**Goal:** The goal of this activity is for students to randomly draw words from an excerpt to estimate the mean length word count of the entire document.

**Materials:** This worksheet (You will want to print this activity one side).

**Directions:** Have students break up into groups of 2 or 3 to complete the activity.

Below find an excerpt from the Constitution of the United States, Article II, Section II

The President shall be Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into the actual Service of the United States; he may require the Opinion, in writing, of the principal Officer in each of the executive Departments, upon any Subject relating to the Duties of their respective Offices, and he shall have Power to grant Reprieves and Pardons for Offences against the United States, except in Cases of Impeachment.

He shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two thirds of the Senators present concur; and he shall nominate, and by and with the Advice and Consent of the Senate, shall appoint Ambassadors, other public Ministers and Consuls, Judges of the supreme Court, and all other Officers of the United States, whose Appointments are not herein otherwise provided for, and which shall be established by Law: but the Congress may by Law vest the Appointment of such inferior Officers, as they think proper, in the President alone, in the Courts of Law, or in the Heads of Departments.

The President shall have Power to fill up all Vacancies that may happen during the Recess of the Senate, by granting Commissions which shall expire at the End of their next Session.

1. Randomly select 10 words from the passage by closing your eyes and pointing to a spot on the page. Count the number of letters in the word that you chose, write it down below. Continue until you have picked 10 words. Find the average mean word length of your sample. **Answers will vary. This is one possibility.**

**Words: several, the, principal, executive, other, of, of, vacancies, power, not**

**Number of letters: 7 + 3 + 9 + 9 + 5 + 2 + 2 + 9 + 5 + 3 = 54/10 = 5.4**

**Average mean word length: 5.4**

1. Repeat the process, but instead randomly select 20 words from the passage by closing your eyes and pointing to a spot on the page. Count the number of letters in the word that you chose, write it down below. Continue until you have picked 20 words. Find the average mean word length of your sample. **Answers will vary. This is one possibility.**

**Words: require, established, other, subject, otherwise, are, offices, of, vest, in, and, the, relating, officers, the, actual, by, shall, other, to**

**Number of letters: 7 + 11 + 5 + 7 + 9 + 3 + 7 + 2 + 4 + 2 + 3 + 3 + 8 + 8 + 3 + 6 + 2 + 5 + 5 + 2 = 102/20 = 5.1**

**Average mean word length: 5.1**

Repeat the process, but instead randomly select 30 words from the passage by closing your eyes and pointing to a spot on the page. Count the number of letters in the word that you chose, write it down below. Continue until you have picked 30 words. Find the average mean word length of your sample. **Answers will vary. This is one possibility.**

**Words: the, power, are, they, Departments, shall, that, Ministers, public, each, the, the, other, President, be, opinion, in, of, law, for, Senate, proper, vest, have, and, or, supreme, relating, departments, cases**

**Number of letters: 3 + 5 + 3 + 4 + 11 + 5 + 4 + 9 + 6 + 4 + 3 + 3 + 5 + 9 + 2 + 7 + 2 + 2 + 3 + 3 + 6 + 6 + 4 + 5 + 3 + 2 + 7 + 8 + 11 + 5 = 150/30 = 5**

**Average mean word length: 5.0**

1. Compare your average mean word length for questions 1-3. Are they close together? Are they different? **Answers will vary.**

**The average mean word length that I found were all higher than the actual average mean word length of the document. My average mean word length did get closer the more words I chose from the document.**

1. Find two other groups and compare your results. How do their results compare to yours? Please explain. **Answers will vary.**
2. The actual mean length of the passage was \_\_\_\_\_\_\_\_. Were you close to this mean? If not, explain why you might be off. **There are 223 words and a total of 1043 letters so 223/1043 = 4.677.** **The actual mean length of the passage was 4.677. Explanations will vary.**