

Name:

Date:

Period:

_____ 7.4: Determine what type of study is most appropriate for a situation and state whether a study is biased:

Determine the type of study that is described below explain WHY your answer is correct. Choose between: **observational study, controlled experiment, and survey**

- a) Ms. Walker asks every 5th student walking into her room if they like doing science experiments.

Survey, she is asking for an opinion

- b) Mr. Velez takes notes on how students behave during 6th period. He does NOT disturb the environment in the room at all.

Observational study, he is not affecting the students in any way, just observing

- c) Ms. Soto wants to see if students perform better during 1st period if they are given extra breakfast at school. She gives 20 students a normal amount of breakfast and 20 students extra breakfast, then checks their grades after a trimester.

Controlled experiment, she has two groups and gives one the treatment to see its results

Determine if the studies below have any bias. If they do, explain WHY and explain how you could fix them to avoid bias:

- d) Mr. Mac asks students outside on the playground during lunch whether they like sports.

This is biased. Most students out on the playground probably enjoy sports. He should ask a sample of students at random, not only pick ones from outside!

- e) Ms. Browne wants to see if a certain fertilizer will help her plants grow. She applies the fertilizer to a small section in her garden that is in the shade.

Ms. Browne has introduced potential bias by not applying the fertilizer to a large enough piece of land, and she did not select it randomly. We will not know if the fertilizer has an impact or if the growth is affected by sunlight. She should select random parcels of land that are similar and larger, and should have a control group to test the effects