

## Grade 4 Unit 6

### Lesson 4

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## Unit 6 Lesson 4: Numerical Patterns

### WU Which One Doesn't Belong: Stacked Squares (Warm up)

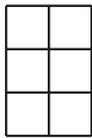
#### Student Task Statement

Which one doesn't belong?

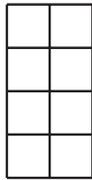
**A**



step 1



step 2



step 3

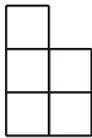


step 4

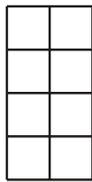
**B**



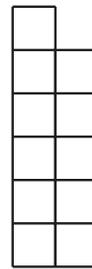
step 1



step 2



step 3



step 4

**C**

2, 4, 6, 8

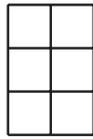
**D**



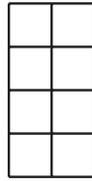
step 1



step 2



step 3



step 4



step 5

## 1 Count by 10 and by 9

### Student Task Statement

Andre's class is choral counting by 10 and then by 9. The left column shows the numbers they say when counting by 10.

1. Complete the right column with the first ten numbers the class will say when counting by 9.

What patterns do you notice about the features of the numerical patterns? Make at least two observations about each list of numbers.

counting by 10	counting by 9
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	

2. For the numbers in the "counting by 10" column, why do you think:
  - a. the digits in the tens place change the way they do?
  - b. the digits in the ones place are the way they are?
3. For the numbers in the "counting by 9" column, why do you think the digits in the ones place change the way they do? Explain your reasoning.

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## 2 Count by 99

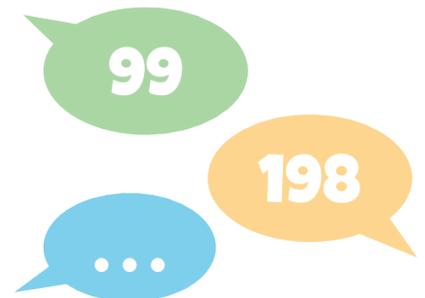
### Student Task Statement

Andre's class did a choral count by 99. Here are the first six numbers they said.

1. Study the list of numbers. Make at least 3 observations about features of the pattern.

counting by 99
99
198
297
396
495
594

2. Extend the list with the next four multiples of 99. Be prepared to discuss how you know what numbers to write.
3. Why do you think the digits in the numbers change the way they do?



## 3 Count by 15 (Optional)

### Student Task Statement

Elena counted by 15 and recorded the numbers she counted:

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15      30      45      60      75      90

1. Write the next four numbers she'd record if she kept going.
2. What patterns do you see? Describe as many as you can.
3. Choose one pattern that you noticed and explain why you think it happens.
4. Could 250 be a number that Elena calls out if she continued to count by 15? Explain or show your reasoning.