

## Chapter 2

### Analyzing Data:

The W's: **Who, What, When, Where, Why, How** help to add context for the data. Who, What and Why are needed, so that data can be analyzed. If the there are not present the data is not useful.

- Who: The Cases
- What: The Variables
- Why: Helps decide which way to treat the variables
- When: Time the experiment was done
- Where: Which areas was the experiment done
- How: In what ways was the experiment done

When collecting data people who answer surveys are respondents, people who take part in experiments are subjects/participants, but animals are experimental units.

**Variables:** In data, variables are characteristics recorded about each individual and often identify the WHAT of the data.

**Units** tell us how each of the values was measured:

- Distance, Mass, Time, Meter, Second, Temperature, Kilogram

**Categorical Variable:** When variables name categories and answer questions about how cases fall into those categories (Expressed through words or numerals).

**Quantitative Variable:** Variables in which the numbers act as numerical values. (Variables always have units).

### Example (Page 13):

Year	Winner	Country	Total Time	Avg. Speed	Stages	Total Distance	Starting riders	Finishing Riders
1903	Gairn	France	94.33	25.3	6	2428	60	21
1904	Cornet	France	96.05	24.3	6	2388	88	23
1905	Trousselier	France	112.18	27.3	11	2975	60	24
1906	Pottier	France	185.47	24.5	13	4637	82	14
1907	Petit-Breton	France	156.22	28.5	14	4488	93	33
1908	Petit-Breton	France	156.09	28.7	14	4488	114	36

Year: Quantitative, Winner: Categorical, Country: Categorical, Total Time(h/min): Quantitative, Avg. Speed(km/h): Quantitative, Stages: Categorical, Total Distance(km): Quantitative, Starting Riders: Categorical, Finishing Riders: Categorical