

**AP Statistics Summer Assignment**  
**Washington-Liberty High School**

**Assignment Due Date:      August 28, 2023**

Welcome to AP Statistics! This is probably unlike any course that you have taken. It is an applied mathematics class: one in which you will work with real-life data and scenarios. AP Statistics is a combination of Math, English, and Science. Communication skills are essential, and there is much more reading and writing than what you are used to in a math class. It is a course that combines both mathematical and verbal skills. You will be asked to make computations, but the analysis and interpretation of the calculations will carry greater weight than the calculations alone. This is a very rewarding course and a very important one. On the AP exam, you will be asked to write descriptive paragraphs and concluding sentences. You will have to explain the reasoning behind the method you use and your conclusions. Lastly, a graphing calculator such as the TI-84 is an essential tool for this course, as those calculators have many statistical features we take advantage of. It would be a good idea to obtain one if you don't have one already.

The purpose of this assignment is to refresh your prior statistical knowledge and skill and then put your knowledge and skill to practice by analyzing data using basic statistics. All of these skills will be used throughout the course. The assignment is due by our first day of class, August 28, 2023. Please reach out to us should you have any questions. We look forward to working with you on your statistical journey.

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## **Part 1 - Statistical Knowledge Refresher**

To review/refresh your prior statistical knowledge, you will complete the following modules in the Khan Academy Get Ready for AP Statistics:



Up next for you:

**Unit 1: Get ready for exploring categorical data**



**Unit 2: Get ready for exploring one-variable quantitative data**

To access the modules go to: <https://www.khanacademy.org/join/F6JNBG8N>

Follow prompts to enroll in the course. Use your first and last name to enroll in the course. Do not use your student id or a nickname.

The course code is **F6JNBG8N**

*NOTE:* All progress and completion in the modules is recorded electronically and can be viewed by the teachers. Don't panic when you see there are 49 assignments. Many of these are 1-2 minute videos or 4 short questions.

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## **Part 2 - Analyzing Data Activity**

**Questions 1 - 6 need to be completed and will be collected on the first day of class. You may complete this section by printing the assignment and writing or filling in the [Google Doc electronically](#) and then printing.**

Throughout AP Statistics, we will be analyzing data. For this activity, you will choose a snack category below, collect data on the category, and then use basic statistics to analyze and display the data. Circle or highlight one of the following; this is what you will be studying:

Cereal

Candy

Chips

Ice Cream

Soft Drinks

Complete the table on the next page by listing fifteen(15) items from the category you circled. Research their nutritional label to determine the number of calories, protein, and sugar for each of the fifteen items.

*NOTE:* Be careful of serving sizes. They should be about the same. If you're comparing a king size Hershey bar to a snack size Twix bar, you're looking at two significantly different quantities.

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**Item Category:**\_\_\_\_\_

1) Data Collection - complete the table by listing fifteen (15) items from the category you selected and record the number of calories, protein and sugar for each item.

Item Name	Calories	Protein(g)	Sugar(g)

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2) Calculate the **mean**, **median** and **mode** for the calories, protein and sugar of the items listed in your table.

	Mean	Median	Mode
Calories			
Protein			
Sugar			

3) Construct **boxplots** for each of the three items: calories, protein, and sugar.

**Calories**

**Protein**

**Sugar**

*Continued*⇒

**Short Answer - Respond to each question using complete sentences. Justifications need to be clear and explicit. Justify means defend/support your response with facts.**

4) Explain the meaning of the **mean** values in context of the scenario.

5) Explain the meaning of the **median** values in context of the scenario.

6) Explain the meaning of the **mode** values in context of the scenario.

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7) Based on your data and results, which item measure (calories, protein, sugar) has the greatest spread? ***Justify your answer.***

8) Based on your data and results, which item measure (calories, protein, sugar) has the smallest spread? ***Justify your answer.***

9) Using the measures of central tendency and boxplot displays, what ***conclusion*** can you draw about the nutritional value of the items you collected data for? ***Justify your answer*** - be sure to reference specific values and statistical facts not opinion.