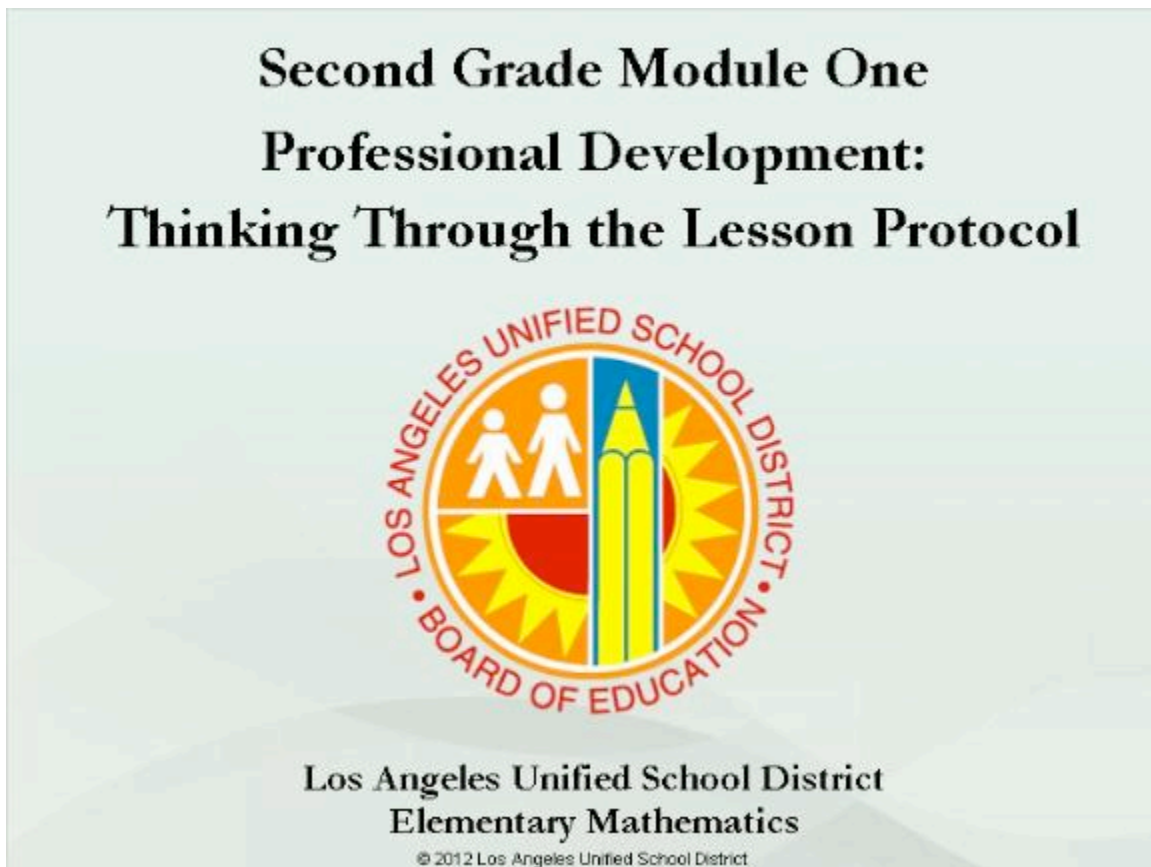


Second Grade Module One:

Thinking Through the Lesson Protocol

1. TTLP

1.1 Introduction



Notes:

Welcome to our Second Grade Math Training. Over the next three modules, we'll be exploring how to engage our students in deeper conversations about math. Today we're going to share factors we consider when lesson planning in mathematics, and compare those to a lesson planning tool called the Thinking Through a Lesson Protocol or TTLP.

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:
 - Generating Possible Solutions
 - Anticipating Student Misconceptions
- Identify strategies that meet the needs of diverse learners: ELs, SELs, GATE students, students with disabilities and other students with special needs



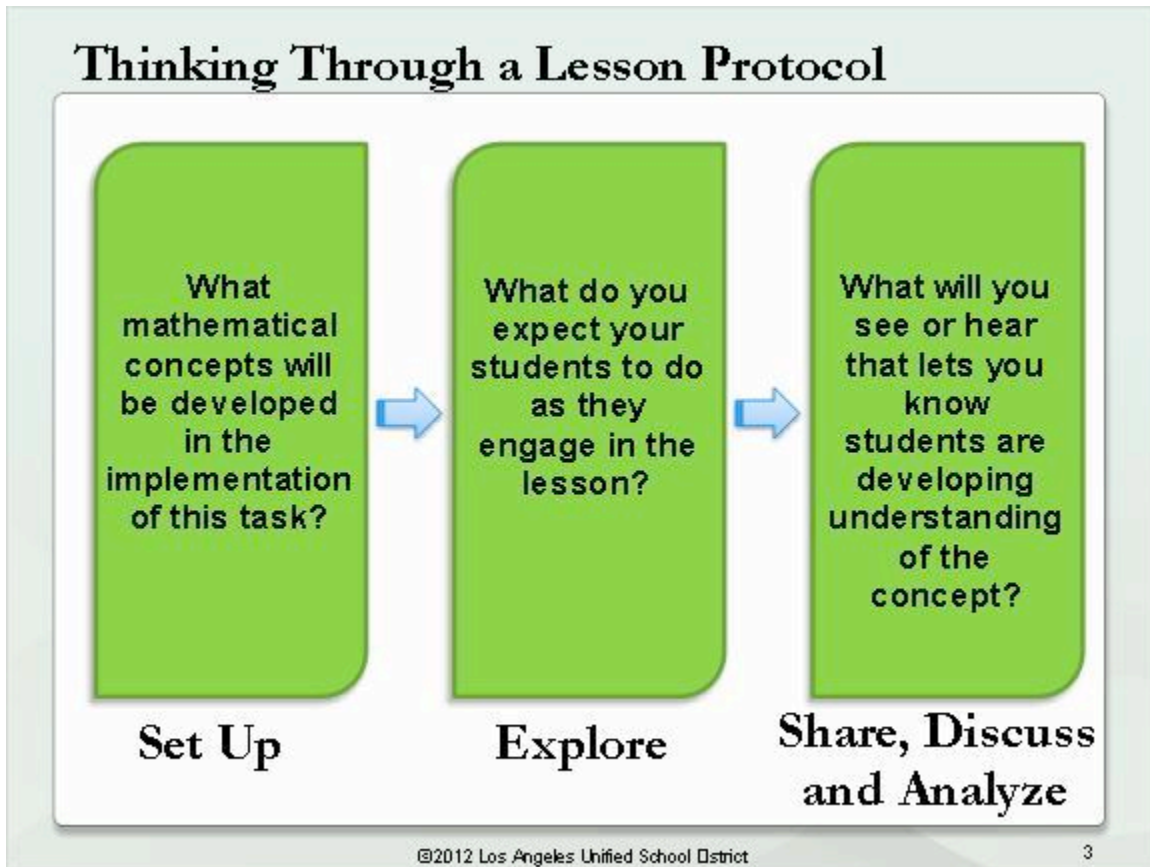
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Notes:

Over the last several years, teachers in the upper grades have been using this lesson planning tool to teach Concept Lessons. You've probably used a Seven Step Lesson Plan, or a similar format. For the next hour we're going to learn about the Thinking Through a Lesson Protocol, understand how the TTLP frames the structure of the Concept Lesson, and identify strategies that meet the needs of our diverse learners.

1.3 Thinking Through a Lesson Protocol




Notes:

The Thinking Through the Lesson Protocol is broken into three steps: Set Up, Explore and Share, Discuss and Analyze.

1.4 TTLP

TTLP

- Read through the Thinking Through the Lesson Protocol
- Create your own graphic organizer to note things that are similar and different with other lesson planning tools
- Discuss the similarities and differences with your group



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Notes:

Take some time to read through the Thinking Through a Lesson Protocol, which is handout #2 in your packet, and as you read, note pieces of the TTLP that are similar to and different from the previous lesson planning tools that you have used. You can use a graphic organizer, like a Venn Diagram or Double Bubble Map, to note similarities and differences. Then we'll share some of the similarities and differences that you noted. When you're ready to move on, click the "Next" button to continue.

(5 minutes, this is a short sharing out of connections with seven-step lesson plans, the enVision math series:

Similarities:

Embodies many of the Principles of Learning with which some teachers may be familiar, use Accountable Talk, Backwards Planning

Differences:

Think about student misconceptions, look at all student solution paths, think about evidence of student learning, high level of questioning, considers strategies to engage all students, asks teachers to think about building on student learning from the lesson, shifts responsibility to the teacher for students to learn the concepts.)

1.5 Rationale for Set Up

Rationale for Set Up

"During the planning phase, teachers make decisions that affect instruction dramatically. They decide what to teach, how they are going to teach, how to organize the classroom, what routines to use, and how to adapt instruction for individuals."

Fennema & Franke, 1992, p. 156

Fennema, E. & Franke, M. (1992). Teachers' knowledge and its impact. In Douglas Grouws (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 147 - 164). Indianapolis, IN: Macmillan Publishing Inc.



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Notes:

"During the planning phase, teachers make decisions that affect instruction dramatically. They decide what to teach, how they are going to teach, how to organize the classroom, what routines to use, and how to adapt instruction for individuals." We'll be looking at the Set-Up phase today, as we plan to teach the most effective lesson for our students.

1.6 Second Grade California Math Standards

Second Grade California Math Standard

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

A young boy with dark hair, wearing a blue t-shirt, is seen from the side, standing in front of a green chalkboard. He is holding a piece of chalk and has just finished writing a subtraction problem. The problem is written in yellow chalk: 14 minus 12, with a horizontal line under the 12. The boy's right hand is raised towards the board, and he is looking at the numbers he has written.
$$\begin{array}{r} 14 \\ - 12 \\ \hline \end{array}$$

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Notes:

The Second Grade Concept Lesson will address this California State Standard in Number Sense.

1.7 Second Grade CCSS Math Standards

Second Grade CCSS Math Standards

2.OA.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.



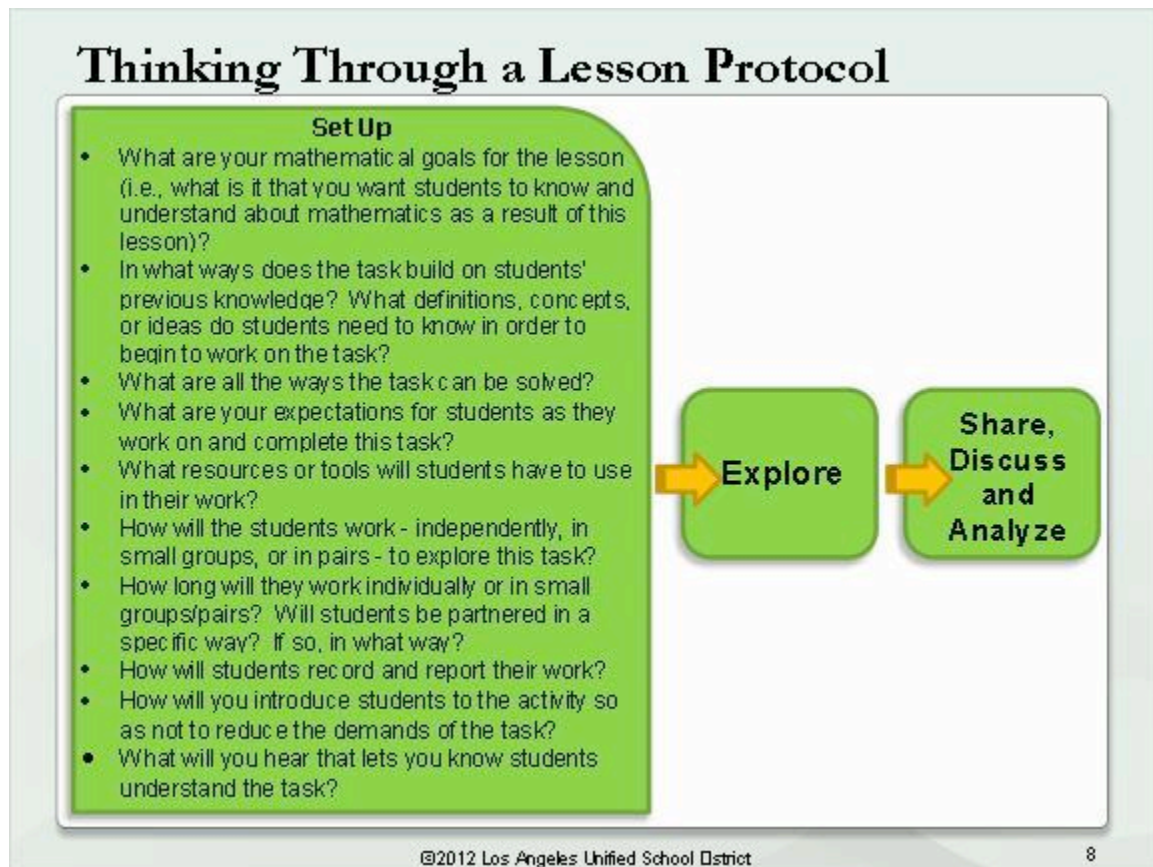
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Notes:

As we move into the Common Core State Standards in 2014-15, we can see the evolution of this same standard. 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.

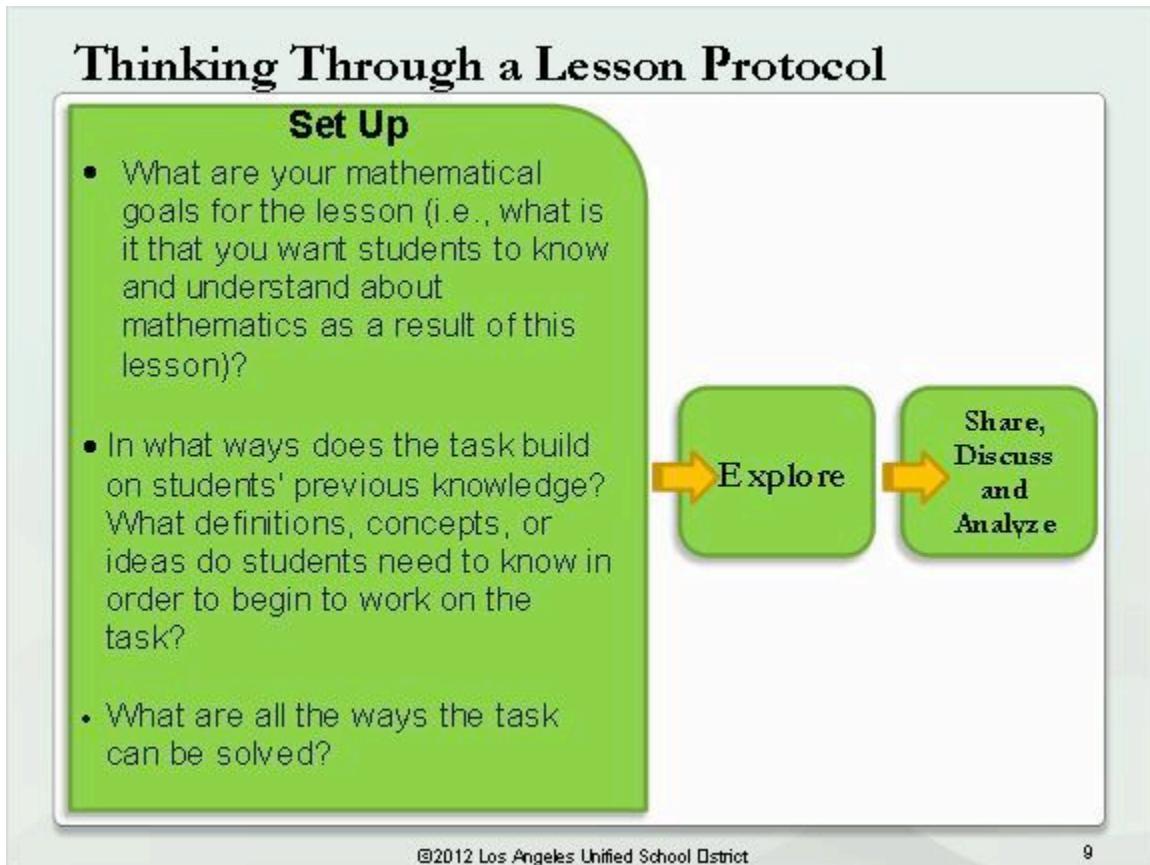
1.8 Thinking Through a Lesson Protocol 2



Notes:

Today we'll be focusing on the Set-Up phase. Let's take a closer look at the first three questions.

1.9 Thinking Through a Lesson Protocol 3




Notes:

What are your mathematical goals for the lesson? In other words, what is it that you want students to know and understand about mathematics as a result of this lesson? In what ways does the task build on students' previous knowledge? What definitions, concepts or ideas do students need to know in order to begin work on the task? What are all the ways the task can be solved?

1.10 Concept Lesson

Concept Lesson

- Take the next 5 minutes to read the concept lesson
- What connections do you see between the lesson write-up and the TTLP?



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Notes:

Now that we've had some time to compare and contrast the TTLP to our own lesson planning process, we are going to explore the Concept Lesson in order to see the type of lesson that results from using the TTLP for planning. Embedded in the Concept Lesson write-up are examples of the questions outlined in the TTLP, and how they are addressed. Our goal is to read the concept lesson write-up and consider what connections you see between the lesson write-up and the TTLP. Take a minute to read the Set-Up pages of the Concept Lesson. You'll see "Set Up" written in the left hand column of the Concept Lesson. When you're finished reading, discuss the connections with your group. Please click the "Next" button when you are ready to continue.

(5 minutes)

1.11 Anticipating Solutions

Anticipating Solutions

At your tables:

- Take a few minutes to independently solve the problem in at least two ways
- Share your solutions with those at your table. Why is it important to anticipate possible solutions before using a task?



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Notes:

We're going to take a couple of minutes of private time to solve the problem on our own. The problem can be found on pages 11 and 12 in the Concept Lesson packet. You can use handout #3 to record your work. Try to show your work in multiple ways, with words, pictures and numbers. When you get to a good stopping point, share out with those at your table. After you've had a chance to share, take a moment to talk about the need to anticipate possible solutions before using a task. When you're ready to continue, click the "Next" button.

(5 minutes)

1.12 Anticipating Misconceptions

Anticipating Misconceptions

- What misconceptions might students have?
- What errors might students make?



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Notes:

Please turn to handout #4. Now that you've solved the problem, you might have already anticipated where the students may have some difficulty. Take a moment to jot down the thinking that may get in their way and share it with those around you. In the next module, we'll be discussing what questions we can ask to help guide students through possible misconceptions. So save your notes, we'll be working with them in the future. Please click the "Next" button when you're ready to continue.

(5 minutes)

1.13 Additional Considerations

Additional Considerations

- What lessons have come before and what lessons will come after this task to support the building of conceptual understanding?



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Notes:

Now that we know what skill sets will help the students be successful, we want to think about when in the unit would be the best time to do the concept lesson. Traditionally, we have introduced concept lessons at the beginning of a unit, in order to allow students the opportunity to build conceptual understanding. The students reveal their understandings to the teacher, so that the teacher can plan the next steps, based on where the students are, and where they need to go. The concept lesson is not a test, or an assessment. It is an exploratory lesson. Take a moment to discuss when and where you might introduce this concept lesson. You can write down your notes on

hand-out #5. Click the "Next" button when you're ready to move on.

(5 minutes)

1.14 Addressing Diverse Learners

Addressing Diverse Learners

- In what ways does the Thinking Through a Lesson Protocol support the needs of diverse learners: ELs, SELs, GATE students, students with disabilities, and other students with special needs?



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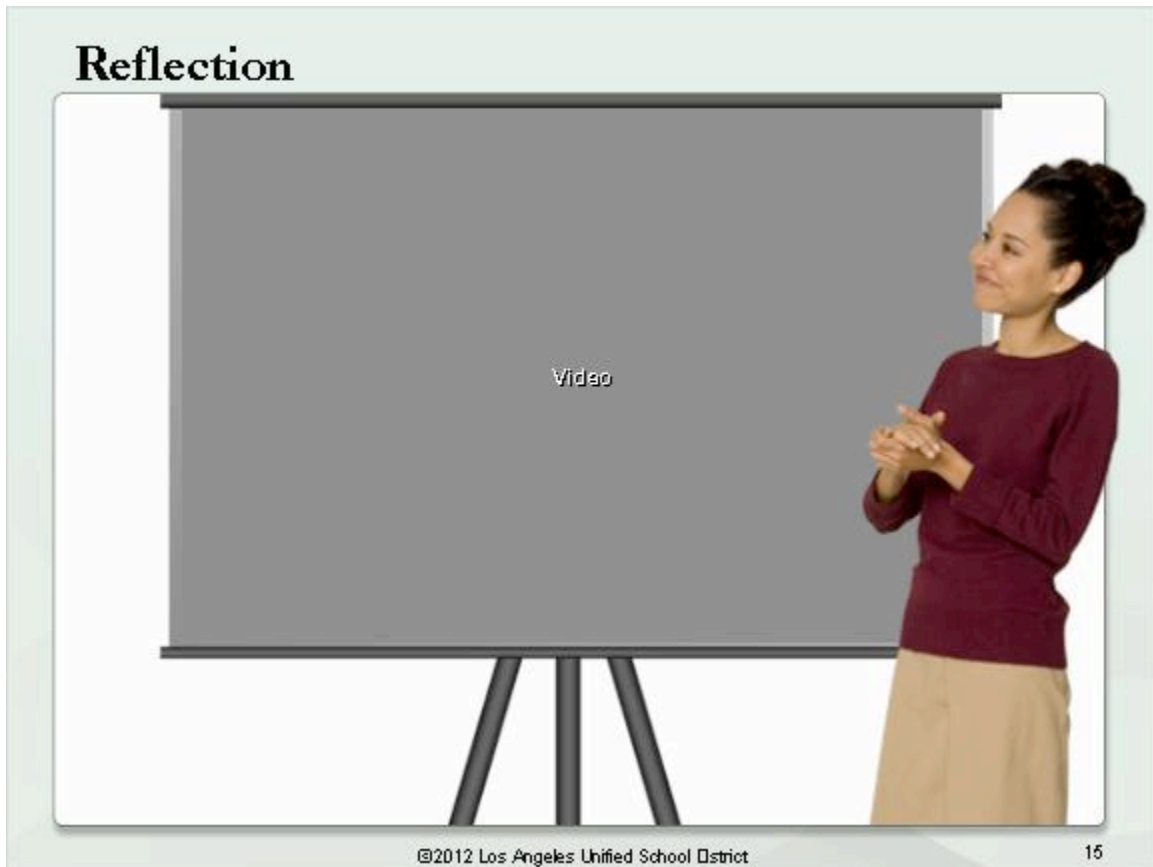
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Notes:

Let's consider the different groups of diverse learners: English Language Learners, Standard English Language Learners, Gifted and Talented students, Students with Disabilities, and other students with special needs. Take a few minutes to work with a partner, identifying how the needs of our diverse learners are met relative to the strategies you identified. How does asking different levels of questions differentiate for diverse learners? Where do you see opportunities for students to have instructional conversations, work in cooperative groups, develop academic vocabulary and use graphic organizers and visual tools? Use handout #5 to record your notes. Please click the "Next" button when you're ready to continue.

(5 minutes)

1.15 Reflection (Video Clip)



Notes:

The Set-Up Phase is instrumental in the Concept Lesson. Let's listen in as a teacher discusses how they use the TTLP in a second grade classroom. As you view the video, think about how you might incorporate this practice into your work in the classroom. Click the "Next" button to continue.

(video is 5 minutes)

1.16 Reflect on Video

Reflect on Video

- What evidence of the Set-Up stage do you see in the video?
- As you prepare to teach the Concept Lesson, what will you remember from the video?



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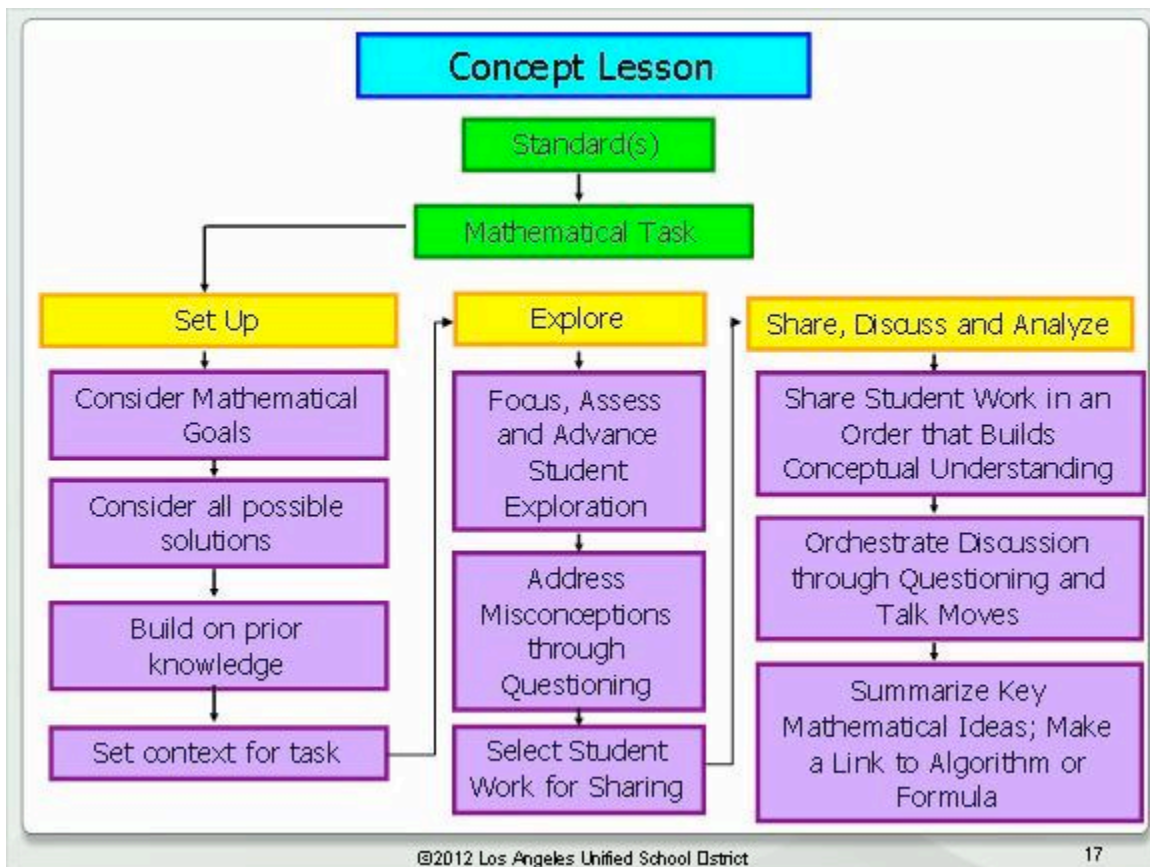
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Notes:

Take a moment to talk with those around you about what you noticed in the video. What evidence of the Set-Up stage from the Thinking Through the Lesson Protocol do you see in the video? And what will be your individual take-away to carry into the Concept Lesson in your own classroom? Click the "Next" button when you are ready to continue.

(5:00)

1.17 Concept Lesson



Notes:


Thank you for participating in this module on the Set-Up phase of the Thinking Through the Lesson Protocol. Please save your notes on the Concept Lesson, your solutions paths, and your list of possible student misconceptions, so we can continue to discuss them. In our next module, we'll look at the Explore phase, and the role of questioning in guiding students' understanding. And our third module will address the Share, Discuss and Analyze phase. Thank you.

1.18 Conclusion

Conclusion

Thank you for participating in this module on the Set-Up phase of the Thinking Through the Lesson Protocol.

[Special Thanks](#)



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Click on the Special Thanks button to finish. Total time: 48 minutes

1.19 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
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Nicole Jacobson	Charity Weber
Daniel Kim	Dina Williams
Elaine LeDuff	



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