

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Halloween**  **Halloween**  **Halloween**  ...

The signboard repeats the word Halloween over and over with a jack-o-lantern between each word. What letter will be in the 100th place?

- Explain how you figured out your answer and how you know your answer is correct.


**Challenge:** What letter would be in the 1005th place? Use the back of this paper to explain how you figured out this answer and how you know your answer is correct.

Name: Answer Date: \_\_\_\_\_

Halloween  Halloween  Halloween  ...

The signboard repeats the word Halloween over and over with a jack-o-lantern between each word. What letter or symbol will be in the 100th place?

- Explain how you figured out your answer and how you know your answer is correct.

Halloween  = 9 letters + jack-o-lantern  
so the signboard repeats itself every 10 letters.

100 divided by 10 is 10 with no remainder.  
This means that on the 100th letter, the  
signboard finishes a Halloween 

**ANSWER:** The jack-o-lantern will be in the 100th place because the repeating pattern of 10 letters/symbols divides evenly into 100. No remainder means the pattern is completed so the last letter/symbol will be in the 100th place.

**Challenge:** What letter or symbol would be in the 1005th place? Use the back of this paper to explain how you figured out this answer and how you know your answer is correct.

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Halloween = 9 letters + jack-o-lantern  
so the signboard repeats itself every 10 letters.

1005 divided by 10 is 100 R5.

This means that on the 1000th letter, the signboard finishes a Halloween 

Then the signboard begins the pattern again and prints the first five letters of the pattern:

Hallo

**ANSWER:** An “o” will be in the 1005th place because there is a remainder of 5 which means that only the first five letters of the repeating pattern will be printed.