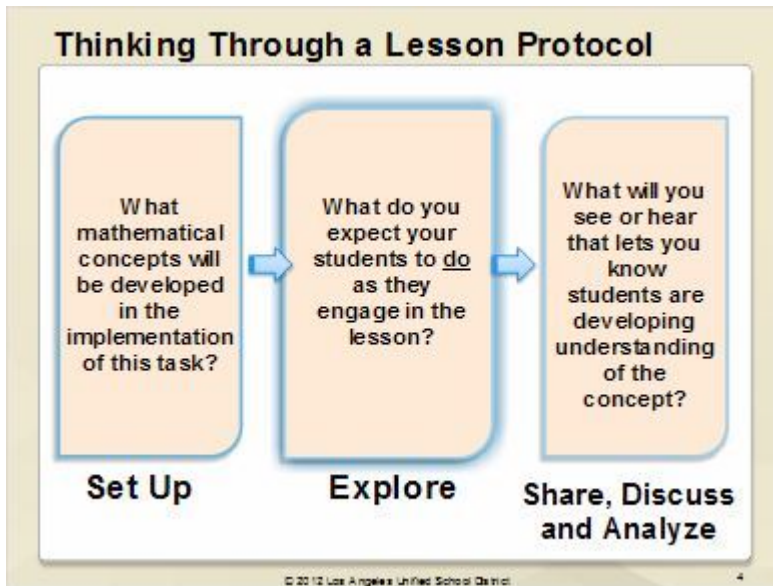
- Subset B: Using Questioning and Discussion Techniques
 - Quality and Purpose of Questions
 - Discussion Techniques and Student Participation

© 2012 Los Angeles Unified School District 2

Notes:

Our objective today is to tie the TTLP to the Teaching and Learning Framework, Standard 3: Delivery of Instruction, sub-set B: Using Questioning and Discussion Techniques. We'll look at the quality and purpose of questions to guide instruction, and focus on the discussion techniques that lead to student participation.

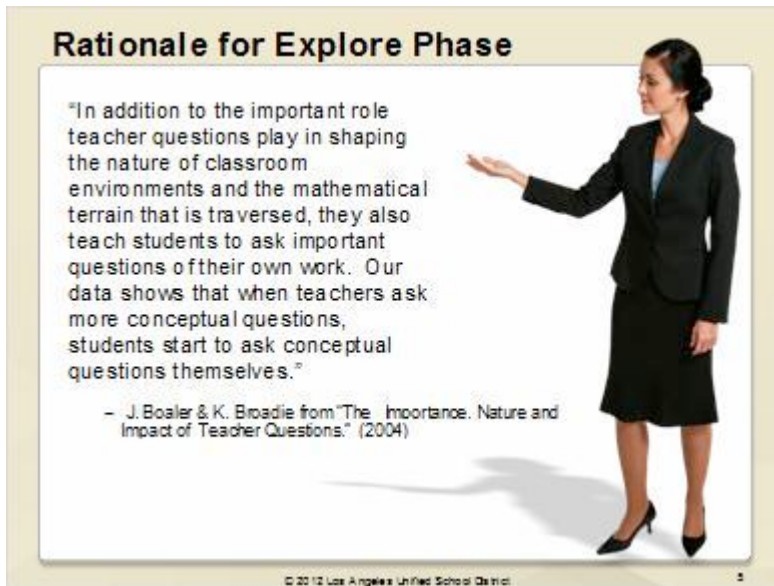
1.4 Thinking Through a Lesson Protocol



Notes:

In the Explore phase, we'll be looking at the engagement of students as they work to solve the task, and the role of the teacher in leading the students, not through giving them answers, but in asking them questions. What will we ask to help them create their own moment of discovery? How can we orchestrate the learning so that all students are participating to the best of their abilities?

1.5 Rationale for Explore Phase



Rationale for Explore Phase

"In addition to the important role teacher questions play in shaping the nature of classroom environments and the mathematical terrain that is traversed, they also teach students to ask important questions of their own work. Our data shows that when teachers ask more conceptual questions, students start to ask conceptual questions themselves."

— J. Boaler & K. Brodie from "The Importance, Nature and Impact of Teacher Questions." (2004)

© 2012 Los Angeles Unified School District


Notes:

Here's what the experts say, "In addition to the important role teacher questions play in shaping the nature of classroom environments and the mathematical terrain that is traversed, they also teach students to ask important questions of their own work. Our data shows that when teachers ask more conceptual questions, students start to ask conceptual questions themselves." The Explore phase shows the Common Core Math Practice 3 in action, with students constructing viable arguments and critiquing the reasoning of others.

1.6 Second Grade CA Math Standard

Second Grade CA Math Standard

NS 2.0: Students estimate, calculate, and solve problems involving addition and subtraction of two and three-digit numbers.

A photograph of a male teacher with glasses, wearing a dark suit jacket over a light blue striped shirt. He is standing in front of a green chalkboard. In the background, a student is visible from behind, writing on the chalkboard. The chalkboard contains several math problems involving addition and subtraction of two and three-digit numbers.

© 2012 Los Angeles Unified School District


Notes:

Before we dive back into the Concept Lesson, please review the California standard that guides today's work.

1.7 Second Grade CCSS Math Standard

Second Grade CCSS Math Standard

2.OA.A.1: Use addition and subtraction within 100 to solve one and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.

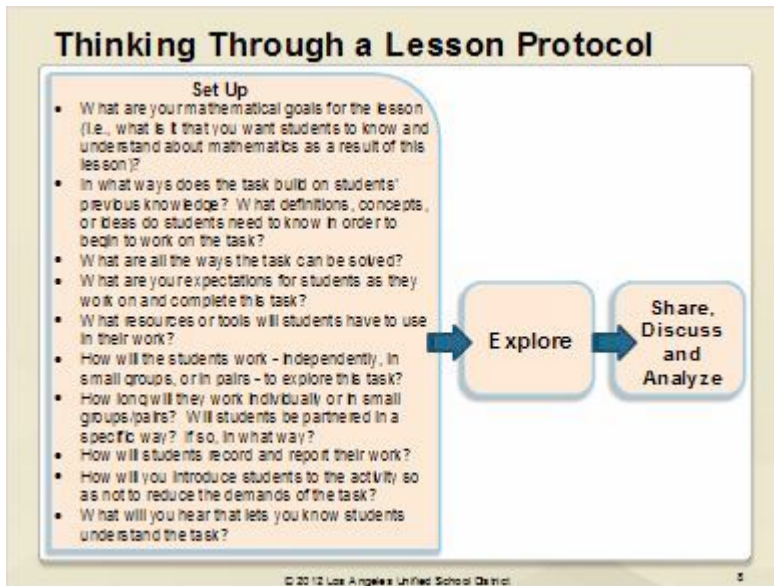


© 2012 Los Angeles Unified School District

Notes:

...and the Common Core Standard that the Concept Lesson addresses. Second Grade Operations and Algebraic Thinking-point-one: Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.

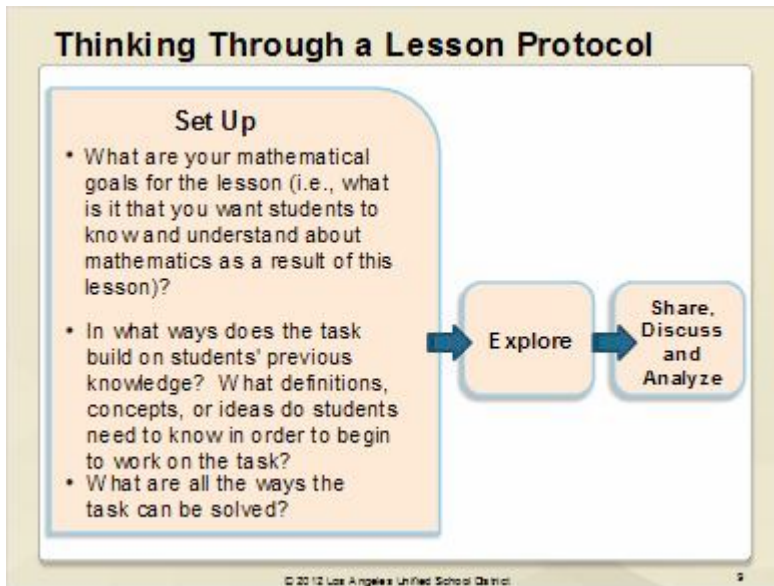
1.8 Thinking Through a Lesson Protocol



Notes:

You'll recall that in Module 1, we began with the Set-Up phase.

1.9 Thinking Through a Lesson Protocol

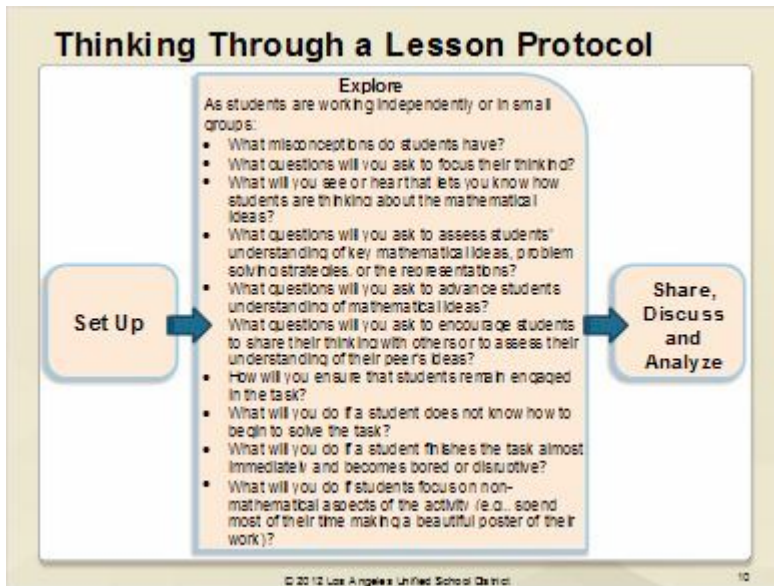


Notes:

We solved the Concept Lesson in multiple ways and began to look at student misconceptions. We specifically addressed the groupings and needs of our English Language Learners, students with disabilities and GATE students. Turn to a partner and briefly discuss what you remember about the Set-Up phase. Click the "Next" button when you're ready to continue.

(2 minutes)

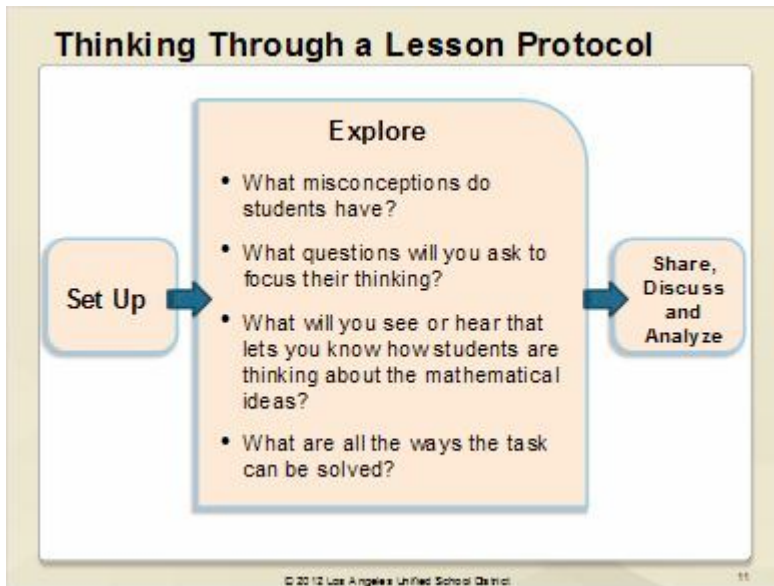
1.10 Thinking Through a Lesson Protocol



Notes:

Today, we focus on what the students do during the lesson...

1.11 Thinking Through a Lesson Protocol



Notes:


...and the role of questioning in moving the students toward greater mathematical understanding. Please use handout #2 to read the Explore phase of the TTLP. Click the "Next" button when you're ready to continue.

(2 minutes)

1.12 Concept Lesson

Concept Lesson

- Take the next few minutes to read the Explore phase of the Concept Lesson, and re-read the problem to refresh your memory
- List the teacher responsibilities during the Explore phase



© 2012 Los Angeles Unified School District 12

Notes:

Please take a moment to read the Explore phase of the concept lesson, and refresh your memory by re-reading the problem. Think about the role of the teacher during the Explore phase, and jot down some notes. Briefly discuss the teacher responsibilities with your group. Click on the "Next" button to move on.


(5 minutes)

1.13 Anticipating Solutions

Anticipating Solutions

With your group:

- Take out your solutions from the prior module and review possible student misconceptions and errors
- How does anticipating misconceptions help you guide the lesson?



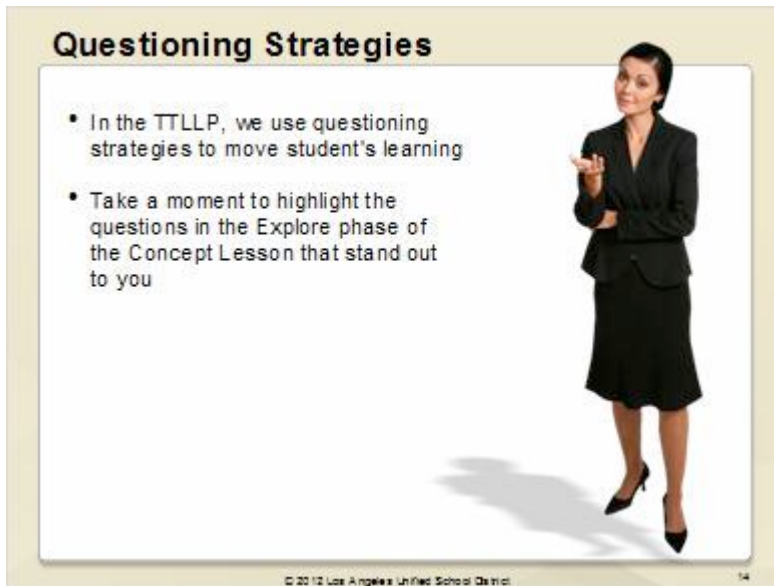
© 2012 Los Angeles Unified School District 12

Notes:

Please take out your work from the last module, and review the notes of possible student misconceptions that you listed. Discuss the variety of misconceptions, and how anticipating the misconceptions can help you guide the lesson. You can use handout #3 to record additional misconceptions. Click the "Next" button when you're ready to continue.

(5 minutes)

1.14 Reflect on Video



Questioning Strategies

- In the TTLP, we use questioning strategies to move student's learning
- Take a moment to highlight the questions in the Explore phase of the Concept Lesson that stand out to you

© 2012 Los Angeles Unified School District 14

Notes:


In the TTLP we use questions to move the student's learning, we don't tell them what to do. Please use a highlighter to mark the questions in the Explore phase of the Concept Lesson that stand out to you. When you're ready to move on, click the "Next" button.

(2 minutes)

1.15 Explore: Categorizing Questions

Explore: Categorizing Questions

- Decide, with a partner, whether your highlighted questions
 - Focus student thinking
 - Assess student thinking or
 - Advance student thinking
- Identify and mark at least one question in each category
- Use the sample questions to help you



© 2012 Los Angeles Unified School District 15

Notes:


The TTLP categorizes questions into three types: Focusing, Assessing or Advancing. Focusing questions get the students to look at what the problem is asking, it's a way to clarify words that they don't know, or situations of which they are unfamiliar. Assessing questions are a way for us to know what the students' mathematical thinking is. How does that answer make sense in light of the problem? How do you explain your thinking? And Advancing questions take all students farther down the road. They are not just for the advanced student, as any student can have their thinking extended by asking: What pattern do you see in your answers? Or how can you apply your thinking to another situation? Talk with an elbow partner and discuss the types of questions that you've highlighted. Are they Focusing student thinking? Assessing student thinking? Or Advancing student thinking? Please identify and mark at least one question in each category. You can write the type of question right on your concept lesson, or use handout #4 to copy the question. Handout #5 provides sample questions to assist you. Click the "Next" button when you're ready to continue.

(5 minutes)

1.16 Explore: Creating Questions For Diverse Learners

Explore: Creating Questions for Diverse Learners

- Design at least two more questions, that will:
 - Focus student thinking
 - Assess student thinking
 - Advance student thinking
- Remember to create questions that are open-ended
- Design questions that are aligned to the mathematical concepts
- Consider the misconceptions that were identified



© 2012 Los Angeles Unified School District 18

Notes:

The Teaching and Learning Framework calls for careful use of questioning. Now is the time to work with your group to create additional questions for diverse learners for this concept lesson. Using handout #6, please craft at least two more questions for each of the three question types: Focusing, Assessing and Advancing. Remember to avoid questions that can be answered with Yes or No. Keep the questions aligned with the lesson, and try to consider the errors and misconceptions that you listed earlier. Click the "Next" button to continue.

(10 minutes)

1.17 A Visit to a Classroom (video)




Notes:

What does this type of questioning sound like in a classroom? In the following video clip, notice how the teacher uses questions to keep the learning moving forward. After the video, click the "Next" button to continue.

1.18 Reflect on Video

Reflection

- Take a minute to discuss your reflections on the video with a partner
- In what ways does the TTLP support the needs of diverse learners?
- Record your thoughts



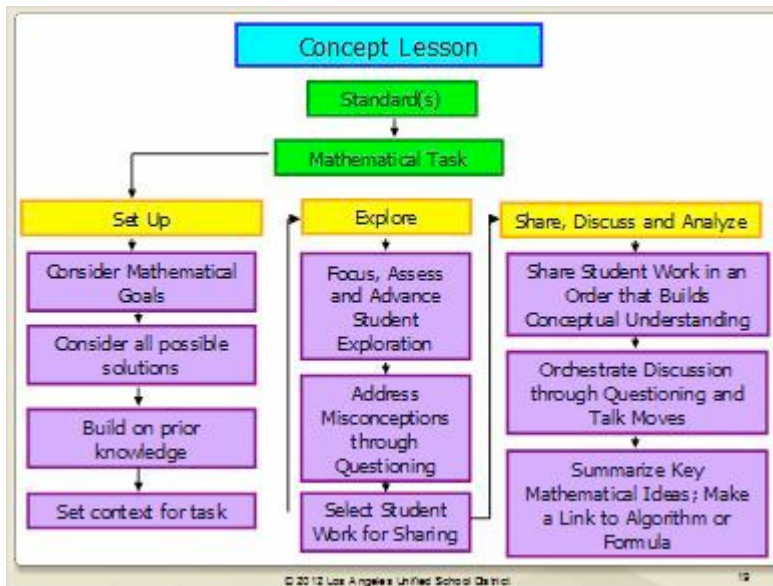
© 2012 Los Angeles Unified School District 18

Notes:

Reflect on the video with a partner for a minute. In what ways does the TTLP support the needs of diverse learners? Think specifically about the students in your class who are English Language Learners, Standard English Language Learners, Gifted and Talented students, students with disabilities, and other students with special needs. Afterwards, record your thoughts on handout #7, so that you can refer to them later. Click on the "Next" button to continue.

(3 minutes)

1.19 Concept Lesson



Notes:

Thank you for your participation in the Set-Up and Explore phases of the TTLP. In Module 3, we'll look at student work and move into the Share, Discuss and Analyze phase. Please hold on to your work, so that we can continue to use it as we move into the final phase of Thinking Through the Lesson Protocol.

1.20 Conclusion

Conclusion

Thank you for participating in this module on the Second Grade Math Training on the Thinking Through the Lesson Protocol.



[Special Thanks](#)

© 2012 Los Angeles Unified School District

(click on the Special Thanks button)

1.21 Thank you

Thank you!

Thanks to all the teachers who contributed to the field-testing of the second grade concept lesson:

Judy Arriaga	LaBarbara Madison
Sonia Baron	Jill Manning
Charles Cho	Vicky McNeely
Tracy Curd	Martha Mota
Jose Dorado	Dan Murphy
Mark Duncan	Dionne Patterson
Jared Dupree	Rafael Quintanilla
Irene Eason	Lisa Rosenstein
Barbara Goodwin	Sheila Suarez
Sunhee Hampton	Carina Tsuneta
Esther Herrera	Lisa Ward
Nicole Jacobson	Charity Weber
Daniel Kim	Dina Williams
Elaine LeDuff	



© 2012 Los Angeles Unified School District

(50 minutes)