

## Scientific Method & Experimental Design Review

Put the steps of the Scientific Method in order:

1. State The Problem
2. Gather Information
3. Make a Hypothesis
4. Design an Experiment
5. Record and Organize Data
6. Conclusion

7. What is the helpful hint you have been given to remember the steps in order?

Six Giant Hippos Eat Red & Orange Candy

8. Which step involves making observations? Gather information

9. Which step makes a prediction about what will happen and why? Hypothesis

10. Which step is stated in the form of a question? State the Problem

11. In what step will your hypothesis be accepted, rejected and your opinion about the experiment stated? Conclusion

12. Which group stays the same in your experiment? Controlled variables

13. Which group changes in your experiment? Independent variable

14. What change relies on another change to occur? Dependent variable

15. Quantitative data is based on what? Measurement & numbers

16. Qualitative data is based on what? Using your 5 senses

**Read the following experiment and identify the control, independent variable, dependent variable and state the conclusion:**

I wanted to test whether food coloring added to water will cause carnation petals to change color. I thought that it would. I placed one white carnation in a vase of regular water. Next to it, I placed one white carnation in a vase of water with blue food coloring. I observed the flowers for a week, noting the change. At the end of the week, the carnation in the blue colored water had indeed changed to a blue color!

17. Control - Carnation in regular water

18. Dependent Variable - carnation color change

19. Independent Variable - color of the water

20. Conclusion - Adding blue food coloring to water will change the color of the petals of a carnation