Consider the following problem:

This is a bridge of length 2: 

This is a bridge of length 3: 

How many beams are in each bridge? \_\_\_\_\_\_\_\_\_ (length 2)

\_\_\_\_\_\_\_\_\_\_\_ (length 3)

How many beams are in a bridge of length 5? \_\_\_\_\_\_\_\_ How did you arrive at that result? **[SHOW YOUR WORK OR DESCRIBE YOUR APPROACH BELOW. DISCUSS AT LEAST TWO DISTINCT WAYS.]**

How many beams are in a bridge of length 10? \_\_\_\_\_\_\_\_\_ How did you arrive at that result? **[SHOW YOUR WORK OR DESCRIBE YOUR APPROACH BELOW. DISCUSS AT LEAST TWO DISTINCT WAYS.]**

Ms. Dixon asked students to generate expressions that connect the number of toothpicks and its length (n).

Robbie generated the expression 3 + 4(n - 1).

Taye generated the expression n + 2n + (n - 1).

Josephine generated the expression 3n + (n – 1).

Are any of these expressions correct? If not, justify with sufficient evidence that they are not correct. If so, (a) write an explanation that connects each term with a specific part of the figure and (b) describe how each expression is distinct from the others.

Hint: You might benefit from the visualization of the bridge to get you started. Feel free to draw upon it as needed.

