

# THE HISTORY OF SCIENCE

A Literature Approach  
FOR GRADES THREE THROUGH SEVEN

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# INTRODUCTION

## A Word on Faith and Science

“The heavens declare the glory of God, and the sky above proclaims his handiwork.” Psalm 19:1

Louis Pasteur once said, “A little science estranges man from God, but much science leads him back to Him.” Throughout this course, it is my hope that what you learn provides a window for a richer and more full understanding of our Creator. I have always found science to expand my wonder at the genius of God, his infinite creativity, his sense of humor, his capacity to continually show our wisdom to be foolishness. For centuries many have told us that science and faith are incompatible or that science is only of value when it provides proof of the existence of God. I find both these statements troubling and, frankly, lacking in imagination. This is the result of looking to faith and science for answers and beliefs they were not meant to provide. Faith, by its very nature, eschews positive proofs. Science, when pursued properly, cannot be turned into the handmaiden of faith. Yet, that does not mean that faith and science are incompatible. I firmly believe that when pursued using proper methodologies, science can expand our faith, deepen our appreciation for God. As Albert Einstein observed (echoing Pasteur) “The more I study science the more I believe in God.”

In writing this course, I endeavored to provide factual biographical accounts of the scientists, especially in regards to their faith. I have also included origin theory presented from three perspectives in order to help parents, teachers, and students discuss ideas of where we came from and why we’re here. Outside of that, I believe the science speaks for itself and is a powerful illustration of the amazing world we inhabit. I believe that it is not my place as the author of a history curriculum to provide faith-based observations. Each family has a responsibility for the spiritual education of their children and with that in mind, I have written this study to allow parents to educate their children according to their own convictions and consciences.

## Lesson 6

**Date:**

1. Read more about energy, work, and how simple machines, like levers and pulleys, save energy on pages 76-79 of *The Way Science Works*. Perform the three experiments and record findings in science portfolio. You will need the following items:

paint can	a coin
an old teaspoon	an old tablespoon
a screwdriver	old newspaper
multi-gear bike	gloves
colored tape	two blocks of wood
nail or gimlet	two screw hooks
four screw eyelets	candle
two lengths of strong string	
a load to be lifted (like a bag of oranges)	

### Simple Machines

Lever, gears, and pulleys are all simple machines that reduce the amount of work required to do a task.

2. Draw examples of the three classes of levers in your portfolio. Can you find an example of each type of lever in your home?

## Lesson 7

**Date:**

1. Read Chapter 5 of *Archimedes and the Door of Science* and perform the experiments on pages 62-65. Record findings in science portfolio under the heading Archimedes' Displacement Experiment. You will need the following materials:

pencil stub	scale with ounces
can of water	a wooden block
large can	small can

2. Define the following terms in the glossary of your science portfolio:

buoyancy	density	displacement
gravity	hydrometer	hydrostatic mass

## Lesson 8

**Date:**

1. Read about liquids on pages 18-25 of *The Way Science Works*. These pages will explain in detail the principles that Archimedes discovered when he had his "Eureka!" moment. Perform the experiments on these pages and record findings in science portfolio. You will need:

heat proof container	heat source	selection of liquids
thermometer that goes up to 680°F	heat proof gloves	tongs
several identical jars/glasses	selection of liquids	marbles of same size and weight
two beakers or jars	clear plastic soda bottle	knife

dirty water	large dish	filter paper/coffee filter
charcoal	sand	gravel
large jar	small jar	cold tap water
hot tap water	string	food coloring
modeling clay	plastic pen cap	paper clips
plastic soda bottle with lid		

## Lesson 9

**Date:**

- Read Chapters 6-7 of *Archimedes and the Door of Science*.
  - Discuss the Greek root of the word *kosmos*. Does this show how the universe was laid out in an orderly way?
- Using what you learned from your reading, define and record the following terms in the glossary of your portfolio.
 

cosmos	concentric circles	planets
parabola	ellipse	mathematics
trigonometry	geometry	
- Look up Colossians 1:16-17. Some scientists and researchers believe that these verses explain how everything in the universe is held together. From the largest galaxy to the microscopic proton, they believe that everything is held together by God. Note to King James Version readers, “consist” means in this context “held together” or “exist by”.
- Consult the chart on the next page and discuss how different scientists believe the world came into existence. Discuss the questions at the bottom of the chart with your parents and fellow students.

## Lesson 10

**Date:**

- On page 72 of *Archimedes and the Door of Science* you read about a very famous ancient Greek philosopher and scientist named Aristotle. Do some research on this remarkable man and record findings in portfolio.
- Color and paste picture of Aristotle on the *History of Science Timeline*.

## Lesson 11

**Date:**

- Read Chapters 8-9 of *Archimedes and the Door of Science*.
- Experiment with square, triangular, and cubic numbers. Record these three terms and their definitions in the glossary of your science portfolio.
- Continue to read about the different states of matter by reading pages 26-27 of *The Way Science Works*. Perform the experiment on page 27 and record findings in science portfolio. You will need the following items:
 

shallow dish	milk	two eye-droppers
food coloring	dish washing liquid	

## Lesson 19

**Date:**

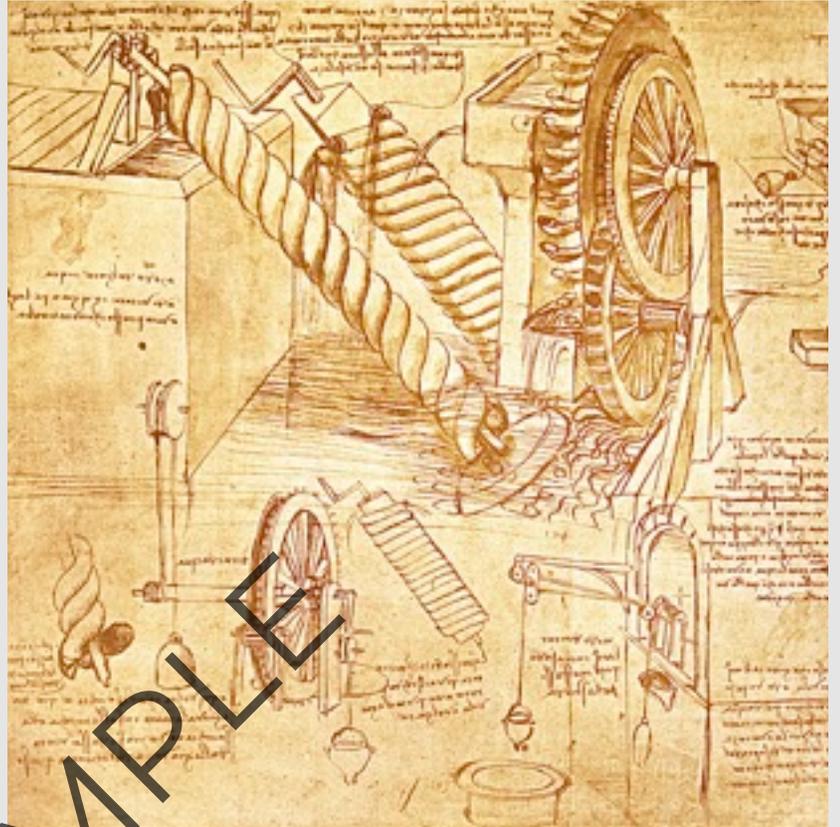
1. Read page 17 of *The Picture History of Great Inventors*.
2. In preparation for your reading, define and record the following terms in the glossary of your science portfolio:

city-state	perspective
rebirth	renaissance
notary	dimension
bombard	catapult
dissection	anatomical
three-dimensional	
3. Begin reading *Leonardo da Vinci* by Diane Stanley. Read the first 18 pages.
4. Da Vinci's ability to draw human bodies and his research into anatomy was unparalleled for his time. Try observing and drawing your hand. How difficult is it to accurately capture the muscles, sinews, creases in the skin, and all the dozens of little details?

## Lesson 20

**Date:**

1. Finish reading *Leonardo da Vinci*.
  2. One of da Vinci's war machines was an elaborate catapult. Try making a catapult yourself. It can be simple or elaborate. The following websites provide great instructions:
    - 15 Easy Catapults: [kidsactivitiesblog.com/55055/15-easy-catapults-to-make](http://kidsactivitiesblog.com/55055/15-easy-catapults-to-make)
    - Mini Trebuchet Catapult: [instructables.com/id/how-to-make-a-mini-trebuchet-catapult/](http://instructables.com/id/how-to-make-a-mini-trebuchet-catapult/)
    - Office Supply Catapult: [stormthecastle.com/trebuchet/office-supply-trebuchet.htm](http://stormthecastle.com/trebuchet/office-supply-trebuchet.htm)
- If you have trouble with any of the links, simply Google the terms listed above.



## Mirror Writing

Leonardo da Vinci wrote his notebooks in a sort of mirror writing, supposedly to protect the ideas he recorded in them. You can try mirror writing too! Try writing your name so that if you held it up to a mirror, it would read correctly. It's hard, right? To learn more about da Vinci's writing and try it out yourself, visit the following website:

[legacy.mos.org/sln/Leonardo/LeonardoRightToLeft.html](http://legacy.mos.org/sln/Leonardo/LeonardoRightToLeft.html)

# MODERN SCIENTISTS



Solvay Conference 1911 ~ Can you spot Marie Curie and Albert Einstein?

For more more information visit: [wikipedia.org/wiki/Solvay\\_Conference](http://wikipedia.org/wiki/Solvay_Conference)

## Lesson 31

**Date:**

1. Read page 22 of *The Picture History of Great Inventors*.
2. Blaise Pascal was a great inventor and scientist and he invented the first calculator! Today we are going to explore some of his discoveries concerning air pressure. Read pages 28-33 of *The Way Science Works*. Perform the experiments. You will need the following items:

2 small candles

shallow bowl

matches

narrow neck bottle

baking soda

vinegar

water

adhesive putty

jar with wide opening

funnel

small uninflated balloon

glass/mug

regular sized balloon

rubber bands

double-sided tape

straw

wooden board

cardboard

scissors

Record findings in portfolio.

## Lesson 32

**Date:**

1. As we read in *Along Came Galileo*, Galileo was considered the first modern scientist and he bridged the gap between the medieval and renaissance worlds and the world of modern scientific discovery. The year he died another scientist was born who would change everything. His name was Isaac Newton. Read page 23 of *The Picture History of Great Inventors* to learn a bit more about him. Begin a new section in your science portfolio entitled “Modern Scientists” and follow that with a section entitled “Isaac Newton, 1642-1727”.
2. Read page 23 of *The Picture History of Great Inventors*.
  - a. In science portfolio record Newton’s Laws of Motion as seen on page 23.
3. Begin reading *Isaac Newton, The Scientist Who Changed Everything*. Read pages 8-19.



Pascal's calculator

## Lesson 66

**Date:**

1. Finish reading *George Washington Carver*.
2. Research and write a report on Carver's unrelenting passion for education and his perseverance in overcoming the obstacles that he faced throughout his life. Copy report into the science portfolio along with a list of Carver's inventions.
3. Many of Carver's inventions required experiments in chemistry. Read pages 50-51 of *The Way Science Works* to learn more about chemical reactions and chromatography. Perform experiment on page 51 and record results in science portfolio. You will need the following items:

inks or food coloring

some glass jars

blotting paper

water

bulldog style paper clips

## Lesson 67

**Date:**

1. Read page 53 of *The Picture History of Great Inventors*.
2. Begin a new section in science portfolio entitled "Wilbur and Orville Wright".
3. Begin reading *The Wright Brothers, How They Invented the Airplane* by Mary Kay Carson. Read the Preface and Part One, pages ix-17.
4. Perform any of the activities in the section you read of *The Wright Brothers, How they Invented the Airplane*. Record findings in science portfolio. The activity on pages 14-15 is optional, so the materials are not listed below. You will need the following items:



## GWC: Man of Faith

George Washington Carver's faith was at the center of his understand of and fascination with nature. Use some of the following quotes in your report on his life.

"I love to think of nature as an unlimited broadcasting station, through which God speaks to us every hour, if we will only tune in."

"Our creator is the same and never changes despite the names given Him by people here and in all parts of the world. Even if we gave Him no name at all, He would still be there, within us, waiting to give us good on this earth."

"When I was young, I said to God, "God, tell me the mystery of the universe." But God answered, "That knowledge is reserved for me alone." So I said, "God, tell me the mystery of the peanut." Then God said, "Well George, that's more nearly your size." And he told me."

"All my life I have risen regularly at four o'clock and have gone into the woods and talked to God. There He gives me my orders for the day."

"Never since have I been without this consciousness of the Creator speaking to me....The out of doors has been to me more and more a great cathedral in which God could be continuously spoken to and heard from."

# SCIENTIFIC METHOD LAB REPORT

Question:

Hypothesis:

Materials:

Procedure:

SAMPLE

Observations:

Conclusion:

