MDM 4U **Unit 4: Lesson 1-Characteristics of Data** Date: _____

Introduction

When studying Statistics, you are engaging in a Science that collects, organizes, and analyzes data.

- Data are collected using surveys, which are designed and administered appropriately.
    - In this unit, you will learn appropriate survey design and administration techniques.

- Survey data are then organized using statistical software (e.g., Fathom, Excel).
    - You will continue to use software to complete assignments in this unit as well as your culminating data project.

- Once organized, the data are analyzed using a variety of one-variable and two-variable analyses.
    - Thus far, you have worked with one-variable analysis techniques (applying measures of central tendency, measures of spread, normal/binomial distributions, normal approximation to the binomial distribution, and confidence intervals).
        - You will be introduced to one more method known as hypothesis testing.

    - In the next unit, you will be completing your learning of course material by studying two-variable statistical analyses and completing your culminating project.

Purpose

-to introduce you to the 'language' of statistics that will help you to characterize the data collected and analyzed.

Lesson Content

The lesson will be conducted using an interactive survey with built-in opportunities for discussion of key concepts and examples.

The interactive survey has been designed to introduce you to/consolidate your understanding of the following terms: *sample, population, cross-sectional study, longitudinal study, qualitative vs. quantitative variables, discrete vs. continuous data,* and *measurement scales—nominal, ordinal,* and *interval*.

Assignment

i)

a) Think of two variables, one that is qualitative and one that is quantitative.

- For the quantitative variable further classify it as discrete or continuous.
    - Be prepared to discuss your choices.

b) Give an example of a measurement (not already mentioned in our examples) for each type:

1) nominal
2) ordinal
3) interval

- Be prepared to discuss your examples. Note: If you're having difficulty developing your own examples, you are welcome to use your hand-held technology to research some example.

ii) From your textbook, complete p89 #3, 4, 5 (all aceg), 13.