

Name _____ Date _____ Bell _____

Unit 1: Lesson 3- What are some types of investigations?

Vocabulary

1. Scientific Methods (page 24)-

2. Experiment (page 25 and 30)-

3. variable (page 31)-

4. Control (page 31)-



A Process for Science Page 24-25

1. What does every science investigation start with?

2. What kinds of things would a scientist observe and ask questions about?

3. What happens after the scientist asks a testable question?

4. What are the three types of investigations a scientist can choose from to conduct their investigation?

5. Which type of investigation is likely to be used by a chemist who studies how a substance changes state?

6. What is the last step a scientist does in the process of the scientific method?

7. What conclusion would you draw if each day you put out sunflower seeds and millet seeds in a bird feeding station, and when you returned the sunflower seeds were gone and the millet remained?

Explosive Observations Page 26-27



8. What is observational testing?

9. Why would a scientist choose to do observational testing and not one of the other methods?

10. Why do scientist use observational testing for the geysers in Yellowstone National Park?

11. What is a prediction?

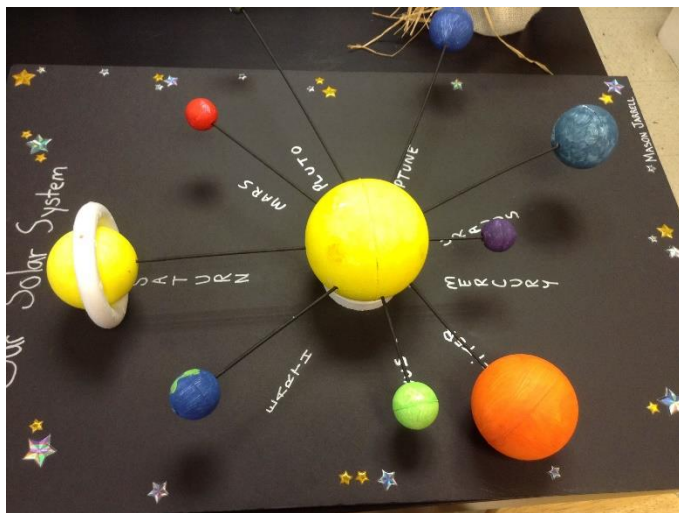
12. Why don't scientists perform experiments on Old Faithful?

13. Why do you think scientists use observational testing to study whale's behavior?

14. Which location would be best for conducting observational testing of whales: the shore, a boat, or a plane? Why?

15. What kinds of questions about whales can scientists answer using satellite transmitters?

Super Models Page 28-29



16. Why do scientists use models instead of conducting experiments or observational testing?

17. What are three types of models and an example of each one?

18. Why do scientists need to use models when investigating earthquakes?

19. What is an example of a physical model that is not found in these pages?

20. What questions could scientists answer with a computer model of the human body?

21. How would you draw a diagram to model how ocean animals get their food?

22. What models can you find in your school?

How to Excel in Experimentation Page 30-31



23. How do scientists begin to plan an experiment?

24. What does a scientist test in an experiment?

25. What is a hypothesis?

26. After you write your hypothesis, what is the next step in conducting an experiment?

27. When designing an experiment, how many setups do you need, and why?

28. How many variables do you change in an experiment?

29. What is a control?

30. In an experiment freezing water mixed with different substances, what should your control be?

31. Why is it important that only one variable is tested in an experiment?

How to Excel in Experimentation Continued Page 32-33

32. After you design your experiment, what do you do next?

33. Why should you repeat your experiment several times?

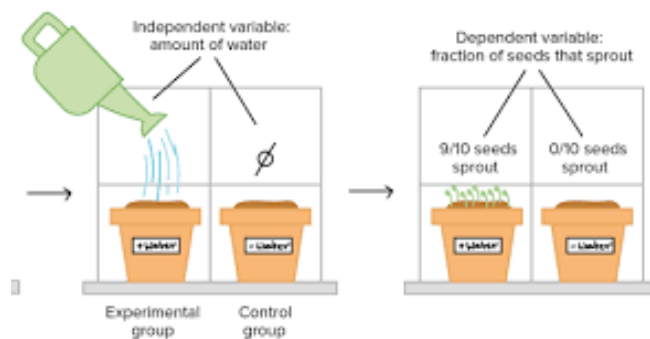
34. What should you do if you repeat the procedure and get different results?

35. How does getting very similar results each time affect your confidence in your results?

36. What should you do after you carry out your procedures?

37. How do scientists draw conclusions?

38. What happens if your hypothesis is not supported?



Data Displays Page 34-35

39. What do scientists do with all the data they collect from their investigations?

40. How do graphs, charts, and diagrams help scientists with the data they have collected?

41. What are four types of graphs and what are they used for?

42. If you want to display data on how many inches of rain your town receives each year, what display might you choose from? _____

43. How would you display data about the different kinds of pets owned by students in your class?

44. What other science questions can be answered with a diagram?

