



# 5<sup>th</sup> Grade Science

## Enrichment at Home Curriculum Sample

A Grade Ahead's rigorous, 16-week science enrichment program is designed to challenge your child to a higher academic standard. Our monthly curriculum includes science concepts that your child will see in school. Your child will learn and apply science concepts to real-world situations through experiments and develop strong critical thinking and analytical skills.

Each week will have an in-depth **lesson** (which we call Examples), **homework**, and **answers**. In these next pages, we offer a closer look at what our examples, homework, and answers offer as well as a specific sample of each.

Examples – Science: Grade 5

**Scientific Method**

**What is Science?**

When you think of the word "science" many different ideas probably come to mind. Maybe you see science as a large textbook filled with facts. Perhaps you think of white lab coats and beakers, or maybe you think of telescopes, stars, and outer space. Science is a broad term covering many diverse topics, and as such, is often defined in many different ways.

Science is both the process of discovering the world around us and the knowledge gained from these discoveries. Most importantly, science is a subject fueled by questions.

Questions are the basis of science, because they lead to discovery. If no one had ever asked about the lights in the night sky, we would have no knowledge that stars are balls of burning gas eight years from Earth. If no one had ever wondered how the human body works, we would have no knowledge of the heart, lungs, or brain.




Asking questions has allowed humans to land on the moon, discover antibiotics, and build computers. As long as questions continue to be asked, science will continue to lead us to more answers, discoveries, and inventions.

**B. The Nature of Science**

Ultimately, science is the search for explanations and understandings combined with efforts to improve and test these ideas. Some things are easily tested and some things may be trillions of miles away or billions of years in the past. This forces scientists to use **indirect evidence**, evidence that is gathered without having seen the object being investigated, along with **observations**. Observations are made using our five senses by recognizing and noting some fact to gather information about the world. Observations must be specific, accurate, and descriptive so that they mean the same to everyone. Scientists make observations, gather indirect evidence, build models, and make **inferences**, possible explanations or predictions based on an observation. Through experimentation and collaboration with other scientists, scientists are able to reach logical, well-supported conclusions about the natural world. After being tested and retested by other scientists numerous times, these conclusions may be accepted as a well-supported explanation of an event.

**Key Terms**

- indirect evidence
- observation
- inference
- theory
- scientific method
- hypothesis
- variable
- control
- data
- verification

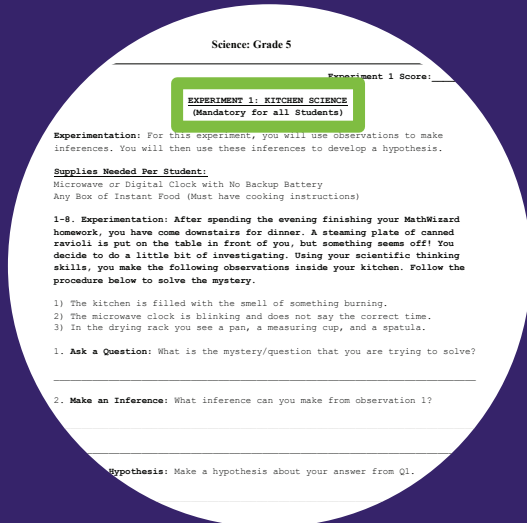


## Key Terms

Key Terms are available so that your child can easily find the important concepts of the week.

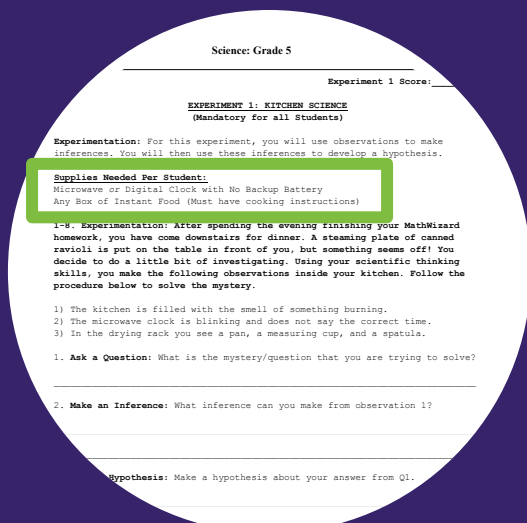


Lesson pages are titled "Examples – Science: Grade 5," answer pages are titled "Answers – Science: Grade 5," and homework pages are simply titled "Science: Grade 5."



## Experiment

The first day of homework will always include a science experiment so that your child can apply concepts from the lesson to everyday life.



## Supplies

We provide a list of supplies so that your child can conduct the experiment. Parent or teacher supervision is always recommended.



Each day's homework usually takes about 30 minutes to complete.

Science: Grade 5

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Fill out the following chart defining the steps of the scientific method. Use the chart to answer the following questions.

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graph TD
    A[Ask a Question] --> B[ ]
    B --> C[Conduct Experiment]
    C --> D[ ]
    D --> E[Report Results]
    D --> A
    D --> C
    
```

16-17. In your own words, describe what the scientific method is. Include an example of when you have used it in real life.

...start, so he wants to try to

# Homework

The rest of the homework works on your child's understanding of the specific topics that week. This will be through comprehension, critical thinking questions, and vocabulary exercises.

Answers – Science: Grade 5

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Day 1

1. An inference differs from an observation because it cannot be directly seen like an observation is. An inference is a judgment based on an observation.

2. a. O. B. I                                    3) A. L. M. O                                    4) A. O. B. I

5) a. I. M. O

6-7) The trash can at 1 PM is standing upright. The trashcan at 2 PM is on its side. The red flag on the mailbox at 1 PM is pointed upward. The red flag on the mailbox at 2 PM is moved downward.

8) **Answers may vary slightly. Examples are given.** The mailman could have come and removed mail from the mailbox and turned the red flag down. The trash truck could have come and emptied the trash and knocked it over.

**EXPERIMENT 1**

1) What happened in the kitchen this evening?

2) Something in the kitchen was burning.

3) **Answers may vary.** Someone burnt dinner because the timer stopped working.

4) The microwave clock is blinking and it says that the time is 12:00, which is not correct.

5) **Answers may vary.** Someone unplugged the microwave. Or, the power went out.

6) **Answers may vary.** Frying pan, spatula, measuring cups, measuring spoons, timer, etc.

7) We can infer that the dishes were recently used and then washed.

8) The list of supplies needed to make the box dinner are almost identical to the kitchen supplies that are in the drying rack.

9) **Answers may vary slightly.** Some boxed food was being cooked for dinner on the stove. The power in the kitchen went out for a moment, and the timer and clock on the microwave was reset. Because the timer did not go off, the food was burned. The dishes were washed afterwards.

10) **Answers may vary.** The original dinner was burnt while being cooked, so you were given canned ravioli for dinner instead.

**EXPERIMENT 2**

1) What is inside the mystery box?

2) **Answers may vary slightly. Examples are given.** Rolling, knocking, bouncing. \*Students should discuss with their teacher and classmates what object(s) they think are inside the box.

3) **Answers may vary slightly. Examples are given.** I think there is a marble and a piece of wood inside the box.

4) **DRAWING #1** on student's data form should resemble the figure below.

<p><b>Drawing:</b></p>	<p><b>Comments:</b> Sliding the box slowly allows you to make an educated guess about the shape of the berrier and approximate how many rolling object there are.</p>
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\*After students have drawn in **DRAWING #1**, they should put their drawings in a designated spot on the board. Once all students have put their drawings on the board, the teacher should facilitate a class discussion about the drawings and conclusions. Students should defend their report.

5) **DRAWING #2** on student's data form should resemble the figure below.

<p><b>Comments:</b> A marble is one marble made up</p>	<p><b>Comments:</b></p>
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# Answers

Answers are provided to check your child's homework and note which areas may need more work.