Practice of Science - Notes and Terms

BIAS

If a researcher allows his personal thoughts and feelings get in the way of his ability to make accurate conclusions then the investigation is not valid or reliable.

FALSE ASSUMPTIONS

When an individual does not check facts and takes for granted that something is true an incorrect conclusion can be made.

Example: Assuming Bill and Monica were humans did not allow you to correctly conclude that they were fish that died from their fish bowl being blown over by the wind and breaking.

REPLICATE

When another person can copy a set of procedures and come to the same results. This is important in science because it means the results are true.

EX: If you were able to replicate the procedures to convert kinetic energy into thermal energy then you felt the paper clip get extremely warm or hot.

OBSERVATIONS

This is data we gather from our world using our senses. When we make observations we list what we see, feel, hear, see or touch but do not make explanations.

QUALITATIVE – observations that describe

QUANTITATIVE – observations that use numbers

EVIDENCE

Facts we use to determine something is true.

Primary Evidence – Evidence you gather through your personal observations for example, you know the earth is round from the shadow it makes on the moon causing the phases of the moon. You have personally seen this happen.

Secondary Evidence – Evidence you gather from someone else. Example you know the earth is round because of pictures take by astronauts