

Eureka Math

1st Grade Module 4 Lesson 18

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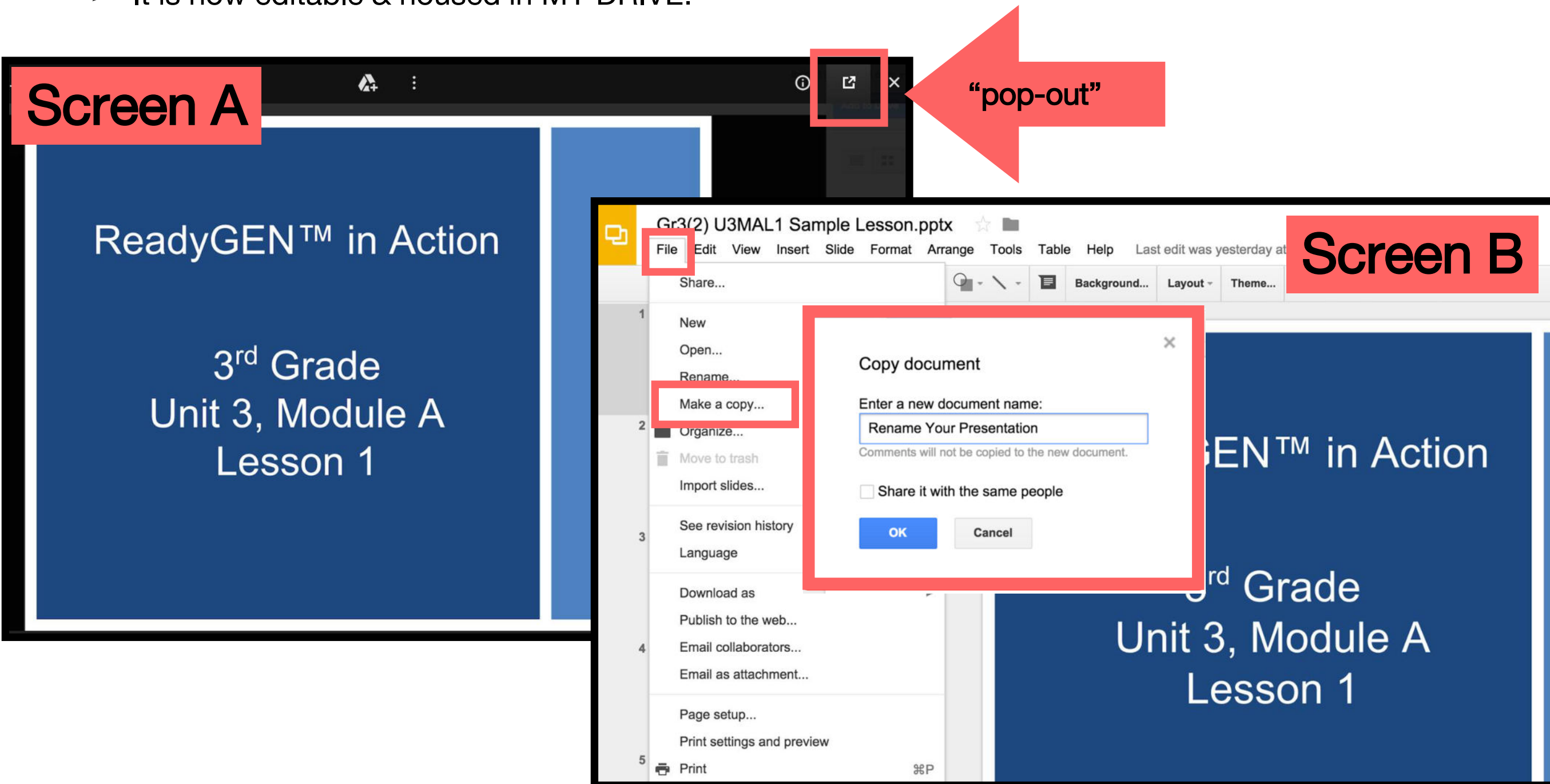


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Reflecting your Teaching Style and Learning Needs of Your Students

- When the Google Slides presentation is opened, it will look like Screen A.
- Click on the “pop-out” button in the upper right hand corner to change the view.
- The view now looks like Screen B.
- Within Google Slides (not Chrome), choose FILE.
- Choose MAKE A COPY and rename your presentation.
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- It is now editable & housed in MY DRIVE.



Icons



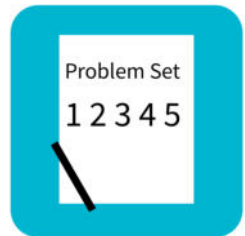
Read, Draw, Write



Learning Target



Personal White Board



Problem Set



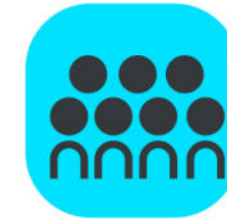
Manipulatives Needed



Fluency



Think Pair Share



Whole Class



Individual



Partner



Small Group



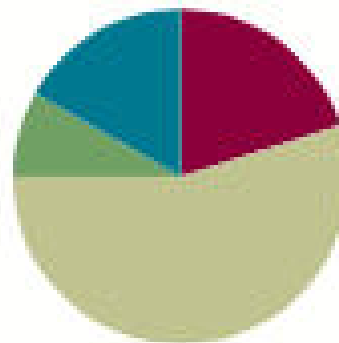
Small Group Time

Lesson 18

Objective: Share and critique peer strategies for adding two-digit numbers.

Suggested Lesson Structure

■ Application Problems	(5 minutes)
■ Fluency Practice	(12 minutes)
■ Concept Development	(33 minutes)
■ Student Debrief	(10 minutes)
Total Time	(60 minutes)



Materials Needed

- Fluency
 - (S) Core Addition Fluency Review: Missing Addends (Lesson 17 Core Addition Fluency Review)
 - (S) Personal white board, die or numeral cards 0–10.
- Concept Development
 - (T) Student work samples (Template), projector (S) Personal white board



I can share and critique peer strategies for two-digit addition.

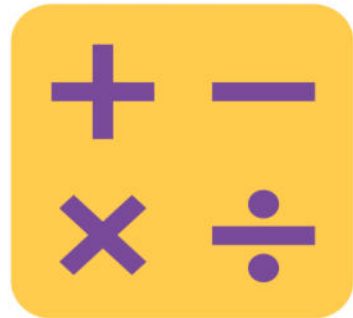
Application Problem

The logo consists of the letters "RDW" in white, bold, sans-serif font, centered within a green rounded square.

Use the RDW process to solve one or both of the problems.

- a. Some ducks were in a pond. 4 baby ducks joined them. Now, there are 6 ducks in the pond. How many ducks were in the pond at first?
- b. Some frogs were in the pond. Three jumped out, and now there are 5 frogs in the pond. How many frogs were in the pond at first?

Core Addition Fluency Review: Missing Addends



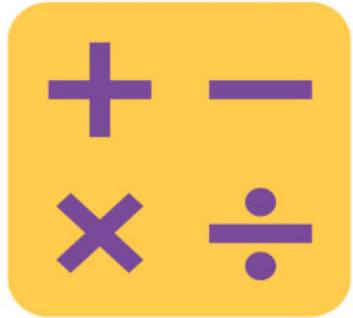
Let's practice addition!

Name _____ Date _____

Core Addition Fluency Review: Missing Addends

- | | | |
|---------------------------------|---------------------------------|----------------------------------|
| 1. $5 + \underline{\quad} = 5$ | 16. $6 + \underline{\quad} = 7$ | 31. $9 + \underline{\quad} = 9$ |
| 2. $4 + \underline{\quad} = 5$ | 17. $1 + \underline{\quad} = 7$ | 32. $0 + \underline{\quad} = 9$ |
| 3. $2 + \underline{\quad} = 5$ | 18. $0 + \underline{\quad} = 7$ | 33. $1 + \underline{\quad} = 9$ |
| 4. $3 + \underline{\quad} = 5$ | 19. $7 + \underline{\quad} = 7$ | 34. $2 + \underline{\quad} = 9$ |
| 5. $0 + \underline{\quad} = 5$ | 20. $3 + \underline{\quad} = 7$ | 35. $7 + \underline{\quad} = 9$ |
| 6. $1 + \underline{\quad} = 5$ | 21. $4 + \underline{\quad} = 7$ | 36. $6 + \underline{\quad} = 9$ |
| 7. $1 + \underline{\quad} = 6$ | 22. $4 + \underline{\quad} = 8$ | 37. $5 + \underline{\quad} = 9$ |
| 8. $0 + \underline{\quad} = 6$ | 23. $5 + \underline{\quad} = 8$ | 38. $3 + \underline{\quad} = 9$ |
| 9. $6 + \underline{\quad} = 6$ | 24. $6 + \underline{\quad} = 8$ | 39. $4 + \underline{\quad} = 9$ |
| 10. $5 + \underline{\quad} = 6$ | 25. $2 + \underline{\quad} = 8$ | 40. $4 + \underline{\quad} = 10$ |
| 11. $3 + \underline{\quad} = 6$ | 26. $3 + \underline{\quad} = 8$ | 41. $5 + \underline{\quad} = 10$ |
| 12. $4 + \underline{\quad} = 6$ | 27. $0 + \underline{\quad} = 8$ | 42. $6 + \underline{\quad} = 10$ |
| 13. $2 + \underline{\quad} = 6$ | 28. $8 + \underline{\quad} = 8$ | 43. $3 + \underline{\quad} = 10$ |
| 14. $2 + \underline{\quad} = 7$ | 29. $7 + \underline{\quad} = 8$ | 44. $1 + \underline{\quad} = 10$ |
| 15. $5 + \underline{\quad} = 7$ | 30. $1 + \underline{\quad} = 8$ | 45. $2 + \underline{\quad} = 10$ |

Relating Addition and Subtraction

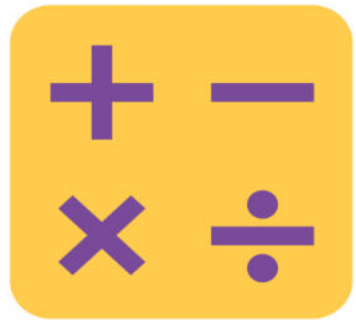


Choose a column from the review sheet and rewrite each problem as a subtraction equation. See how many you can complete in two minutes!

Name _____ Date _____

Core Addition Fluency Review: Missing Addends

- | | | |
|---------------------------------|---------------------------------|----------------------------------|
| 1. $5 + \underline{\quad} = 5$ | 16. $6 + \underline{\quad} = 7$ | 31. $9 + \underline{\quad} = 9$ |
| 2. $4 + \underline{\quad} = 5$ | 17. $1 + \underline{\quad} = 7$ | 32. $0 + \underline{\quad} = 9$ |
| 3. $2 + \underline{\quad} = 5$ | 18. $0 + \underline{\quad} = 7$ | 33. $1 + \underline{\quad} = 9$ |
| 4. $3 + \underline{\quad} = 5$ | 19. $7 + \underline{\quad} = 7$ | 34. $2 + \underline{\quad} = 9$ |
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| 7. $1 + \underline{\quad} = 6$ | 22. $4 + \underline{\quad} = 8$ | 37. $5 + \underline{\quad} = 9$ |
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Analogous Addition Sentences

Let's work in pairs!



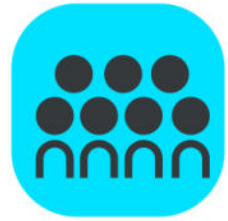
1. Each student rolls one die and writes the number rolled. They then make a list, adding 1 ten to their number on each new line up to 3 tens. (See diagram to the right.)

STEP 1	
<u>Partner A</u>	<u>Partner B</u>
4	3
14	13
24	23
34	33

2. Students write equations, adding the number on their partner's die to each line.

STEP 2	
<u>Partner A</u>	<u>Partner B</u>
$4 + 3 = 7$	$3 + 4 = 7$
$14 + 3 = 17$	$13 + 4 = 17$
$24 + 3 = 27$	$23 + 4 = 27$
$34 + 3 = 37$	$33 + 4 = 37$

3. Partners exchange boards and check each other's work.

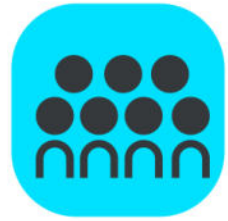


Concept Development

17 + 4



Turn and talk to your partner about how you would solve this problem.

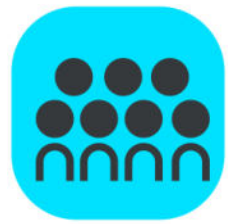


Concept Development

17 + 4



Turn and talk to your partner about how you would solve this problem.



Concept Development

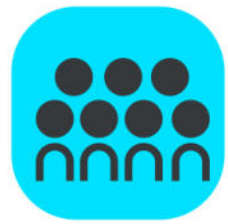
$$17 + 4$$



Turn and talk to your partner about how he showed his solution to $17 + 4$, and think about how we can label his work.

Student A

$$17 + 4 = 21$$
$$17 \xrightarrow{+3} 20 \xrightarrow{+1} 21$$



Concept Development

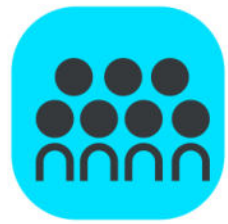
$$17 + 4$$



Let's label it the arrow way. He got to the next ten by adding 3. Then, he added the 1 that was left and got 21.

Student A

$$17 + 4 = 21$$
$$17 \xrightarrow{+3} 20 \xrightarrow{+1} 21$$



Concept Development

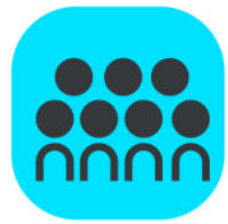
$$17 + 4$$



Yes! The arrow way and the number sentences clearly show what he was thinking. I am going to label this work The Arrow Way.

Student A

$$17 + 4 = 21$$
$$17 \xrightarrow{+3} 20 \xrightarrow{+1} 21$$



Concept Development

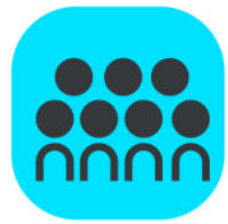
$$17 + 4$$

How did this student show how to solve $17 + 4$?



Student B

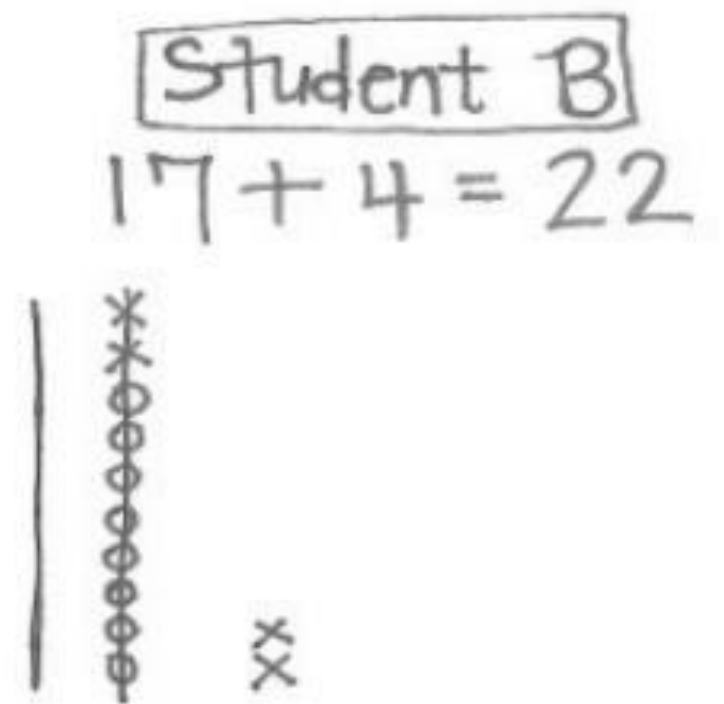
$$17 + 4 = 22$$

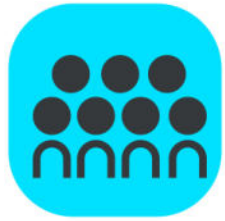


Concept Development

$$17 + 4$$

She drew quick tens!

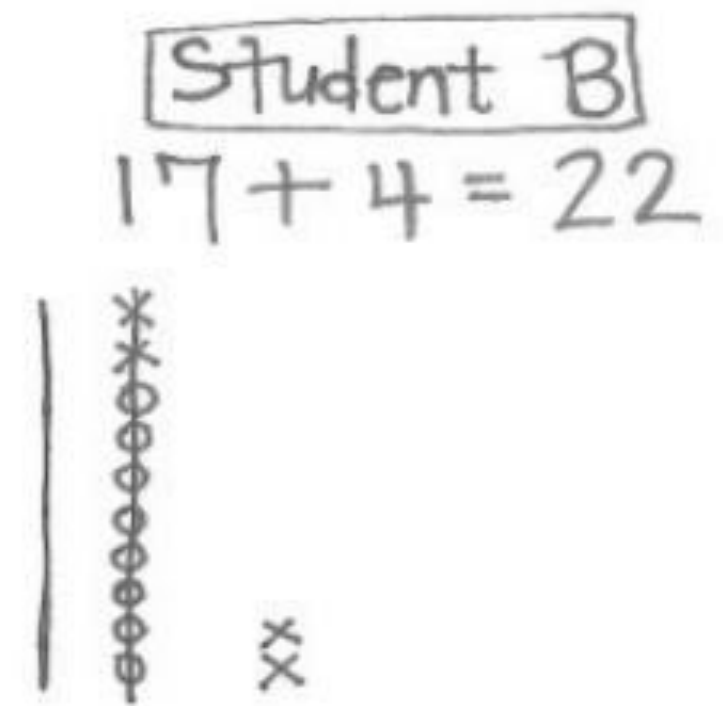


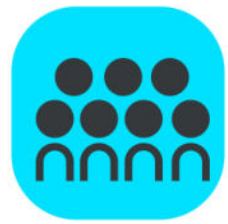


Concept Development

$$17 + 4$$

It looks like she added the ones together. She showed how she made a ten by drawing a line through the 10 ones. She added 2 tens and 2 ones and got 22. I noticed a mistake! She drew 18 first instead of 17. She drew an extra circle. She added 4 correctly using Xs; but because she started out by drawing the wrong number, her answer is wrong. She should have drawn 17 and 4. She should have gotten 21 as the answer.





Concept Development

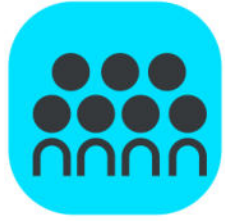
$$17 + 4$$

What are some ways this student can improve her work?

Student B

$$17 + 4 = 22$$

Handwritten work for the problem $17 + 4 = 22$. The student has written "Student B" in a box. Below it, the equation $17 + 4 = 22$ is written. To the left of the equation, there is a vertical line, a column of 17 circles, and a column of 4 crosses. To the right of the equation, the result "22" is written.



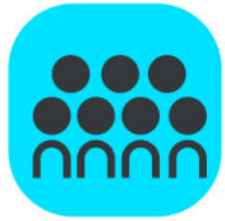
Concept Development

$$17 + 4$$

She needs to count carefully, especially when she's drawing her ones. She should check her work with her partner. Then, she might have caught her mistake.

Student B

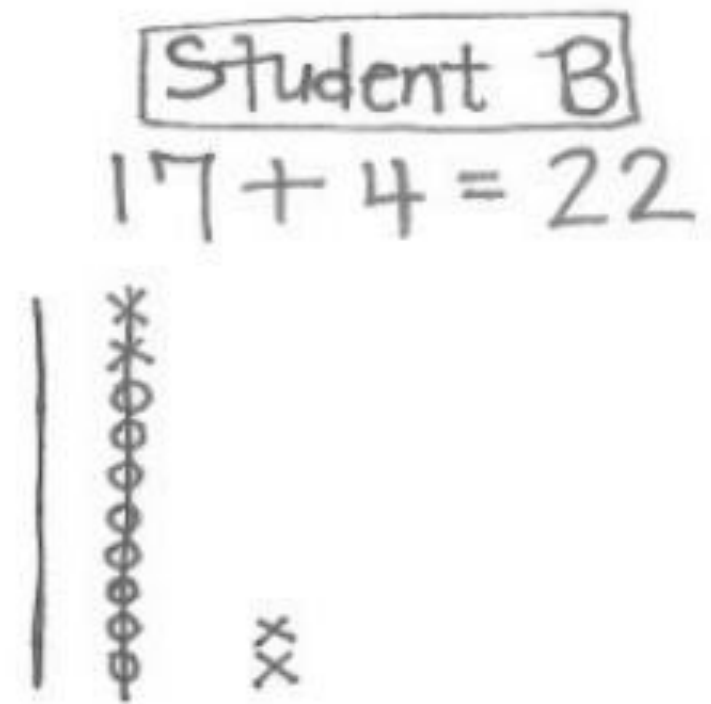
$$17 + 4 = 22$$

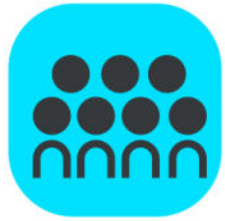


Concept Development

$$17 + 4$$

Even though drawing is easy for many of you, it's not always the best way to get the correct answer, because sometimes you have to make so many circles and Xs. Somewhere along the way, you can lose count and make a mistake.





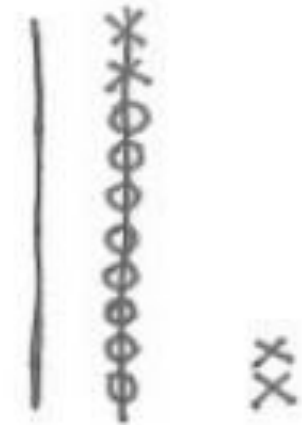
Concept Development

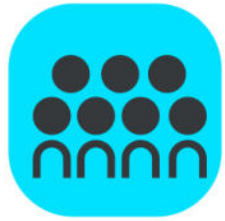
$$17 + 4$$



Work carefully, and show $17 + 4$ using the quick ten drawing on your personal white board. Then, check your work with your partner.

Student B
 $17 + 4 = 22$





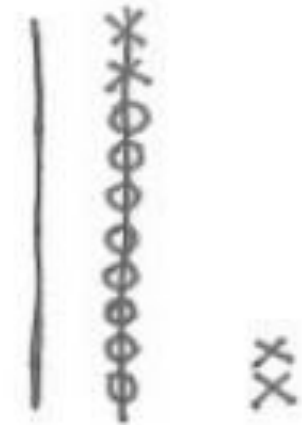
Concept Development

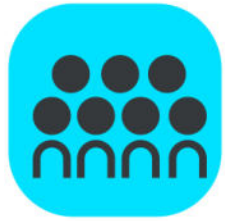
$$17 + 4$$



Work carefully, and show $17 + 4$ using the quick ten drawing on your personal white board. Then, check your work with your partner.

Student B
 $17 + 4 = 22$





Concept Development

$$17 + 4$$



Let's compare Student C's work and Student D's work. Did they solve the problem in the same way? What similarities and differences do you notice? Turn and talk to your partner.

Student C

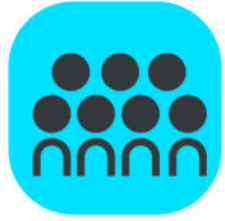
$$17 + 4 = 21$$

10 7 $7 + 4 = 11$
 $11 + 10 = 21$

Student D

$$17 + 4 = 21$$

3 1



Concept Development

$$17 + 4$$

They both used number bonds.

Student C

$$17 + 4 = 21$$

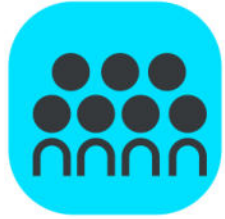
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

3 1



Concept Development

$$17 + 4$$

They used number bonds but broke apart different numbers. Student C added the ones first. Student D made the next ten.

Student C

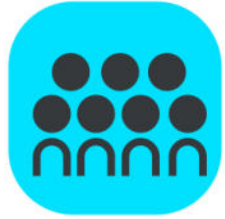
$$17 + 4 = 21$$

10 7 $7 + 4 = 11$
 $11 + 10 = 21$

Student D

$$17 + 4 = 21$$

3 1



Concept Development

$$17 + 4$$



Turn and talk to your partner about which student work best shows the tens.

Student C

$$17 + 4 = 21$$

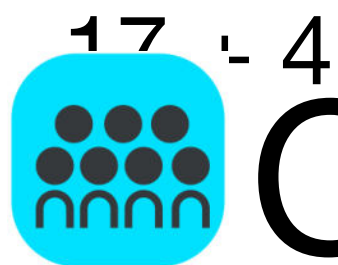
$\swarrow \searrow$
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

$\swarrow \searrow$
3 1



Concept Development



You might have said
Student D shows the
tens the best because I
can see that $17 + 3 = 20$
and that is 2 tens.

You may also have said
Student C shows the
tens the best because I
can see that 17 is 10
and 7. I see the 10 in 17.

Student C

$$17 + 4 = 21$$

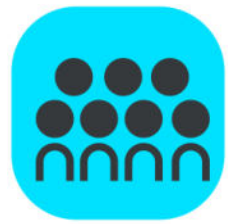
$\swarrow \searrow$
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

$\swarrow \searrow$
3 1



Concept Development



$$17 + 4$$

Can both students' work be correct, even though they broke apart different numbers?

Student C

$$17 + 4 = 21$$

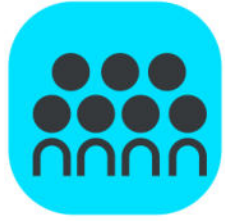
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

3 1



Concept Development



$$17 + 4$$

What is a compliment you can give to each of these students?

Student C

$$17 + 4 = 21$$

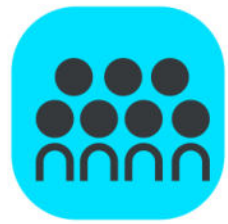
$\swarrow \searrow$
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

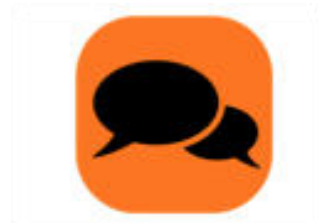
Student D

$$17 + 4 = 21$$

$\swarrow \searrow$
3 1



Concept Development



$$17 + 4$$

They drew correct number bonds. Student C added the ones together first. She clearly showed her two steps by writing both addition sentences.

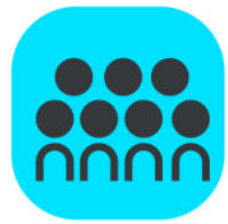
Student D made the next ten from 17. He did a good job breaking apart 4 into 3 and 1 so that he could make 20 with 17 and 3.

Student C

$$\begin{array}{r} 17 + 4 = 21 \\ \swarrow \searrow \\ 10 \quad 7 \end{array}$$
$$\begin{array}{l} 7 + 4 = 11 \\ 11 + 10 = 21 \end{array}$$

Student D

$$\begin{array}{r} 17 + 4 = 21 \\ \swarrow \searrow \\ 3 \quad 1 \end{array}$$



Concept Development



$$17 + 4$$

What are some ways they could improve their work?

Student C

$$17 + 4 = 21$$

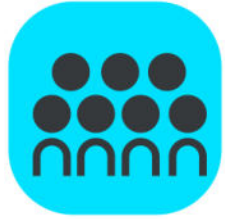
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

3 1



Concept Development



$$17 + 4$$

Student D could have written two addition sentences to show how he got 21.

Student C

$$17 + 4 = 21$$

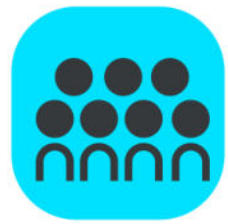
$\swarrow \searrow$
10 7

$$7 + 4 = 11$$
$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

$\swarrow \searrow$
3 1

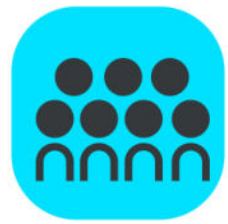


Concept Development

19 + 5



It's your turn to solve a problem. You may use any method to solve, but you must show your work. When you are finished, swap your work with your partner and study it. Give them a compliment and a suggestion about how to improve her work.

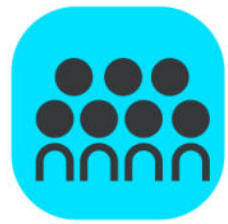


Concept Development

$$19 + 5$$



Which student work best helps you not have to count all?

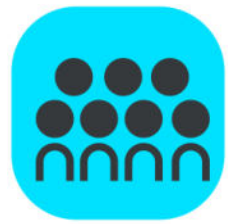


Concept Development

$$19 + 5$$



The number bond, because I counted on. Also the arrow way, because I got to the next ten and counted on.

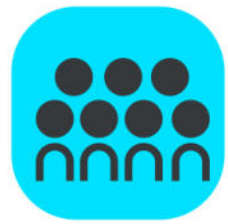


Concept Development

$$19 + 5$$



Good thinking! Why does the quick ten allow you to count all?

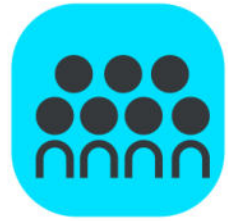


Concept Development

$$19 + 5$$



The drawing shows all the numbers, so I can count them all instead of counting on.

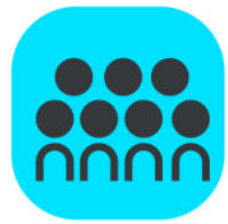


Concept Development

19 + 5



How is the student work shown different from
your partner's work?

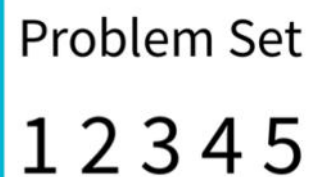


Concept Development

$$19 + 5$$



My partner drew the quick tens. My partner drew circles and Xs for the ones. My partner bonded a different number. My partner started with a different number to get to 20 using the arrow way.



Lesson 18 Problem Set 1•4

1. Each of the solutions is missing numbers or parts of the drawing. Fix each one so it is accurate and complete.

$$13 + 8 = 21$$

C

XXXXXXXXXX

2. Circle the student work that correctly solves the addition problem.

$16 + 5$

C

$$16 \xrightarrow{+3} 20 \xrightarrow{+2} 22$$

d. Fix the work that was incorrect by making new work in the space below with the matching number sentence.

Problem Set

1 2 3 4 5

Problem Set



A STORY OF UNITS

Lesson 18 Problem Set

1•4

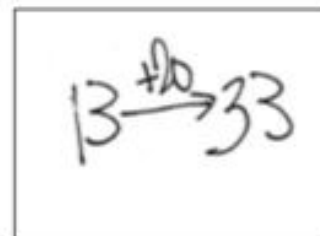
3. Circle the student work that correctly solves the addition problem.

$$13 + 20$$

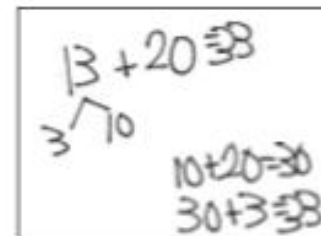
a.



b.



c.



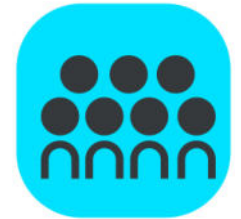
- d. Fix the work that was incorrect by making a new drawing in the space below with the matching number sentence.

4. Solve using quick tens, the arrow way, or number bonds.

$$17 + 5 = \underline{\quad}$$

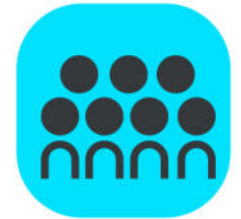
Share with your partner. Discuss why you chose to solve the way you did.

Debrief



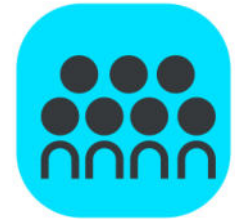
Look at Problem 2. What did you do to fix the student work?

Debrief



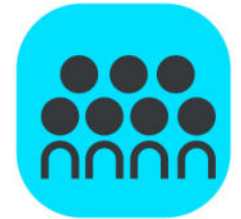
Look at Problem 2(b). What suggestion do you have for this student so she can improve her work?

Debrief



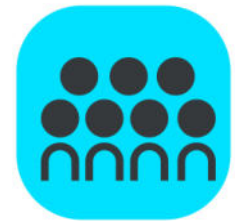
Look at Problems 3 and 5. In both problems, we added ones to ones. In the answer, why did the tens stay the same in Problem 3 but then changed in Problem 5?

Debrief



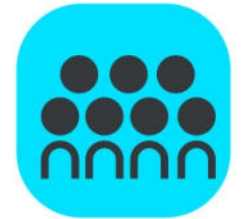
Look at Problem 3(a). How can you help this student improve?

Debrief



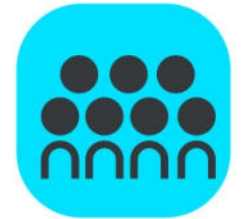
Compare your work on Problem 4 with your partner. Did you solve the same way? Do you think her way was easier or harder to solve? Explain why.

Debrief



Which student work best helps you not count all?

Debrief



How did today's fluency help you to be successful with the lesson?

Exit Ticket



A STORY OF UNITS

Lesson 18 Exit Ticket

1•4

Name _____

Date _____

Circle the work that correctly solves the addition problem.

$$17 + 9$$

a.

$$\begin{array}{r} 17 + 9 \\ 3 \quad 6 \\ 17 + 3 = 20 \\ 20 + 6 = 26 \end{array}$$

b.

$$\begin{array}{r} 17 + 9 \\ \hline 20 + 5 = 25 \end{array}$$

c.

$$\begin{array}{r} 17 + 9 \\ 17 \xrightarrow{+3} 20 \xrightarrow{+6} 26 \end{array}$$

- d. Fix the work that was incorrect by making a new drawing in the space below with the matching number sentence.