

### 500 Hats

Ms. Alfonso's class is putting on a play about a Dr. Seuss book *The 500 Hats of Bartholomew Cubbins*. In the book, Bartholomew must take off his hat when the king passes by in a parade. When Bartholomew takes off his hat, another hat appears on his head. So he has one hat in his hand and another on his head. In the story, Bartholomew takes off his hat 500 times and 499 more hats appear on his head. To get ready for the play, the class must make 500 paper hats.

**Discuss**

1. Chris's group made 28 hats. Julia's group made 44 hats. How many hats did both groups make altogether?

**Julia's Strategy:**

Altogether we made 72 hats. I broke the numbers into tens and ones:  $20 + 40$  is 60, 8 and 4 is 12,  $60 + 12$  is 72. We made 72 hats.

$$\begin{array}{r} 28 = 20 + 8 \\ + 44 = 40 + 4 \\ \hline 60 + 12 = 72 \text{ hats} \end{array}$$

Julia

**Chris**

I can think about it better if I make a number line in my head. I think about starting at 44, moving forward 30 and then back 2, since 28 is 2 less than 30. I can write it like this.

**Chris's Strategy:**

I start at 44 and then add on 30, going by tens: 54, 64, 74. Subtract 2 and it is 72. 72 hats.

2. A. How did Julia use tens and ones to add?  
B. How did Chris use tens and ones?

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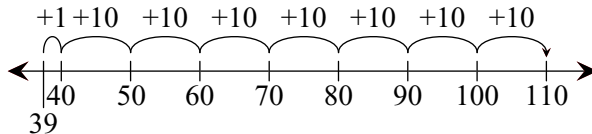
#### Questions 1–11

1. \* Discussion is included in the lesson.
2. Descriptions will vary. Possible responses:
  - A.\* Julia broke her numbers into tens and ones. Then she added the tens together and the ones together. Then she added the tens to the ones.
  - B.\* Chris counted by tens on the number line. He counted three times to add 30. Then he went back 2 because he was only supposed to add 28.
3. A. Frank started at 44. Julia's group made 44 hats.  
B. 28; Chris's group made 28 hats.  
C. Frank counted up 6 from 44 to 50 using ones. Then he counted on 20 using tens to get to 70. That's only 26 more and he needs 28, so he counted on two more ones to get to 72.  
D. Possible responses:  $44 + 28 = 72$  or  $44 + 6 + 20 + 2 = 72$ .

4. 22 hats
5. 16 hats
6. 73 hats
7. 52 hats
8. 33 hats
9. 297 hats
10. 203 hats

11. A–B. Strategies will vary. Possible responses:

$$\begin{array}{r} 39 = 30 + 9 \\ + 71 = 70 + 1 \\ \hline 100 + 10 = 110 \end{array}$$



C. Responses will vary.

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3. Frank is in Chris's group. He said, "It is easier for me to count up by tens if I can go 50, 60, 70. So I thought of a number line like this:"

- A. Where did Frank start? Whose group made that number of hats?
- B. How far is it from where Frank started to where he stopped? Whose group made that number of hats?
- C. How did Frank use tens and ones?
- D. Write a number sentence for Frank's moves on the number line.

**Solve the problems in Question 4–10 using a mental math strategy, a number line strategy, or Julia's strategy. Check your solutions using a second strategy. Be prepared to show or tell it to someone else.**

4. Chris's group wants to make 50 hats. How many more hats do they need to make?
5. How many more hats did Julia's group make than Chris's?
6. Mara's group made 48 hats and Jason's group made 25 hats. How many hats did the two groups make altogether?
7. How many more hats does Mara's group need to make to have 100 hats?
8. Suzanne's group made 67 hats. How many more hats does Suzanne's group need to make to reach 100?
9. On Monday the class made 151 hats. On Tuesday the class made 146 hats. How many hats did they make on both days altogether?
10. On Wednesday the class has to finish making the 500 hats. How many more hats will the class have to make?

✓ **Check-In: Question 11**

11. A. Solve  $39 + 71$  using a mental math strategy. Show your solution.
- B. Show how to solve the problem another way. You may use Julia's strategy, a number line strategy, or one of your own.
- C. Which strategy do you like best? Why?

Complete the *Use Tens and Ones* pages in the *Student Activity Book* to practice mental math strategies for solving problems.

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\*Answers and/or discussion are included in the lesson.

