

Week 1: Introduction



Boom! Boom! Every time you hear fireworks, physical science is involved. What about cooking and baking? Yes, that's chemistry. Did you know that to make your shampoo, toothpaste, or soft drink, a chemist was involved?

Have you ever wondered why an airplane stays in the air but people cannot? Physics, another branch of physical science, can help you answer that question.

In this course, we will also study the earth sciences of geology, oceanography, meteorology, and astronomy.

A world of opportunities, careers, and excitement awaits you as you embark on the journey of physical science!

Week 1: Lesson 1

To Do: Get Organized

1. Read the entire Lesson Plan Guide that is located at the beginning of this file. Make sure you have downloaded the textbook and/or bookmarked links for this class. You may also use the link below to access the lessons.
 - To add a bookmark, navigate to the lessons page of the course:
<https://schoolhouseteachers.com/teachers/science-teachers-2/physical-science-lessons-2/>
 - Scroll down and look for the “Bookmark Me” section in the right-hand sidebar. If you click the triangle arrow beside “Default Collection,” it will list the collections you have saved. If you would like to add a collection, click the “New Collection” button to set it up. Then select “Add to Collection.”
 - To access this bookmark in the future, select “Member Dashboard” from the top menu bar underneath the SchoolhouseTeachers.com web address. Select the bookmarks tab from the menu and then the correct collection on the left sidebar. Your bookmark will appear on this page, linking you directly to the course.
2. Set up your notebook with four sections: Experiments, Chemistry, Physics, Earth Sciences. Even if you use the fillable PDF version, there may still be notes to take or papers to file in your notebook.
3. Print several copies of the Scientific Experiment Sheet and place them in your notebook behind the Experiments tab.
4. Insert plenty of notebook paper behind the other tabs for use during the course.
5. Print or download the Lesson Plan for the course and fill in today’s date for Week 1, Lesson 1. Check each box that you have accomplished. You should do this as you complete every lesson in this course.

Week 1: Lesson 2

Definitions are vital to understanding everything. There are many definitions available, and it is important to get an accurate definition that makes sense to you and contains all the necessary components. Most lessons will require you to define words. Fill them in on the PDF and be sure to save your copy before you close the file. You may also write the terms and their definitions on notebook paper and insert behind the appropriate tab in your notebook. Be sure to study the terms for a few minutes each day!

To have a better understanding of what this course will cover, you will start by defining the main topics of this course. Use a dictionary or a trusted online source, and then compare your definitions to the ones in the answer key. If you use separate sheets of paper instead of the fillable PDF, add the pages to your notebook behind the appropriate tabs.

One online dictionary to consider is <https://www.merriam-webster.com/>.

Define the following terms.

First sheet of paper (file this behind the “Chemistry” tab in your notebook if using paper)

1. Physical Science

2. Chemistry

Second sheet of paper (file this behind the “Physics” tab in your notebook if using paper)

3. Physics

Third sheet of paper (file this behind the “Earth Sciences” tab in your notebook if using paper)

4. Earth Science

Compare and revise your definitions with the answer key.

Own it: You will master a concept a lot faster when you teach it to someone else. Explain to a parent the definitions of physical science and its three parts that we will be exploring in this course.

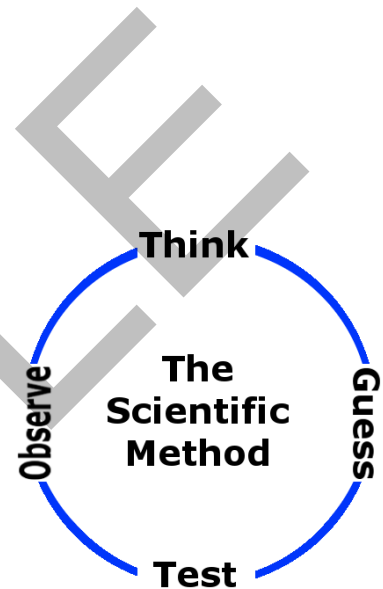
SAMPLE

Week 1: Lesson 3

Experiments in this course incorporate the following steps of the Scientific Method:

1. **Think:** Identify a problem or concept to test.
2. **Guess:** Form a hypothesis, which is an educated guess, about the results of the experiment. Base your hypothesis on information you have read or already know about the idea being tested.
3. **Test:** Perform an experiment to test your hypothesis.
4. **Observe:** Make observations and record results.
5. **Think:** Form a conclusion that explains the results. Answer the question, “Was my hypothesis correct?”

Did you notice that we ended at the same step where we started? (“Think.”) That’s because the Scientific Method is a never-ending process. Once scientists go through all the steps, they repeat them many times to prove or refine their results. We could actually add a step that says, “Repeat.” Or we could put the steps in a circle, like this illustration.



Experiment: Applying the Scientific Method

You will need:

- Scientific Experiment Sheet
- Toy car
- Piece of wood or cardboard, approximately 1.5–2 ft. long to use as a ramp
- Blocks or books to support the ramp
- Stopwatch
- Ruler or measuring tape

Note: If you are using the fillable PDF version of the Scientific Experiment Sheet, save a new copy to your computer folder. Title it “Week 1 Lesson 3 Experiment” or something similar to help you find it later.

Preparation

1. Create a ramp with a slope using the books/blocks and wood/cardboard.
2. Form a hypothesis about the length of time needed for the car to roll down the ramp. How do you think the slope of the ramp will affect the time it takes for the car to reach the end? Include this information in your hypothesis.

3. Be sure to fill in the “Materials,” “Procedure,” and “Hypothesis” sections on your Scientific Experiment Sheet.

Procedure

1. Allow the car to roll downward from the top of the ramp, starting the stopwatch with one hand as you release the car with the other hand.
2. Stop the stopwatch as soon as the car reaches the end of the ramp.
3. Record your results in the “Outcome” section of the Scientific Experiment Sheet.
4. Run the experiment at least two more times with different numbers of books/blocks supporting the ramp. Record your results.
5. Draw a conclusion based on the results of your experiment. Record the following in the “Conclusion” section of your Scientific Experiment Sheet.
 - Did you get the results you expected?
 - Did anything affect the accuracy of your time measurements?
 - Was there anything else that may have affected the results in some way?
 - Based on your prior knowledge, what scientific principle do you think was demonstrated through this experiment?
6. If using the PDF version, print your completed and saved Scientific Experiment Sheet. File it behind the “Experiments” tab in your notebook. *(Or save the file with “Week 1 Lesson 3” at the end of the file name.)*