

Project Option 1: Scientist Poster Project

Introduction

All throughout this unit, you are learning about scientists who made important discoveries in biology. Some of them, like Francis Bacon or Andreas Vesalius, helped shape the scientific method and our knowledge of the human body. Others, like Gregor Mendel or Michael Behe, showed us that creation is full of order and design. This project will give you the chance to research one of these scientists and create a poster that teaches others about their life and work.



Instructions

1. Choose **one scientist** from the unit.
2. Research using your notes, workbook, and any other reliable sources (books, encyclopedia, websites with parent guidance).
3. Create a **poster** that includes:
 - The scientist's name, dates, and picture or drawing.
 - Their most important discovery or contribution.
 - A short summary of how their work changed science.
 - A faith or worldview connection (quote, or how they pointed people toward or away from God).
 - A creative illustration, symbol, or diagram that represents their work.
4. Be neat, creative, and original.

Variables

- Not applicable (this is a research/creative project, not an experiment).

Rubric (20 points total)

- **Content (8 pts):** Includes accurate details about the scientist's life, work, and discovery.
- **Faith Connection (4 pts):** Clearly explains how the scientist's worldview connected to their science.
- **Creativity & Visuals (4 pts):** Poster is neat, eye-catching, and thoughtfully designed.
- **Effort & Completeness (4 pts):** Shows time, care, and attention to detail.

Project Option 2: Handwashing Experiment (Semmelweis Re-Creation)

Introduction

Dr. Ignaz Semmelweis was nicknamed the “Savior of Mothers.” In the 1800s, he discovered that when doctors washed their hands, fewer mothers died after childbirth. Many people thought his ideas were silly at first—but history proved him right! In this project, you’ll repeat a simple version of his experiment to see how handwashing changes what grows on bread.



Procedure

1. Wash your hands with soap and water. Touch one slice of bread with your clean hands.
2. Without washing, touch another slice of bread with dirty hands (touch a doorknob, table, or play outside first).
3. Seal each slice in its own plastic bag. Label the bags “Clean Hands” and “Dirty Hands.”
4. Place both bags in the same location (room temperature, out of direct sunlight).
5. Check the bread daily. Write down what you see (color, fuzz, size of spots, smell if allowed).
6. Keep observing for at least 7 days.

Variables

- **Manipulated Variable (what I change):** Whether the bread was touched with clean or dirty hands.
- **Responding Variable (what I measure):** The amount of mold growth on the bread.

Data & Notes

- Make a table with columns: *Day #*, *Clean Hands Bread Observations*, *Dirty Hands Bread Observations*.
- Optional: Sketch what the bread looks like each day.

Rubric (20 points total)

- **Experimental Setup (4 pts):** Correctly identifies manipulated and responding variables.
- **Data Collection (6 pts):** Daily observations are clear, organized, and complete.
- **Analysis (6 pts):** Written conclusion explains what the results show and why.
- **Neatness & Effort (4 pts):** Work is tidy and shows consistent effort.

Project Option 3: Pulse Investigation Project (Harvey's Circulation Connection)

Introduction

William Harvey proved that the heart pumps blood in a cycle through the body. You can test how your circulatory system works by measuring your pulse—the number of times your heart beats per minute. In this project, you'll measure your pulse under different conditions and see how it changes.



Procedure

1. Learn to take your pulse by placing two fingers on your wrist or neck. Count beats for 15 seconds and multiply by 4 to get beats per minute (bpm).
2. Record your pulse at rest (sitting quietly).
3. Do an activity (e.g., 30 jumping jacks, running in place for 1 minute, laughing with a sibling, praying quietly). Immediately record your pulse again.
4. Rest until your pulse returns to normal, and record how long that takes.
5. Repeat this on different days and at different times (morning, evening).
6. Make a table of your results and a graph showing pulse changes.

Variables

- **Manipulated Variable (what I change):** The activity done before measuring pulse.
- **Responding Variable (what I measure):** Pulse rate (beats per minute).

Data & Notes

- Create a table with columns: *Date*, *Activity*, *Pulse (bpm)*, *Recovery Time*.
- Draw a simple graph (bar or line) showing how pulse changes with different activities.

Rubric (20 points total)

- **Experimental Setup (4 pts):** Correctly identifies manipulated and responding variables.
- **Data Collection (6 pts):** At least 3–5 sets of measurements recorded accurately.
- **Graph & Conclusion (6 pts):** Graph clearly shows differences; conclusion explains why pulse changes.
- **Neatness & Effort (4 pts):** Work is organized and shows thoughtful effort.