Name: _____ Date: _____

Observational Studies Experiments - Medium

Tell whether each study is an observational study or an experiment. Then identify the explanatory variable and the response variable.

1. Researchers review records for 40 tomato plants to see which ones get a new fertilizer. Then they compare number of tomatoes.
2. Researchers observe 120 students and record which ones listen to music while studying. Then they compare quiz scores.
3. Researchers observe 50 dogs and record which ones eat a high-protein dog food. Then they compare weight gain.
4. Researchers use a coin flip to decide which of 120 patients take a new allergy medicine. Then they compare sneezes per day.
5. Researchers survey 60 dogs and ask whether they eat a high-protein dog food. Then they compare weight gain.
6. Researchers use a coin flip to decide which of 200 adults drink green tea daily. Then they compare blood pressure.
7. Researchers use a coin flip to decide which of 40 seventh graders practice with a math app. Then they compare test scores.
8. Researchers review records for 150 teenagers to see which ones use a phone at bedtime. Then they compare hours of sleep.
9. Researchers randomly assign half of 120 teenagers to use a phone at bedtime. Then they compare hours of sleep.
10. Researchers use a coin flip to decide which of 50 teenagers use a phone at bedtime. Then they compare hours of sleep.

Name: _____ Date: _____

Fresh Math

Observational Studies Experiments - Medium

Tell whether each study is an observational study or an experiment. Then identify the explanatory variable and the response variable.

11. Researchers randomly assign half of 60 dogs to eat a high-protein dog food. Then they compare weight gain.

12. Researchers use a coin flip to decide which of 80 volunteers walk 20 minutes a day. Then they compare resting heart rate.

13. Researchers use a coin flip to decide which of 60 dogs eat a high-protein dog food. Then they compare weight gain.

14. Researchers review records for 60 seventh graders to see which ones practice with a math app. Then they compare test scores.

15. Researchers use a coin flip to decide which of 40 adults drink green tea daily. Then they compare blood pressure.

16. Researchers use a coin flip to decide which of 150 drivers use a hands-free phone system. Then they compare reaction times.

17. Researchers use a coin flip to decide which of 80 drivers use a hands-free phone system. Then they compare reaction times.

18. Researchers use a coin flip to decide which of 50 seventh graders practice with a math app. Then they compare test scores.

19. Researchers survey 40 students and ask whether they listen to music while studying. Then they compare quiz scores.

20. Researchers randomly assign half of 120 seventh graders to practice with a math app. Then they compare test scores.

Observational Studies Experiments - Medium - Answer Key

1. Researchers review records for 40 tomato plants to see which ones get a new fertilizer. Then they compare number of tomatoes.

   observational study; explanatory: the fertilizer; response: number of tomatoes

2. Researchers observe 120 students and record which ones listen to music while studying. Then they compare quiz scores.

   observational study; explanatory: listening to music; response: quiz scores

3. Researchers observe 50 dogs and record which ones eat a high-protein dog food. Then they compare weight gain.

   observational study; explanatory: the dog food; response: weight gain

4. Researchers use a coin flip to decide which of 120 patients take a new allergy medicine. Then they compare sneezes per day.

   experiment; explanatory: the allergy medicine; response: sneezes per day

5. Researchers survey 60 dogs and ask whether they eat a high-protein dog food. Then they compare weight gain.

   observational study; explanatory: the dog food; response: weight gain

6. Researchers use a coin flip to decide which of 200 adults drink green tea daily. Then they compare blood pressure.

   experiment; explanatory: drinking green tea; response: blood pressure

7. Researchers use a coin flip to decide which of 40 seventh graders practice with a math app. Then they compare test scores.

   experiment; explanatory: the math app; response: test scores

8. Researchers review records for 150 teenagers to see which ones use a phone at bedtime. Then they compare hours of sleep.

   observational study; explanatory: phone use at bedtime; response: hours of sleep

9. Researchers randomly assign half of 120 teenagers to use a phone at bedtime. Then they compare hours of sleep.

   experiment; explanatory: phone use at bedtime; response: hours of sleep

10. Researchers use a coin flip to decide which of 50 teenagers use a phone at bedtime. Then they compare hours of sleep.

    experiment; explanatory: phone use at bedtime; response: hours of sleep

Observational Studies Experiments - Medium - Answer Key

11. Researchers randomly assign half of 60 dogs to eat a high-protein dog food. Then they compare weight gain.

    experiment; explanatory: the dog food; response: weight gain

12. Researchers use a coin flip to decide which of 80 volunteers walk 20 minutes a day. Then they compare resting heart rate.

    experiment; explanatory: daily walking; response: resting heart rate

13. Researchers use a coin flip to decide which of 60 dogs eat a high-protein dog food. Then they compare weight gain.

    experiment; explanatory: the dog food; response: weight gain

14. Researchers review records for 60 seventh graders to see which ones practice with a math app. Then they compare test scores.

    observational study; explanatory: the math app; response: test scores

15. Researchers use a coin flip to decide which of 40 adults drink green tea daily. Then they compare blood pressure.

    experiment; explanatory: drinking green tea; response: blood pressure

16. Researchers use a coin flip to decide which of 150 drivers use a hands-free phone system. Then they compare reaction times.

    experiment; explanatory: the hands-free system; response: reaction times

17. Researchers use a coin flip to decide which of 80 drivers use a hands-free phone system. Then they compare reaction times.

    experiment; explanatory: the hands-free system; response: reaction times

18. Researchers use a coin flip to decide which of 50 seventh graders practice with a math app. Then they compare test scores.

    experiment; explanatory: the math app; response: test scores

19. Researchers survey 40 students and ask whether they listen to music while studying. Then they compare quiz scores.

    observational study; explanatory: listening to music; response: quiz scores

20. Researchers randomly assign half of 120 seventh graders to practice with a math app. Then they compare test scores.

    experiment; explanatory: the math app; response: test scores