

Science Homework



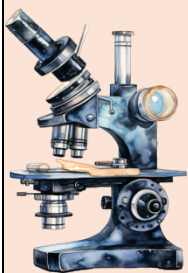
Week of: September 26th - September 29th

Sections 3A, B, C, D, E Home Learning

Completed Homework Packet due Friday, September 29th

Vocabulary Words:

observe
problem
hypothesis
experiment
results
conclusion
senses
classify
estimate
measurement
predict
inference
model
data
investigation
variable



Homework Directions:

Monday – No Homework

Tuesday – Read – Wonder! Test! Results!
Complete 5 questions based on what you learned about the scientific method.

Wednesday – Scientific Method Page 1

Thursday – Scientific Method Page 2

Friday – Study for Monday's Quiz



Reminders:

iPads need to be in class and fully charged everyday.

Wonder! Test! Results!

What is the scientific method? I bet you use the scientific method in your life without even realizing it. Have you ever wondered what would happen if you shook a can of soda? I bet you wondered, shook it, and found out (and likely got wet!). That's the scientific method! You wondered, you experimented, and you got results!

The scientific method is used all the time around us-and not just by scientists! It is a process that scientists use to gain knowledge about the world around us. They use the scientific method when they have questions or want to determine if something is true or not. The first step of the scientific method is to have a purpose. We do this by asking a question or making an observation about a problem. For instance, "Why did all the dinosaurs disappear?" or "What causes this mixture to bubble?" Scientists are naturally curious and want to learn all about their surroundings. Scientific discovery always starts with good questions about how things work. What are you curious about, or what have you seen that makes you wonder?

After asking questions, you should research the topic and find out all you can about it. Then, you will create a hypothesis (hahy-poth-uh-sis). A hypothesis is a possible answer to a question. When we observe, we are noticing everything about the problem. We often use our senses (though taste is not used). After observing, we have to predict a solution to the problem. We don't know if the possible answer is right until we have tested it.

That's when the fun begins! We have to test our hypothesis. This is called experimenting. During this time, we write down what materials we use and the procedures to test our hypothesis. If we write it down, step-by-step with lots of details, your friend can come along and do the same exact experiment you did to confirm your hypothesis. After you perform your experiment, you record your results. Sometimes scientists will do this in the form of a chart or a graph. Then, after looking at all the data, you compare your results to your hypothesis. This is called an analysis.

Then, you will determine the conclusion. Were you correct or incorrect?

It's okay to be incorrect, as many scientists were incorrect at one time or another. In fact, we learn a lot from our mistakes! That just means we have to change our hypothesis and prediction to something else and start all over again!

Wonder! Test! Results!

- 1.) What are the steps to the scientific method?

- 2.) Can you think of some ways you have used the scientific method in your life? For instance, you wondered if you liked spinach. You hypothesized you would not. You tested your hypothesis by tasting it. Your results were: You did not! Your hypothesis was right!

- 3.) How would you explain the scientific method to a younger sibling or a friend?

- 4.) Why is the scientific method important?

- 5.) What do you think life would be like without the scientific method?



UNIT TEST STUDY GUIDE

1. Classify science tools. Write the name of the science tools in the corresponding box.



Measuring Tools	Magnifying Tools	Safety Tools

2. Which tool do we use to measure volume?

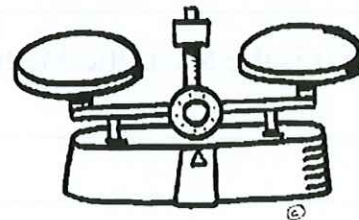
a)



b)



c)



3. The independent Variable is _____.

4. The dependent variable is _____.

5. The control variable is _____.

6. _____ is an if/then statement of what you think is going to happen or a testable prediction.

7. _____ is information gather during an experiment.

8. What is the first step of the scientific method?

9. Identify (IV) independent variable, (DV) dependent variable, and any (CV) control variables.

a) You give four sunflowers different watering with different concentrations of salt solutions. After a two-week period, the height is measured.

IV _____

DV _____

CV _____

b) Three redwood trees are kept at different humidity levels inside a greenhouse for 12 weeks. One tree is left outside in normal conditions. Height of the tree is measured once a week.

IV _____

DV _____

CV _____

10. How many steps are there in the scientific method?

11. What is the Scientific Method?

12. Read the two hypotheses. Think about what is the same and what is different about them.

Hypothesis a – An ice cube will melt in 30 minutes

Hypothesis b – If I place an ice cube in a room with a temperature of 20 F or 68 F, then the ice cube will melt in less than 30 minutes

What is the difference between the two hypotheses?
