



# Scientific Method 5<sup>th</sup> Grade

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## Step 1: Problem

- Choose a topic that you find interesting.
- Write your BIG question. Make sure you can investigate it by yourself.
- Research your topic using books, magazines, encyclopedias, information from professionals, and the internet.

## Step 2: Hypothesis

- A good (educated) guess about what you think the outcome of your experiment will be.
- "If     *[I do this]*    , then     *[this]*     will happen."

## Step 3: Experiment

- Write a step-by-step procedure
- Homework
  - Collect all the materials needed for your project.
  - Do the experiment at home with parent supervision to test your hypothesis.
  - Collect data.

The image shows a handwritten table titled "Ice Chart" on lined paper. The table has three columns representing different locations: "In Window", "In Shade", and "Near Vent". The rows represent time intervals: "start", "15 Minutes", "30 Minutes", and "60 Minutes". The data shows that ice melts fastest in the window and slowest in the shade.

|            | In Window               | In Shade                | Near Vent               |
|------------|-------------------------|-------------------------|-------------------------|
| start      | ice                     | ice                     | ice                     |
| 15 Minutes | ice with a lot of water | ice with a little water | ice with some water     |
| 30 Minutes | water                   | ice with some water     | ice with a lot of water |
| 60 Minutes |                         | ice with a lot of water | water                   |

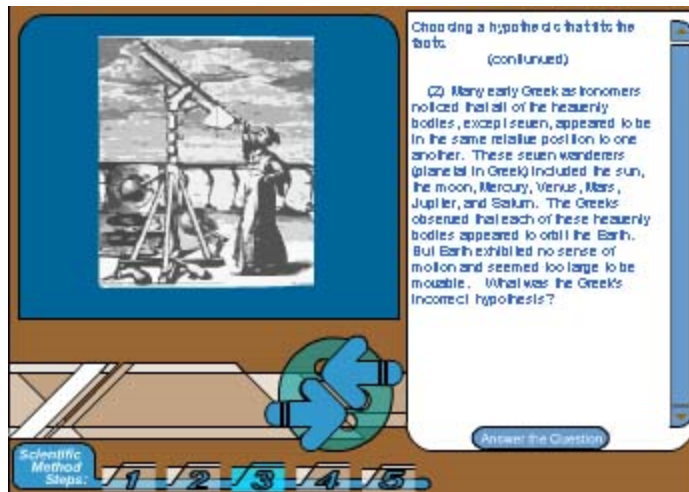
## Step 4: Observations

- Make observations and record data.
- Observations are only what you see, hear, or measure.



## Web Quest

- [http://aspire.cosmic-ray.org/Labs/ScientificMethod/sci\\_method\\_main.html](http://aspire.cosmic-ray.org/Labs/ScientificMethod/sci_method_main.html)
- <http://www.brainpop.com/>



Choosing a hypothesis that fits the facts.  
(continued)

(2) Many early Greek astronomers noticed that all of the heavenly bodies, except seven, appeared to be in the same relative position to one another. These seven wanderers (planets in Greek) included the sun, the moon, Mercury, Venus, Mars, Jupiter, and Saturn. The Greeks observed that each of these heavenly bodies appeared to orbit the Earth. But Earth exhibited no sense of motion and seemed too large to be movable. What was the Greeks' incorrect hypothesis?

Answer the Question

Scientific Method Steps: 1 / 2 / 3 / 4 / 5



BrainPOP SCIENTIFIC METHOD

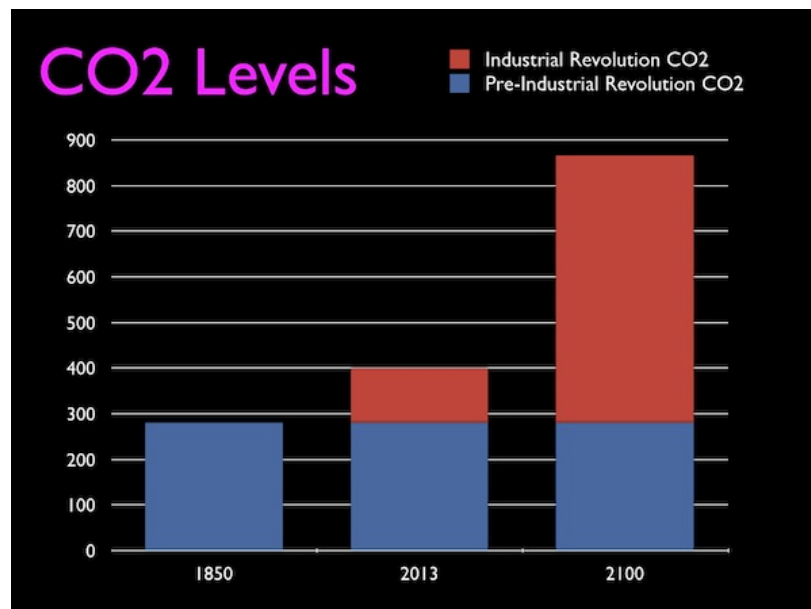
hypothesis

RELATED TOPICS

RELATED FEATURES

## Step 5: Conclusion

- State your conclusion.
- A conclusion is a summary that states your data.
- Organize your results on charts or graphs
- <http://nces.ed.gov/nceskids/createagraph/default.aspx>



## Report

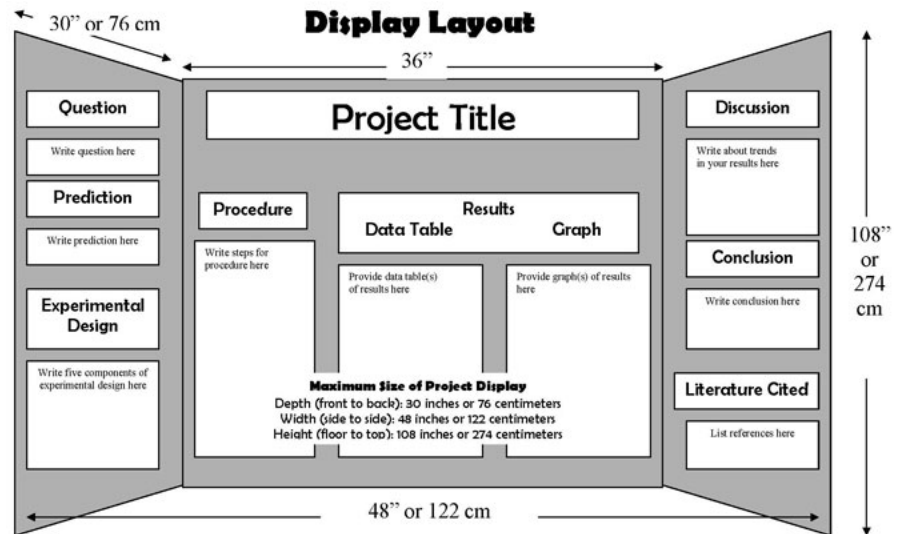
- Write a report that includes the questions, the hypothesis, the step-by-step procedure, and the results.





# Build a Display

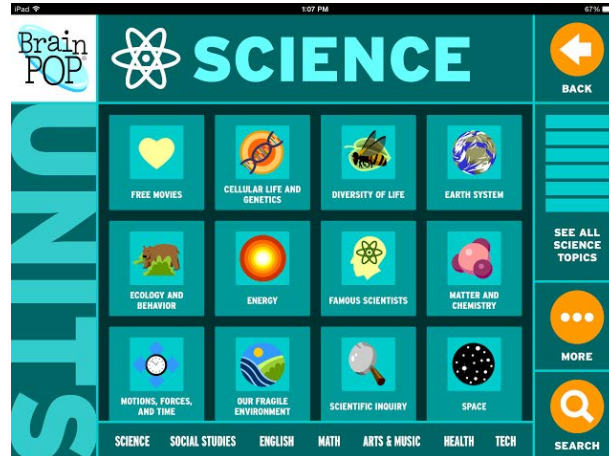
- Use Charts, graphs, photos, illustrations, neat lettering, and models of your experiments.
- Prepare an oral presentation to explain your project.



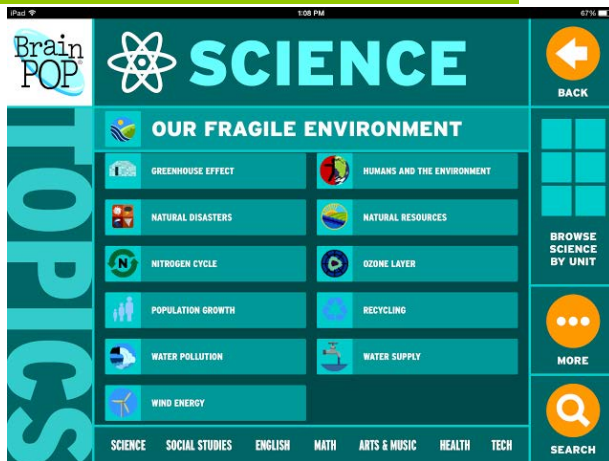
# Environmental App



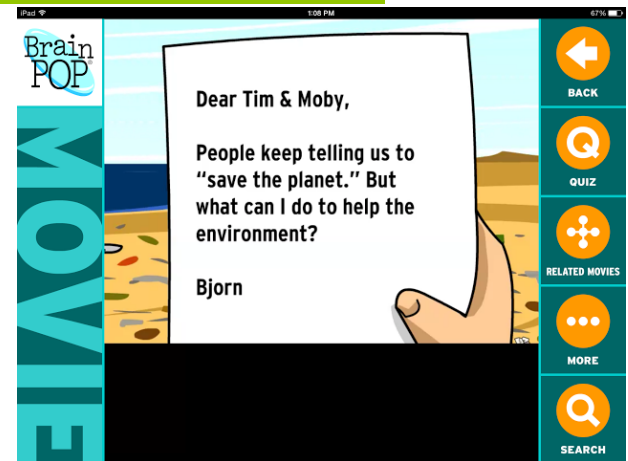
Science




Our Fragile Environment



Humans & The Environment



Watch Video & Take Quiz



# Cultural Page: Corn, Beans and Squash

- Students will explore the planting stories of the Iroquois and perform the Scientific Method to a science project created by the Wampanoag Tribe.
- <http://www.reneesgarden.com/articles/3sisters.html>
- [http://www.wampanoagtribe.net/pages/wampanoag\\_education/corn?textPage=1](http://www.wampanoagtribe.net/pages/wampanoag_education/corn?textPage=1)

The Three Sisters

Corn \* Beans \* Squash

## Scientific Method Rubric

|                               | IMPRESSIVE   | ADEQUATE   | MINIMAL   |
|-------------------------------|--|--|---|
| <b>Investigative Question</b> | Question is clear and complete. Easy to understand.  | Question is somewhat clear and/or complete. Some difficulty in understanding.                                      | Question is unclear and/or incomplete. Difficult to understand.   |
| <b>Hypothesis</b>             | Hypothesis uses an "IF... THEN..." statement to answer the Investigative Question clearly. | Hypothesis attempts to use an "IF... THEN..." statement to answer the Investigative Question somewhat.             | Hypothesis does not use an "IF... THEN..." statement and/or does not answer the Investigative Question. |
| <b>Materials</b>              | All materials used are identified in detail and listed neatly.                             | Most of the materials used are identified in some detail and listed somewhat neatly.                               | Materials are missing and/or are not identified in detail. Difficult to read.                           |
| <b>Method</b>                 | All steps followed are listed completely and with details. Easy to understand.             | Most steps followed are listed somewhat completely and with most of the details. Some difficulty in understanding. | Steps are missing and/or details are missing. Difficult to understand.                                  |
| <b>Results Summary</b>        | Summary is clearly written with details. Highlights all major observations.                | Summary is somewhat clear with most details. Highlights most major observations.                                   | Summary is unclear with many details missing. Few or no highlights given for major observations.        |
| <b>Data Log</b>               | Data Log is complete and includes labeled sketches.  | Data Log is somewhat complete and includes partially labeled sketches.   | Data Log is not complete. Sketches are missing.   |
| <b>Chart</b>                  | Chart is complete and neatly labeled. Easy to understand.                                  | Chart is somewhat complete and mostly labeled. Somewhat easy to understand.  | Chart is not complete and/or missing labels. Difficult to understand.                                   |
| <b>Graph</b>                  | Graph is complete and neatly labeled. Easy to understand.                                  | Graph is somewhat complete and mostly labeled. Somewhat easy to understand.  | Graph is not complete and/or missing labels. Difficult to understand.                                   |