### Eureka Math

1st Grade Module 4 Lesson 21

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### Icons



















Manipulatives Needed







#### Lesson 21

Objective: Recognize and make use of part—whole relationships within tape diagrams when solving a variety of problem types.

#### Suggested Lesson Structure

Fluency Practice
 Concept Development
 Student Debrief
 Total Time

(10 minutes) (60 minutes)

(12 minutes)

(38 minutes)



### Materials Needed

- Fluency
   (S) 1 die per set of partners
- Concept Development
  - o (S) Personal white board
  - (T) Board or document camera

Note: As in Lessons 19 and 20, the suggested delivery of instruction for Lesson 21 is an integration of student work on Problem Sets with guided instruction interspersed between each problem. If students have been highly successful with the past days' lessons, have them try representing the quantities in each part using the number and label without including the shapes inside each part. The goal is to support students in identifying a process for making sense of a problem today. By working with the tape diagrams as drawings related to the varying problem types, students can internalize an entry point into any problem. Can you draw something? What can you draw? What can you tell from looking at your drawing? Tape diagrams, even without shapes inside each part, can be considered a type of drawing. Remember to have students hold on to the Problem Sets so they can use them as a reference later in the topic.

Suggested Delivery of Instruction for Solving Word Problems

#### 1. Model the problem, calculate, and write a statement.

Choose two pairs of students who have been accurately solving the Application Problems from Topic D and using simple shapes in a straight line when drawing. Invite these two pairs of students to work on chart paper while the others work independently or in pairs at their seats. Vary the selected students as the problems become more complex.

Review the following questions before beginning the first problem: Can you draw something? What can you draw? What can you tell from looking at your drawing?

As students work, circulate. Reread Problem 1, and reiterate the questions above. After a maximum of two minutes, have the pairs of students share their labeled diagrams. Give the students two to three minutes to finish work on that question, sharing their work and thinking with a peer. All should write their equations and statements of the answer.

#### **2.** Assess the solution for reasonableness.

Give students one to two minutes to assess and explain the reasonableness of their solution. For about one minute, have the demonstrating students receive and respond to feedback and questions from their peers.

#### 3. As a class, notice the ways the drawing depicts the story and the solution.

Ask questions to help students recognize how each part of their drawing matches the story and solution. This helps students begin to see how the same process can help them solve varying word problems. Keep at least one chart paper sample of each solution for reference later in the lesson.



I can recognize and make use of part–whole relationships within tape diagrams when solving a variety of problem types.

# Application Problem RDW

There is no Application Problem for today's lesson.

# Beep Counting by Ones and Tens

I will say a series of four numbers, but replace one of the numbers with the word "beep" (e.g., "1, 2, 3, beep"). When signaled, you say the number that was replaced by the word "beep" in the sequence.

### Number Bond Addition and Subtraction



I will write a number bond for a number between 0 and 10, with a missing part or whole. You write an addition and a subtraction sentence with a box for the missing number in each equation. Then, then solve for the missing number.

Example:

5 + 3 =

### Race and Roll Addition



n

All students start at 0. Partners take turns rolling a die, saying a number sentence, and adding the number rolled to the total. For example, Partner A rolls 6 and says, "0 + 6 = 6." Then, Partner B rolls 3 and says, "6 + 3= 9." They continue rapidly rolling and saying number sentences until they get to 20 without going over. Partners stand when they reach 20. For example, if they are at 18 and roll 5, they would take turns rolling until one of them rolls a 2 or a 1 and a 1. Then, they would both stand.

### Number Bond Addition and Subtraction



I will write a number bond for a number between 0 and 10, with a missing part or whole. You write two addition and two subtraction sentences with a box for the missing number in each equation. They then solve for the missing number.

Example:  

$$5 + \boxed{3} = 8$$
  $8 - 5 = \boxed{3}$   
 $3 + 5 = 8$   $8 - \boxed{3} = 5$ 

### Take Out 1 or 10



I will choose numbers between 10 and 20 and follow the paradigm below.

T: Say 15 the Say Ten way.

S: Ten 5.

T: Take out 1.

S: Ten 4.





I'm going to draw a rectangle. This rectangle is long enough to hold this row of 5 dots. I'll draw 5 dots.



Look at this second 5. I'm going to start drawing a rectangle that is long enough to hold a row of 5 dots of the same size. Tell me when to stop.



It is about the same size as the first rectangle.





Let's do the same process with:

5 and 4

5 and 10



Rose drew 7 pictures, and Willie drew 11 pictures. How many pictures did they draw 1. all together?



 Rose drew 7 pictures, and Willie drew 11 pictures. How many pictures did they draw all together?





2. Darnel walked 7 minutes to Lee's house. Then, he walked to the park. Darnel walke for a total of 18 minutes. How many minutes did it take Darnel to get to the park?



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3. Emi has some goldfish. Tamra has 14 betta fish. Tamra and Emi have 19 fish in all. How many goldfish does Emi have?



3. Emi has some goldfish. Tamra has 14 betta fish. Tamra and Emi have 19 fish in all. How many goldfish does Emi have?





	5	
Emi has _	2	goldfish.



3. Emi has some goldfish. Tamra has 14 betta fish. Tamra and Emi have 19 fish in all. How many goldfish does Emi have?





	5	
Emi has _	2	goldfish.



4. Shanika built a block tower using 14 blocks. Then, she added 4 more blocks to the tower. How many blocks are there in the tower now?



4. Shanika built a block tower using 14 blocks. Then, she added 4 more blocks to the tower. How many blocks are there in the tower now?





5. Nikil's tower is 15 blocks tall. He added some more blocks to his tower. His tower is 18 blocks tall now. How many blocks did Nikil add?







6. Ben and Peter caught 17 tadpoles. They gave some to Anton. They have 4 tadpoles left. How many tadpoles did they give to Anton?



6. Ben and Peter caught 17 tadpoles. They gave some to Anton. They have 4 tadpoles left. How many tadpoles did they give to Anton?





Look at Problem 1. What did you draw? How did your drawing help you solve the problem?



Look at Problem 2. What did you draw first? How is your drawing similar or different from the drawing you made for Problem 1?



Look at Problem 3. How did you draw this problem? How is your drawing similar to or different from your partner's drawing?



Look at Problem 5. Did you solve this the same way you solved Problem 3, or did you solve it in a different way? Share your drawing, and explain your thinking.



In an earlier lesson, we were looking at smaller, single-digit addition facts inside two-digit addition problems. Can you find any simpler addition facts inside your number sentences? Share your examples. How can you draw your tape diagrams in ways that help you see simple problems inside the larger ones?



Using a highlighter, underline the question in each problem. Highlight the part of the tape diagram that shows the answer to the question. What do you notice?



Some people write only numbers and not circles inside the parts of a tape diagram. Why might we want to include the circles in each part? Why might we choose sometimes to use only the number and leave out the circles in each part?

## Exit Ticket



A STORY OF UNITS	Lesson 21 Exit Ticket	1.
Name	Date	
<u>R</u> ead the word problem.	16	
Draw a tape diagram and label.	000000000000000000000000000000000000000	-
Write a number sentence and a statement that matches		

Shanika read some pages on Monday. On Tuesday, she read 6 pages. She read 13 pages during the 2 days. How many pages did she read on Monday?

the story.

Shanika read \_\_\_\_\_ pages on Monday.