

Name: _____ Hour: _____ Date: _____

Lesson 4.1: What's the average word length of a Beyoncé song?

Bey

BEYONCÉ

CRAZY IN LOVE

1. Quickly circle a random sample of 5 words. Write them below. How many letters in each word?
2. What is the average word length of your sample? _____.
3. Put your average on the dotplot on the white board at the front of the room. Copy the class dotplot below.
4. Find a new sample of 5 words using a random number generator. Put your average on the dotplot on the white board at the front of the room. Copy the class dotplot below.
5. How is the dotplot from #4 different than the dotplot for #3? Which do you think is a better estimator of the true mean word length?
6. What do you think the true mean word length is for "Crazy in Love"?
7. It is known that Beyonce wrote the lyrics for all of the Destiny's child songs. The average word length for these songs is 3.64 letters. Based on your samples, do you have good evidence that Beyonce did not write the lyrics for "Crazy in Love". Explain.

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Lesson 4.1 – Sampling Methods

Important ideas:

Check Your Understanding

1. In June 2008 *Parade* magazine posed the following question: “Should drivers be banned from using all cell phones?” Readers were encouraged to vote online at www.parade.com. The July 13, 2008, issue of *Parade* reported the results: 2407 (85%) said “Yes” and 410 (15%) said “No.”
 - a. What type of sample did the *Parade* survey obtain?
 - b. Explain why this sampling method is biased.
 - c. Is 85% likely to be greater than or less than the percentage of all adults who believe that cell-phone use while driving should be banned? Why?
2. To help eliminate bias, a reporter from *Parade* decides she will go out and ask people in person if they think drivers should be banned from using cell phones. She lives close to the local high school so she goes to the parking lot at 3:00 pm and asks the first 100 people she sees.
 - a. What type of sample did the reporter obtain?
 - b. Explain why this sampling method is biased.
3. How could *Parade* magazine avoid the bias described above?