

Science Homework

Name: _____

Week of: _____

Homeroom: _____

Week 1: Observations

This week in science, you will start thinking about what you would like to create your experiment about. This is an experiment that you will work on for the next 9 weeks, so it is important that you make a good choice from the start.

We will start by making observations. Scientists are always observing the world around them and devising experiments to test ideas they come up with. Throughout the week, make some observations about the topic (see the other side of this paper for ideas). Draw some (detailed & labeled) pictures, write some of your thoughts, list some questions you have about the topic, and jot yourself some notes. Next week, you will spend time researching your topic.

Topic: _____

Drawings	My Thoughts
Questions I Have	Notes

To help you narrow your focus for your observation, you may choose one of the areas below, or come up with your own (as long as it would fit under the main topic listed – make sure you choose from the

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correct grade level). There are many things you can observe, these are just a few ideas to get you started.

4th Grade Topics:

- Main Topic: **Living Things**
 - Plants:
 - Plant parts
 - What plants need
 - Adaptations
 - Seeds
 - Storing fruits/vegetables
 - Habitats/ecosystems
 - Animals (this may be harder to do)
 - What animals need
 - Adaptations
 - Habitats/ecosystems

5th Grade Topics:

- Main Topic: **Human Body**
 - Senses
 - Vision
 - Touch
 - Taste
 - Hearing
 - Smell
 - Functions
 - Breathing (Respiration)
 - Sleeping
 - Eating (Digestion)
 - Sweating
 - Heartbeat (Circulation)

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Week 2: Research

This week you will learn more about your topic by researching. You may use the internet, an encyclopedia, or library book. If you are having trouble finding information about your topic, let me know and we can work together to find something for you!

Part of researching, is recording your sources! This is so that you can give credit to the person who originally created the information that you are using. For your homework this week, complete the information below and list the sources (at least 2 – you do not need to use all 5 boxes) where you found the information (if it is a website, write N/A for page). Next week, you will use this information to create a testable question!

Topic: _____

Source: _____	Page: _____
Notes/Quotations	
Source: _____	Page: _____
Notes/Quotations	
Source: _____	Page: _____
Notes/Quotations	
Source: _____	Page: _____
Notes/Quotations	
Source: _____	Page: _____
Notes/Quotations	

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Week 3: Testable Question

This week you will create the question that you will test for your experiment! This is the MOST important step in creating a meaningful and fair test. We will take what you know about your topic and work to create a testable question.

The word “testable” just means that we can test the question. A question like, “Why do fingers wrinkle up in water?” is not testable. We don’t have the resources to test that (we can Google it, but that’s not the same as testing it). A better, testable questions could be “Do fingers wrinkle faster in hot or cold water?” That question is easily testable since we have access to fingers, hot water, cold water, and a timing device. Simply put, we are looking for questions we can answer by conducting an experiment.

Your job this week is to come up with 5 TESTABLE (and SAFE) questions that you have about the topic you chose. It is okay if all your questions don’t align completely with your research – that was to get you thinking about the topic. When you meet with me on Friday, we will discuss your choices. (Keep in mind, you will have 1 week to complete this, so growing things could get tricky).

Topic: _____

Question 1: _____

Question 2: _____

Question 3: _____

Question 4: _____

Question 5: _____

Mrs. Erickson’s Feedback:

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Week 4: Constants, Variables, and Controls

Part of creating a fair test is deciding on your constants and variables. A fair test is VITAL because it means that your results are accurate. If you are testing how well plants grow with different amounts of light, but you don't water them the same amount, it isn't a fair test – the different amounts of water might have actually caused the result rather than the amount of light!

- Constant
 - Definition: Part of the experiment that the scientist makes sure is the **same** throughout the experiment
 - Example: If you are testing how long different brands of light bulbs take to burn out, your constant could be using the same lamp for each test.
- Variables
 - Definition: The part of the experiment that the scientist controls or changes.
 - Example: If you are testing how long different brands of light bulbs take to burn out, the variables would be the different brands of light bulbs you use.
- Control
 - Definition: A sample in an experiment that the scientist doesn't alter or change (not all tests need a control sample/test, like the light bulb example)
 - Example: If you are testing which color of light attracts the most mosquitos, using an uncolored light would be the control.

Your job this week is to decide on your constant and variables. If your experiment can use a control, you will need to decide on that as well. Next week, you will use this information to plan the steps of your experiment!

Constant (What will stay the same in each sample/trial?):

Variable (What will you change each time?):

Control (What will your control?)

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Week 6: Hypothesis & Data

We are getting close to actually conducting our test! This week, you will make a guess about what you think will happen as a result of your experiment. This is called your hypothesis. It is okay if you guess wrong – if you always guessed correctly there would be no reason to actually do an experiment!

You will also need to decide how you will collect your information. Charts and graphs are often a good way to organize your information. Sometimes observations written in a journal are better. Think about the best way to record your information so that you can make a smart conclusion about what happens.

Next week you will be testing your experiment!!!

My Hypothesis:

I think _____ will happen because _____

Data Collection:

I'm going to use a:

___ Journal

___ Chart

___ Graph

Draw a layout of how this data will be organized (use the other side of this paper if you need more room).

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Week 7: Testing & Data Collection

This is the big week! You will actually be testing your experiment! Be sure to follow the plan you created, change **ONLY** the variable between each test, and record your data using the method you planned. Next week, we will look at the data you collected and come up with an answer to the question you created!

Use this paper to record your data from your experiment. You may use the back or staple additional papers.

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Week 8: Conclusion

Your experiment is not done just because your test is done! Now it is time to look at your information and decide how this experiment answered your question.

For your assignment this week, you will need to complete the information below and use it to write a paragraph summarizing your experiment. This should be very thorough and should fully explain what the problem was, what you did, what happened, and why you think you got the results that you did. Write your final paragraph on the back of this paper.

1. Your question:
2. Why you chose this question (based on your observations):
3. Your hypothesis:
4. Brief description of experiment (including your constant & variables):
5. Brief summary of the data you collected:
6. Your idea of WHAT the data tells you (list specific examples):
7. Whether your hypothesis was correct:
8. Why this was (or was not) a fair test:

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Week 9: Presentation

For the final part of this experiment, you will present your findings to the class. Part of being a scientist is sharing your findings so that others can build upon and learn from your experiences. In class this week, you will create a webcast of your conclusion using the green screen. You will also post your experiment on your webpage.

There is nothing from home that is due this week. 😊