

AP Statistics  
Summer Assignment Cover Letter

Welcome to Advanced Placement Statistics! I am so excited that you enrolled in this course! We are going to have a terrific year!

The purpose of the summer assignment is to acquaint you with the type of assignments in AP Statistics and to help you get a strong start to the school year. The work is intended to be completed *gradually* over the course of the summer. You will be assessed on these skills during the second week of school.

You should complete the questions on separate paper and *write in complete sentences*. AP Statistics requires a good deal of writing and reading. You *must* commit to reading your textbook on a near-daily basis and to writing out solutions to homework problems completely-- including constructing necessary graphical displays. These skills are vital to success in AP Statistics. Reading guides like this one will be assigned for each chapter throughout the year. It is very important that you complete them.

The AP Statistics test is on Thursday, May 16, 2019 in the afternoon. Information about registering for the AP exam will be distributed during the second semester.

In this past, this course has been offered as dual enrollment through Clark State. Be sure to listen for announcements at school regarding the process to sign up for this. *Enrollment in AP Statistics does not automatically enroll you in the Clark State courses!* Clark State is a separate enrollment process.

I will not be collecting anything from you the first day of school; however, it is a very good idea to get a head start on this course as we will be moving *very* quickly through the first chapter.

Answers to Check Your Understandings (CYU) and odd problems are in the back of your textbook.

Please join my "Remind" classroom so you can receive important updates on your mobile device. Send this text message to the number 81010: @f2752a32

Please email me or send me a Remind message if you have any questions: [tess.rivero@bss.k12.oh.us](mailto:tess.rivero@bss.k12.oh.us)

Summer Assignment:

- Complete the Chapter 1 Reading Guide (attached here and linked on my faculty page). I will collect this when you take the chapter 1 test which will be about 5-7 days into the school year.
- I strongly encourage you to work through the odd problems in chapter 1. All of the answers to these are in the back of the book. I will not collect these; however, I will be assigning some of these as homework during the first week or so of school. It would be a great idea to get a head start.
- Make sure you have one of the following types of graphing calculators: TI-83/84 or TI-Nspire.

I look forward to a terrific school year!

Mrs. Rivero

# Chapter 1: Exploring Data

## Key Vocabulary:

|   |  |   |
|---|--|---|
| individuals<br>variable<br>categorical variable<br>quantitative variable<br>two way table<br>marginal distributions<br>conditional distribution<br>association<br>distribution<br>range<br>spread<br>frequency<br>outlier<br>center | shape<br>skewed left<br>skewed right<br>symmetric<br>dot plot<br>histogram<br>stemplot<br>split stems<br>back-to-back stemplot<br>time plot<br>mean<br>nonresistant<br>$\sum$<br>$\bar{x}$ | median<br>resistant<br>quartiles<br>$Q_1, Q_3$<br>IQR<br>five-number summary<br>minimum<br>maximum<br>boxplot<br>modified boxplot<br>standard deviation<br>variance |
|---|--|---|

### 1.1 Displaying Distributions with Graphs (pp.2-21)

1. What is the difference between categorical and quantitative variables?
2. Check Your Understanding pg 5
  - 1.
  - 2.
3. What is the difference between a frequency table and a relative frequency table?
4. What type of data are *pie charts* and *bar graphs* used for?
5. Pie Charts can only be used when?
6. How is a two-way table setup?

Which is more informative when comparing groups counts or percents? Why?

7. Check Your Understanding pg 14

1.

2.

8. Explain the four step process to organizing a statistical problem.

9. What do you need to be cautious of when variables seem to have a strong association?

## 1.2 Describing Distributions with Numbers (pp.27-42)

10. How do you make a dot plot?

11. When examining a distribution, you can describe the overall pattern by its

S \_\_\_\_\_ O \_\_\_\_\_ C \_\_\_\_\_ S \_\_\_\_\_

*(Mrs. Anderson prefers the mnemonic CSSCO ... can you figure out what those letters stand for? Extra credit on this reading guide if you write the answer in here!)*

12. If a distribution is *symmetric*, what does its dot plot look like? (draw one!)

13. If a distribution is *skewed right*, what does its dot plot look like?

14. If a distribution is *skewed left*, what does its dot plot look like?

15. What is the difference between unimodal, bimodal, and multimodal data? (draw a dotplot for each)

16. How do you make a *stemplot*?

17. Check Your Understanding pg 31

1.

2.

3.

4.

18. When is it advantageous to split stems on a stemplot?

19. When is a *back to back stemplot* useful?

20. How is the *stemplot* of a distribution related to its histogram?

21. Check Your Understanding pg 34

1.

2.

3.

4.

22. What is a *histogram*?

23. When is it better to use a *histogram* rather than a *stemplot* or *dotplot*?

24. What is meant by *frequency* in a histogram?

25. What is the difference between a *bar-graph* and a *histogram*?

26. Define *outlier*.

27. Check Your Understanding pg 39

1.

2.

28. Check Your Understanding pg 41

1.

2.

3.

4.

**1.3 Describing Quantitative Data with Numbers (pp.50-69)**

1. In statistics, what are the most common measures of center?
2. Explain how to calculate the *mean*,  $\bar{x}$ .
3. Explain how to calculate the *median*,  $M$ .
4. Explain why the median is *resistant* to extreme observations, but the mean is *nonresistant*.
5. In a symmetric distribution where are the mean and median in relation to each other?

What about in a distribution that is skewed?

6. What is the difference between “*average*” value and “*typical*” value?

7. Check Your Understanding pg 55

1.

2.

3.

4.

8. Explain how to calculate  $Q_1$  and  $Q_3$  and  $IQR$ .

9. When does an observation become an *outlier*?
10. What is the *five-number summary*?
11. How much of the data falls between each quartile?
12. How much of the data falls between Q1 and Q3?
13. Check Your Understanding pg 61
  - 1.
  - 2.
  - 3.
  - 4.
14. What does *standard deviation* measure?
15. What is the relationship between *variance* and *standard deviation*?
16. When does *standard deviation* equal zero?
17. What are the units for the standard deviation of a distribution?
18. Is *standard deviation* resistant or nonresistant to extreme observations? Explain.
19. Use a five number summary when...                      Use  $\bar{x}$  and  $s$  when...

20. Check Your Understanding pg 64

1.

2.

3.

4.