Making 10, 100, and 1,000
Building on Basic Facts Grades 1 and 2

Students start with basic facts (such as 4 + 6) and extend them to 40 + 60 and 400 + 600, using model drawings to see how similar these facts are. They apply the idea that 10 tens and 100 are the same.

Part 1: Making 10 and 100 is fully written out with examples and worksheet.
Part 2: Making 10 and 1,000 follows the same principles as Part 1. A worksheet and examples are provided.

The next page is a sample warm up that can be written on the board or copied for students. We cover 4 areas, which prepares them for the 4 quadrant warm up of the upper grades. It's spaced a little differently to accommodate the format of the 2nd Grade CST Released Test Questions .

Warm Up

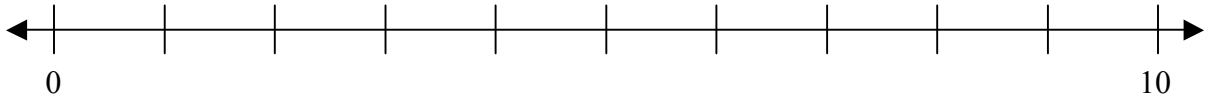
4 + 3 = 7

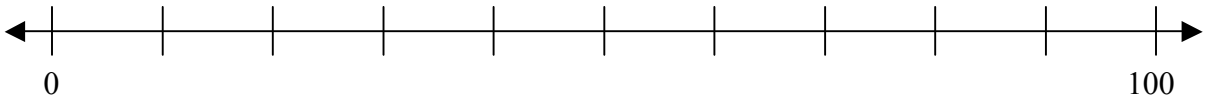
A **7 + 3 = 10**

B **7 – 4 = 3**

C **2 + 5 = 7**

D **10 – 3 = 7**





Sums of 10

Warm Up Debrief

#1 CST Released Test Question: Read aloud just as CST. **"Which of these can be used to check the problem in the box?"**

4 + 3 = 7

A **7 + 3 = 10**

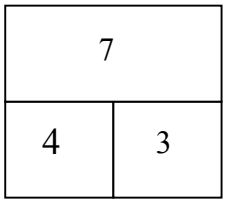
B **7 – 4 = 3**

C **2 + 5 = 7**

D **10 - 3 = 7**

Students can share which they would choose and why. One way to help students see how 7 – 4 = 3 is the inverse of 4 + 3 = 7 is the part-part whole model.

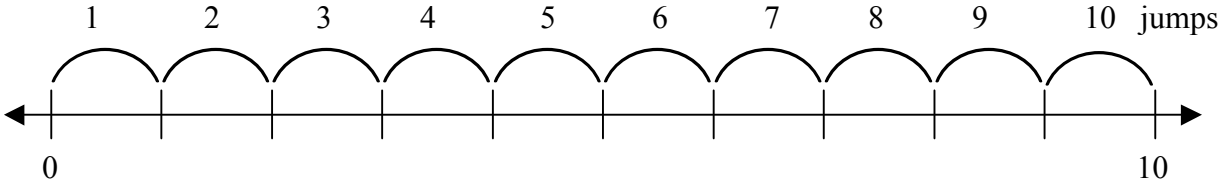
Let's put **4 + 3 = 7** in this part- part whole model. Is 4 a part or the whole? What are we putting it together with? (3) That's the other part. What do we get when we put them together? (7) That's the whole, or total.



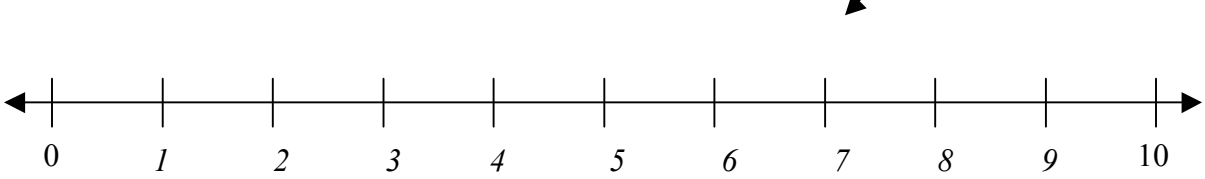
Which of the answer choices also go with this picture? (Try each one the students choose.)

Extension: Which other 2 answer choices are opposites? Which would go in the same part –part whole bar model?

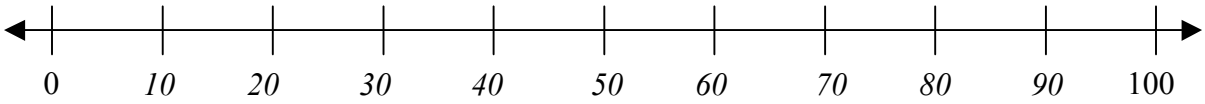
#2: "Take a look at our first number line. We have 0 on the left and 10 on the right. Let's count the number of jumps between 0 and 10.



If 0 is on the left, and 10 is on the right, and there are 10 jumps, what is each jump worth? (1) Let's try it out….1, 2, 3, ….10. Yes, you are correct.



#3: Now we have 0 on the left and 100 on the right. We still have 10 jumps. How much is each jump now? (Often students will give 1 as an answer.) Okay. Let's try 1. Count…1, 2, 3, 4, 5, 6, 7, 8, 9, 100!!?? Does that sound right? Share with your partner another answer….Show me on your fingers what you think each jump is worth. (Try their answers and prove them correct or incorrect.



#4 Sums of 10. We are going to work with addends, or numbers, that add up to make sums of ten. For example: 5 + 5 makes ten. I'm going to add that to the list. You can also have 3 addends. For example, 4 + 4 +2 = 10. (4 + 4 makes 8, and 8 + 2 makes 10, so…4 + 4 +2 = 10.) I'm going to add that to the list also. Share with your partner all the ways you can make sums of 10. You can have 2 addends, 3 addends or even 4 addends.

List the ways students came up with on the board for reference during the lesson. This is also an opportunity to practice the commutative property of addition.

Sums of 10

5 + 5	4 + 4 + 2
9 + 1	4 + 2 + 4
1 + 9	7 + 2 + 1
8 + 2	6 + 2 + 2
2 + 8	4 + 3 + 3
7 + 3	5 + 4 + 1
3 + 7	
6 + 4	
4 + 6	

Part 1: Making 10 and 100

(After Warm Up)

Today we are going to work with larger numbers. You know how to add numbers to make 10. Today, we're going to add numbers to make 100, too.

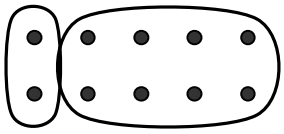
Take a look at the two pictures below. Remember that each dot (●) counts as one, and each rod counts for 10.

Think: What is the same about each of the pictures? What is different about the pictures?
Share with your neighbor your ideas. (Then take individual ideas.)
So…one picture has dots, or ones. The other picture has rods, or tens. That's different.
How many ones in the first picture? (10—or let's count)
How many tens in the second picture? (10—or let's count)
So…they both have 10 objects. Do they have the same number of rows? (Yes)
The difference is the **value** of the objects. **Value means how much something is worth.** One picture has ones, and the other has tens.
What is the total value of the first picture? (10)
What is the total value of the first picture? (count by 10s…100)

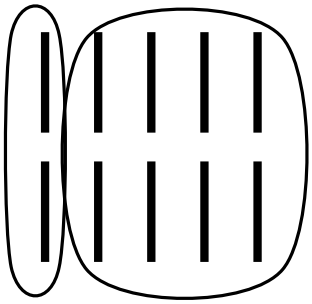
Okay. Let's move on. Let's start with the ones. If I circle a group of 2 and a group of 8, what would my equation be? (2 + 8 = 10) Draw on your worksheet and write the equation, just like my paper.

Now look at the second picture. Could you make the second picture have the same kind of groups as the first picture? How many tens would I circle first? (2) How many in the second group? (8) What would my equation be? Would it be 2+ 8 = 10? (no) No, because the second picture has tens, not ones. So…What would be my equation? Share with your partner. (Take a quiet hand)….20 + 80 = 100.

2 + 8 = 10

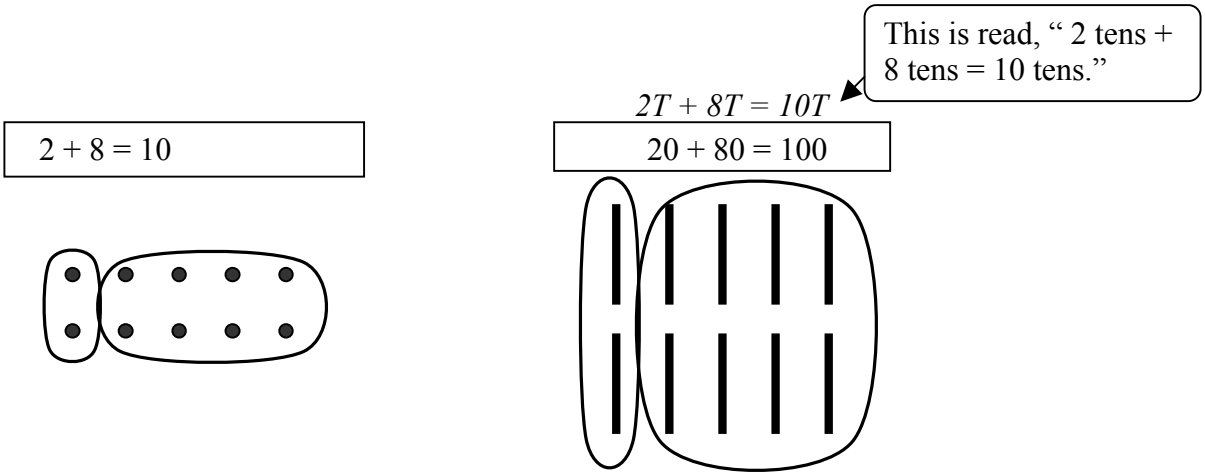


20 + 80 = 100



Are you ready for a challenge? We are going to write algebra equations. Algebra is what you do when you get older, but I think you're ready. In algebra, we use letters to stand for numbers. In our second picture, we're going to write a second equation with letters.

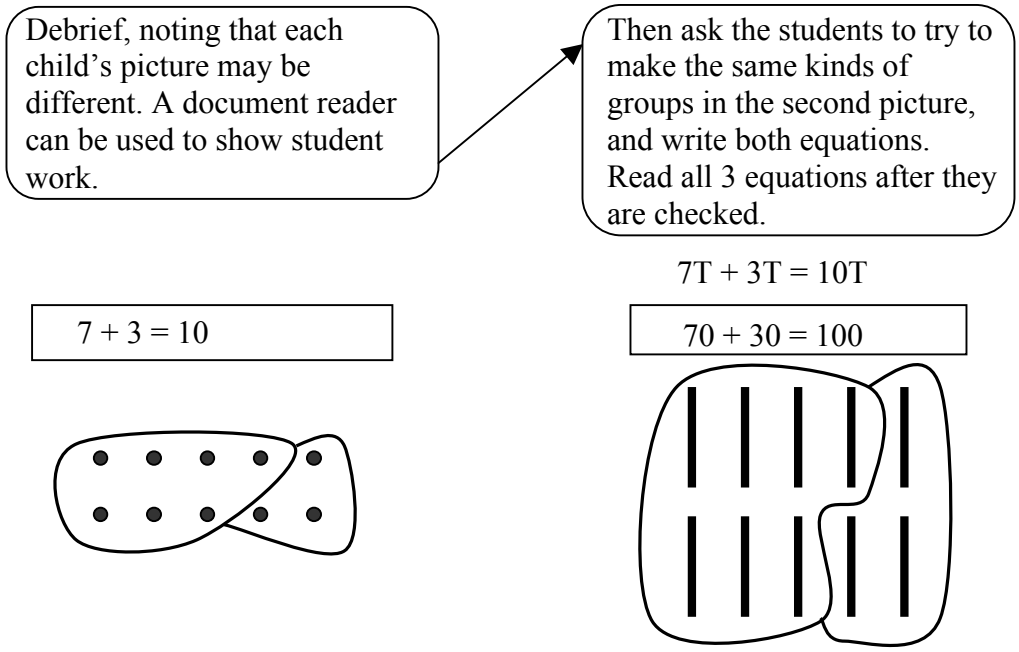
Instead of 20, we are going to write 2T. The T stands for tens. 20 is equal to 2 tens, right? The next part of our equation is 80. How many tens in 80? (8). So what will we write for 80?(8T) Finally, how many tens in 100? (10…may need to clarify) So…for 100 we will write 10 T.



Let's read both equations together… 20 + 80 = 100 and 2 tens + 8 tens = 10 tens.

Think for a second. Why is it 10 tens and not 100 tens? Share with your partner. (There are not 100 tens. Remember we counted them. There are only 10 tens. The value of 10 tens is 100.)

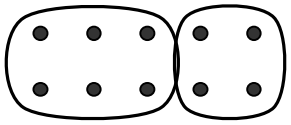
Let's move onto our second example. This time, I'm going to write the equation, and you circle the groups that go with the equation. The first equation is 7 + 3 = 10.



Now for our You Try. I am going to write the first equation, and you will draw the groups for the first picture. Then you will draw the groups and write both of the equations for the second picture. The equation is: 6 + 4 = 10.

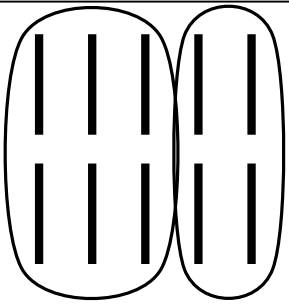
Debrief:

6 + 4 = 10



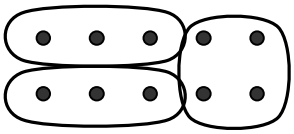
6T + 4 T = 10T

60 + 40 = 100



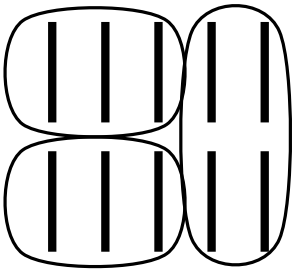
Once students complete the you try successfully, they can make up their own equations. This can include equations with 3 and 4 addends. A second blank worksheet can be given, so the students can try many of their own ideas. Example with 3 addends:

3 + 4 + 3 = 10



3T + 4T + 3T = 10T

30 + 40 + 30 = 100



<u>Part 2: Making 10 and 1,000</u> Apply the same idea to making 1,000. See attached worksheet and examples (Making 10 and 1,000)

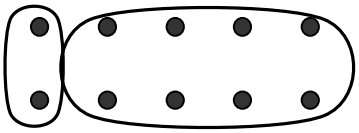
(Completed Worksheet)

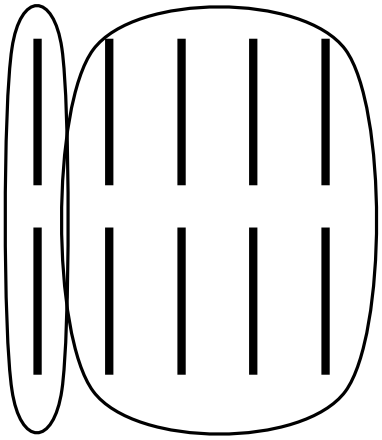
Making 10 and 100

2T + 8T = 10T

2 + 8 = 10

20 + 80 = 100

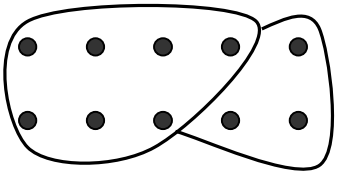


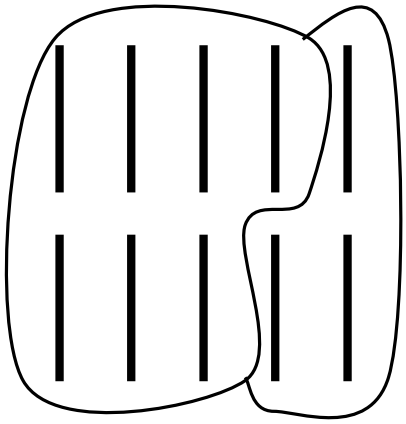


7T + 3T = 10T

7 + 3 = 10

70 + 30 = 100

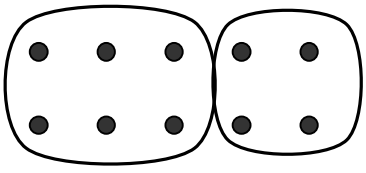


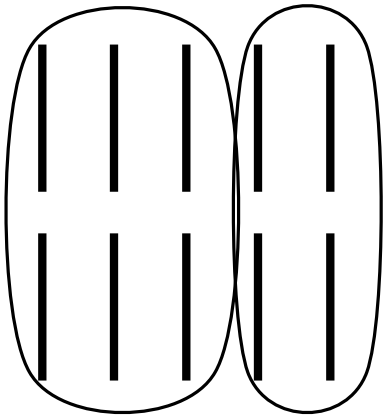


6T + 4T = 10T

6 + 4 = 10

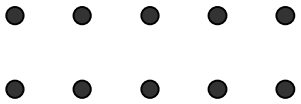
60 + 40 = 100

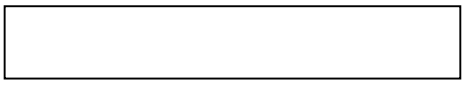


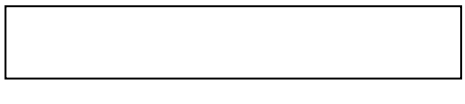


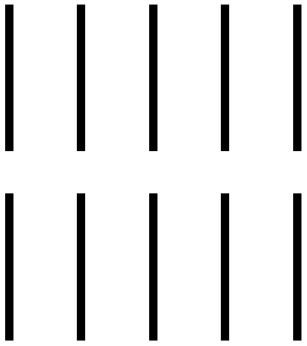
(Blank Worksheet)

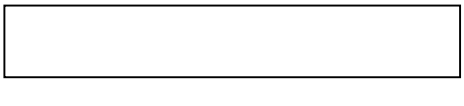
Making 10 and 100

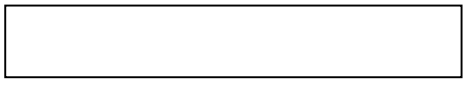


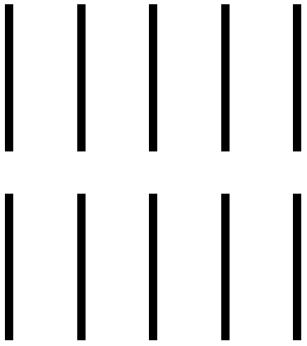








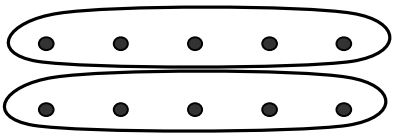




(Completed Worksheet)

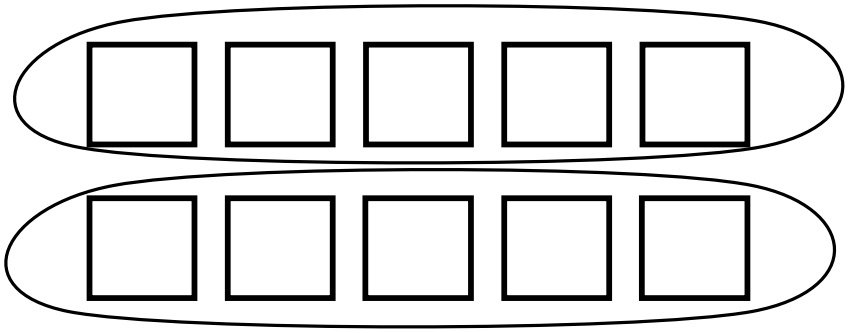
Making 10 and 1,000

5 + 5 = 10



5 H + 5 H = 10 H

500 + 500 = 1,000



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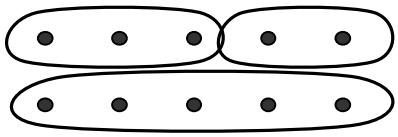
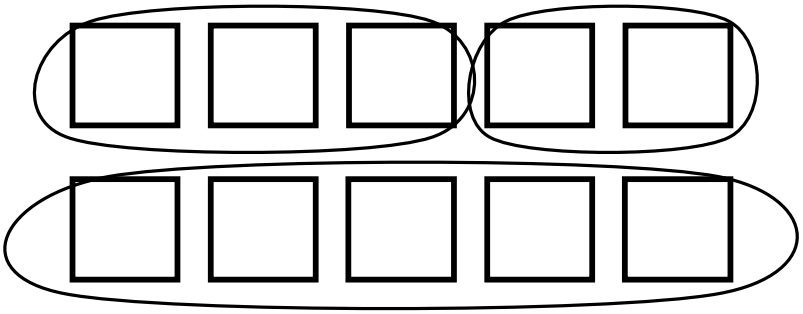
3 + 2 + 5 = 10



3 H + 2 H + 5 H = 10 H

300 + 200 + 500 = 1,000



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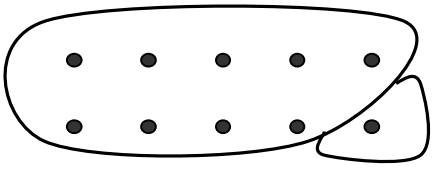
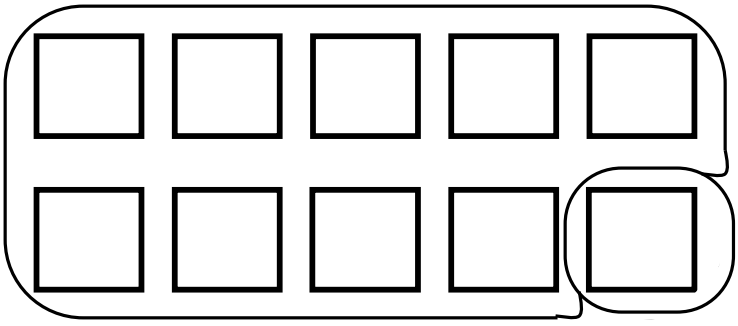
9 + 1 = 10



9 H + 1 H = 10 H

900 + 100 = 1,000



Making 10 and 1,000