MBF 3C Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

U3 D5 Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Bias**

When you personally conduct a survey or perform an experiment, you are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the data.

When you work with data from the Internet or other published materials, you are using a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Bias is an intentional or unintentional \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the data collected in a survey. A survey should be as bias free as possible.

**Types of Bias**

Sampling Bias: when the chosen sample does not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ represent the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

i.e. A survey asks students at a high school football game whether a fund for extra curricular activities should be used to buy new equipment for the football team or instruments for the school band.

Response Bias: factors in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the result.

i.e A group of professional football players are asked if they have ever taken banned performance enhancing substances.

Measurement Bias: external factors influence \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

i.e. A highway engineer suggests that en economical way to survey traffic speeds on an expressway would be to have police officers who patrol the highway record the speed of the traffic around them every 30 minutes.

Non-Response Bias: when the results are influenced because surveys are not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

i.e. You hand out surveys to your classmates to be returned to you next week.

Example: Identify the types of bias that might result from the following survey.

|  |
| --- |
| **Favourite Subject Survey**  ☺ Sponsored by the “Friends of Mathematics” Society ☺  Circle the most appropriate response.  Gender: Male Female    Grade: 9 10 11 12    My favourite subject is:  **MATH** English Science |

Re-write this survey in a way that does not present the bias you identified above.