

(A) Lesson Context

BIG PICTURE of this UNIT:	<ul style="list-style-type: none"> • How do we analyze and then make conclusions from a data set? (Math) • How do I present my data and the outcomes of my analysis? (Math) • How do I use data & statistics to make decisions? • How do I decide on the validity/reliability of my data? Of my analysis? Of my conclusions? Of my decision? 		
CONTEXT of this LESSON:	<p>Where we've been</p> <p>Using data & visual representations, present your current understandings of what Statistics is</p>	<p>Where we are</p> <p>How do we visually represent data?</p>	<p>Where we are heading</p> <p>How do I analyze and make conclusions from a data set, in whatever way this data gets presented?</p>

(B) Lesson Objectives:

- Describe data as either being qualitative (categorical) or quantitative (numerical)
- Introduce the idea that quantitative data can be either discrete or continuous
- Introduce different ways to organize & visually represent data → using dot plots, stem & leaf plots, frequency tables, grouped data, histograms/column graphs

(C) Describing Data

- Qualitative Data →
- Quantitative Data →
 - Discrete quantitative data →
 - Continuous quantitative data →

(D) Activity #1 – Organizing and Representing Data

Mr Santowski has two athletes competing in a 400m sprint and he needs to collect data in order to help the coaching staff decide which sprinter is the better of the two. Over the course of the training season, the two sprinters have had numerous time trial data collected and the results are listed below

Sprinter #1	57.54	55.23	59.32	58.42	58.21	56.37	57.41	56.10
	53.11	55.42	57.31	58.46	57.19	55.16	54.12	56.25
	54.26	55.71	54.70	53.89	56.25	54.68	53.19	53.82
	57.29	55.54	54.96	53.87	55.21	53.32	54.10	53.61
	55.49	53.15	54.64	55.91	57.80	54.48	53.93	55.12
	57.91	58.13	52.95	52.62	53.10	54.54	58.04	56.81

Sprinter #2	57.67	56.29	58.01	54.28	54.63	57.95	56.21	55.04
	55.45	57.96	53.82	57.31	56.19	54.67	56.91	53.43
	55.17	54.44	56.28	57.34	54.99	57.22	56.23	56.31
	53.52	55.20	54.83	54.96	57.03	54.05	54.27	53.61
	55.26	57.36	57.38	54.93	53.82	53.01	54.82	56.67
	55.93	57.21	57.58	56.91	55.33	58.11	54.96	54.60

To help with the data analysis from each experiment, your group will:

- Prepare a Stem and Leaf plot for each data set.
- Prepare a Frequency table for each data set.
- Prepare a Dot Plot for each data set.
- Prepare a Column graph by hand for each data set.
- Prepare a Column graph on EXCEL for each data set.
- Prepare a Column graph on your graphing calculator for each data set.
- Now you need to make a decision → who's the BEST?
- Now you have an opportunity to ASK QUESTIONS about the data, about the data collection, about the conditions, etc

(E) Homework

- From Haese & Harris Mathematics Textbook → Complete Exercise 5A, p 111, Q1 & 2.
- From Haese & Harris Mathematics Textbook → Complete Exercise 5B, p 116-7, Q1 – 6.