1st Grade Unit 6 Problems with Unknowns - Priorities Document

Please see the Draft Grade 1 Math Overview and Scope and Sequence document for important information about the year and emphases for each unit.

Overarching Big Ideas

• ***Less is more***	• ***Depth vs. breadth***	• ***Relationships over everything***	• ***Access for all, especially emerging bilinguals & students with disabilities***

	Window (change)	**Big Idea**	**Comments**	Standards (**Priority Standards** bolded)
Unit 1.6 Problems with Unknowns **Spring DA**	4 weeks (was 15 days)	Addition and subtraction represent a relationship between quantities in a real world context. The context may represent an add to, take from, put together, take apart, or comparison situation which can be recorded symbolically with an equation. Any number in the relationship may be unknown.	Emphasize problems that involve sums less than or equal to 10 and/or the related differences to keep the focus on making sense of different problem types.	**1.OA.1** **1.OA.7** **1.OA.8**

Norms

Answers are important, but they are not the math.	**Talk about each other's thinking.**	**Errors are gifts that promote discussion.**	**Ask questions until ideas make sense.**	**Use multiple strategies and multiple representations.**
				

2020-21 SFUSD Elementary Math Distance Learning Resources	**Grade 1 Curriculum Portal**	**Gr 1 Learning Stations Bank**	**Gr 1 Math Talks Bank**
Possible classroom materials / manipulatives • Double ten frame • Mini Ten Frame or Mini Ten Frame for Labels	• Number Lines 0 to 20 BLM • Pennies • Dice		• Number cards • Linking cubes

1.6 Slidedeck / Spanish

	New Learning	Re-engagement	Other Resources
Standards: **1.OA.1** **1.OA.7** **1.OA.8**	• Students represent and solve addition and subtraction word problems with the change or start unknown. • Students understand the meaning of the equal sign through examining the relationship between equivalent expressions. • Students create equivalent addition and subtraction equations. • Students determine the unknown start or change quantity in addition or subtraction equations. • Students represent and solve word problems that require comparison of quantities.	In Unit 1.1, students worked with add to and put together situations where the sum is unknown to 10 and then the teen numbers. In Unit 1.3, students were exposed to add to and put together addition within 20, where the unknown is the sum or the change. In Unit 1.4, students connected unknown change addition problems to subtraction and worked with take from and take apart problem types.	Unit 1.6 Video Podcast Grade 1 Unit 1.6 Family Letter S C Student PDFs 1.6 Classwork S. .C. 1.6 Homework S. .C.
	Recommended Lessons	**Technology Recommendations**	
Daily Routines	**Optional Routines**: • Continue the **"Number of Days in School" routine** during this week of school. See Number of Days in School (Spanish) for ideas. • Continue the **"Skip Counting" routine** begun in Unit 0. See Counting Routines for further instructions • Daily Schedule • Math Talks	Dots in a Box - Fluency practice for sums to 20 Georgia CCSS-M Standards videos is a website from the State of Georgia that includes videos of all the math content standards. For this unit, watch the video for 1.OA.7. Virtual Math Balance here: http://www.didax.com/apps/math-balance/	
Lesson 1:	**Entry Task :**Students solve an unknown addend word problem in an add to situation with pennies. **Launch: 3 -** Read Protocol • First Read: *What is the story about?* • Second Read: *What are the quantities and the units in the story?* • Third Read: *What math question could we ask about the story?* **Explore**: Seesaw Lesson 1 (Spanish) - Pennies, Entry Task Pennies Student S C , Double ten frame, Number Lines 0 to 20 BLM • Solve the Pennies problem - Use the tools or drawings to show your thinking. **Summarize:** Use examples provided or actual student work to discuss various strategies for solving problems with the change unknown • **Core Math to Emphasize:** The change can be unknown in an *add to* situation. Change unknown situations can be solved by counting on, counting back or subtraction.		

Lesson 2	**LS1 Day 2**: Students solve a missing addend problem in the context of coins. **Launch**: 3 **-** Read Protocol ● First Read: *What is the story about?* ● Second Read: *What are the quantities and the units in the story?* ● Third Read: *What math question could we ask about the story?* **Explore**: Seesaw Lesson 2 (Spanish) - Pennies and Nickels, Day 2 Pennies and Nickels Student S C Day 2 Pennies and Nickels Extension Problems BLM S C ● Have students help you fill in the **tape diagram**. ● Students use the tools to solve the Pennies and Nickels problems. **Summarize:**: Ask the students what equations they wrote and list them under the tape diagram. ● **Core Math to Emphasize:** One addend can be unknown in a *put together* situation. Unknown addend situations can be solved by counting on, counting back or subtraction, and represented with a tape diagram.
Lesson 3	**LS 1 Day 3** - Students play a game where they find the missing change addend. **Launch**: Tell students today they are going to play a game where the unknown number is in the middle of the equation ● Spin the spinner for the first addend and pull a number card 6-20 for the result. ● Today they will use the number line to solve the problem. Allow students to use counters with their number lines as needed. **Explore**: Seesaw Lesson 3 (Spanish) - Spinner Game, Spinner , Addition Change Unknown Game Template BLM S C, Number Lines 0 to 20 BLM ● Model a few more rounds by spinning the spinner or rolling a dice and choosing a number cards 6-20 **Summarize**: Choose 2–3 students who recorded the same problem and have them show how they solved it on the number line, or use these samples. ● Ask students if they thought of the same problem in a different way. ● Ask students to describe what the thinking is in each number line ● Ask students why each strategy works. **Core Math to Emphasize:** Unknown change addition problems can be shown on a number line by counting on, counting back or subtraction.
Lesson 4	**LS 1 Day 4** Students play a subtraction game where they find the missing subtrahend. **Launch:** Remind students of the addition game they played yesterday with the unknown in the middle of the equation. ● Tell the students that today they are going to play the same game, but with subtraction. ● Ask students how they might use the number line to help them solve subtraction problems when they don't know how much to take away. **Explore:** Seesaw Lesson 4 (Spanish) - Spinner Game #2, Spinner , Subtraction Change Unknown Game Template BLM S C , Number Lines 0 to 20 BLM

	• Show the students the Subtraction Change Unknown Game. • Demonstrate how to play the game if necessary. • Have students use the number line to help them solve the problems. **Summarize:** • Compare the representations they created today with the ones created for the addition problems yesterday. • Ask students what is the same and what is different about them. **Core Math to Emphasize:** Unknown change subtraction problems can be shown on a number line by counting on, counting back or subtraction.
Lesson 5	**LS2 Day 1 -** Students solve a start unknown problem in a penny context. **Launch**: 3 **-** Read Protocol • First Read: *What is the story about?* • Second Read: *What are the quantities and the units in the story?* • Third Read: *What math question could we ask about the story?* **Explore**:: Seesaw Lesson 5 (Spanish)- Pennies Start Unknown Pennies Student S C Pennies Three Read BLM S C • Solve the Pennies Problem • Use the tools and/or drawings to show your thinking. **Summarize**: Notice and Wonder • *What's the Same? What's Different?* Compared to the Entry Task • **Core Math to Emphasize:** The start can be unknown in an *add to* situation. Start unknown situations can be solved by counting on, counting back or subtraction.
Lesson 6	**LS 2 Day 2 -** Students play a game where they find the missing starting addend. **Launch-** • Remind students of the problem they solved yesterday where the start of the problem was unknown, • Demonstrate how to play the game using the number line • Model counting up, counting back, and subtraction **Explore -** Seesaw Lesson 6 (Spanish)- Start Unknown Game, Number cards 6–20, Dice, Addition Start Unknown Game Template BLM S C, Number Lines 0 to 20 BLM • Roll the dice and use the number card • Solve for the unknown in the equation using the number line • Record your answer using the microphone **Summarize-**. • Use samples provided, or Choose 3–4 students to share a completed problem with their equation, strategy, and number line

	representation. • Ask the students what is the same and what is different about the strategies and representations • **Core Math to Emphasize**: Unknown start addition problems can be shown on a number line by counting on, counting back or subtraction.
Lesson 7	**LS2 Day 3 -** Students solve a start unknown subtraction word problem. **Launch-** 3 **-** Read Protocol • First Read: *What is the story about?* • Second Read: *What are the quantities and the units in the story?* • Third Read: *What math question could we ask about the story?* • Ask students to think about how they might set up a tape diagram or equation **Explore -** Seesaw Lesson 7 (Spanish)- More Pennies, Start Unknown Pennies Three Read BLM S C, Start Unknown Pennies Student S C, Double ten frame, Number Lines 0 to 20 BLM • Solve using tools and drawings **Summarize-**.Have 2–3 students share their representations and equations. Connect each part of the story problem to each part of the representation. Be sure the equation that represents the story problems is shared (? - 3 = 6). Allow students to also show the equations for solving the problem (6 + 3 = ?, 3 + 6 = ?) and distinguish between equations that represent the situation and equations we use to solve the problem.**Core Math to Emphasize:** The start can be unknown in a *take from* situation. Start unknown situations can only be solved by counting on or addition.
Lesson 8	**LS 2 Day 4 -** Students play a subtraction game where they find the missing minuend. **Launch-** • Show the students the Subtraction Start Unknown Game Template. Demonstrate how to play the game as necessary. • Have students use the number line or counters with or without the double ten frame. **Explore -** Seesaw Lesson 8 **(Spanish)**- Start Unknown Game #2**,** Number cards 0–14, Dice, Subtraction Start Unknown Game Template BLM S C, Double ten frame, Number Lines 0 to 20 BLM • Roll the dice and use the number card • Solve for the unknown in the equation using the number line • Record your answer using the microphone **Summarize-**.Notice and Wonder • Re-enact a problem, for example, taking away 7, leaving 4. Students may recognize that they need to give the student with the question mark all of the cubes to solve the problem. **Core Math to Emphasize:** Unknown start subtraction problems can be solved on a number line by counting on or addition.
Lesson 9	**Expert Task -** Students generate equivalent subtraction expressions.

	Launch- Show **2 – 1 = ___**. Ask students what they know about this equation. Show **2 – 1 = _____ – _____**. Have students think to determine what they could put into the blanks to make the equation true. ● *What does the equal sign tell us in the number sentence?* ● *What do the blanks tell us?* ● *How are the numbers on the left and right related?* **Explore -** Seesaw Lesson 9 (Spanish)- Expert Task Subtraction Equations BLM , Number Lines 0 to 20 BLM, Double ten frame ● Make each number sentences true by deciding on the missing numbers. ● Find different combinations that will make the number sentence true. ● Complete as many pages as you can! **Summarize-**. Discuss visuals of different ways students might think of **8 – 3 = __ – __.** Notice and Wonder...Math Balance in Didax - Explore the equivalent relationship between the numbers on either side of an equal sign on this website with students. ● **Core Math to Emphasize:** There is an equivalent relationship between the numbers on either side of an equal sign.
Lesson 10	**Milestone Task** - Students solve problems with unknowns in a variety of positions within 20. **This task is an SFUSD Math District Assessment.** 1.6 MMT Lesson Slides (Chinese) **Launch Whole Class or Groups:Launch: 3 Read Protocol** ● *What's the story about?* ● *What are the units and quantities?* ● *Act it out!* **Explore Independent work:** Seesaw Milestone (Spanish), Seesaw (Chinese) Trisha's Pennies BLM S C ● Part 1: Make a tape diagram of the situation showing the unknown. ● Write an equation with an unknown to match the situation. Solve the problem. ● Part 2: Find the unknown in the equation ● Show how you know. **Summarize: Whole Class or Groups:** Trisha's Pennies Rubric, Trisha's Pennies Answer Guide Teacher, Student Work Samples and Commentary Teacher **Core Math to Emphasize:** ● Analyzing language, making tape diagrams, and writing equations can help us make sense of word problems with unknowns.

Standards

Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. [2]

[2]See Glossary, Table 1. [online Resources folder].

Work with addition and subtraction equations.

1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*

1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = Δ.*