

**What am I learning today?**

**Main Ideas/  
Questions**

Warm-Up

**Notes**

**What margin of error is associated with a sample size of 3200?**

**In a sample 3200 HS Seniors, 2080 people responded with “yes” to “Are you ready to graduate?”. Write a confidence statement explaining the results of the survey.**

Sample Design

**Probability Sample** – A sample chosen by chance

**Sampling Frame** – A list of \_\_\_\_\_ from which we can draw our sample

Sampling Errors

**Sampling Errors** – Errors that are caused by the act of taking a sample. They cause the sample statistic to be different from the population parameter

**1) Random Sampling Error** – This error is caused by \_\_\_\_\_ in selecting a random sample. This type of error is included in the margin of error in the confidence statement

**2) Undercoverage** – Occurs when some groups in the population are \_\_\_\_\_ when choosing a sample

Examples

**What kind of error?**

a) Dr. Giles asked Freshmen and Juniors their opinions on the Cafeteria food.

b) 300 male students at Wheeler were asked their heights and a confidence statement was written about all teenage boys and their heights.

**Main Ideas/  
Questions**

Non-Sampling  
Error

**Notes**

**Non-Sampling Errors** – Errors \_\_\_\_\_ related to the act of taking a sample.

They can be present even in the population parameter

**1) Processing Error** – Mistakes in mechanical tasks such as doing arithmetic or entering responses into a computer

**2) Response Error** – When someone gives an \_\_\_\_\_ response (lying, forgetting, or just guessing at an answer)

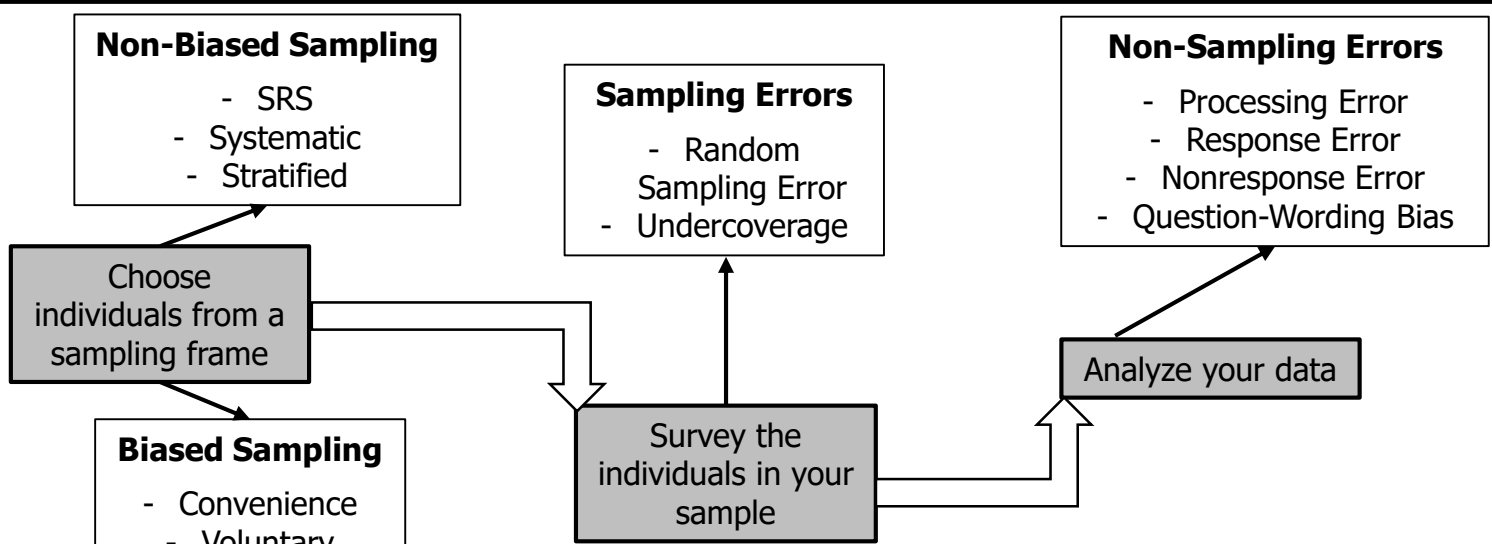
**3) Non-response** – Failure to obtain data from an individual selected for a sample. Most nonresponse errors happen because some individuals can't be contacted or they refuse to cooperate.

**4) Question-Wording Bias** – Sampling bias where the \_\_\_\_\_ of a question causes favoring for a certain outcome.

Examples

**What kind of error?**

- a) The subject lies about past drug use.
  - b) Johnny walked around Wheeler High School and surveyed students asking, "How dumb is it to eat vegetables?"
  - c) Data is collected by surveying people as they walk into the mall. Several participants refuse to participate.
- a) A typing error is made in recording the data.



**Gathering Data Through Surveys Flowchart**