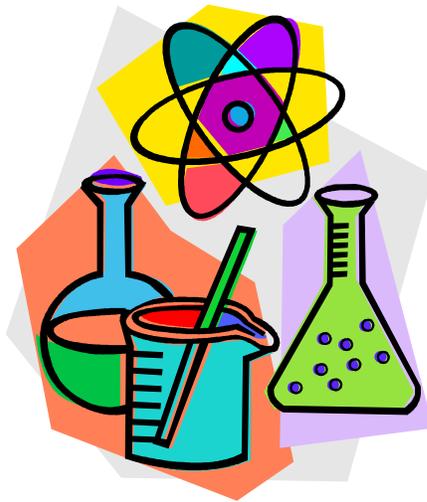


Acid Rain Research Notebook



Name: _____

Teacher: _____

School: _____

Date: _____

Review of Scientific Method

Steps:

- 1.
- 2.
- 3.
- 4.
- 5.

Bean Sprout Experiment

What is pH?

What is the pH of an acid? $<$ $>$ 7 (circle the correct symbol)

The pH of normal rain is 5.6. Is this an acid? _____

Record the pH levels for the various solutions of water and vinegar.*

pH level: _____ $\frac{1}{2}$ cup of water (only) ~ **solution 1**
_____ $\frac{1}{2}$ cup of water + $\frac{1}{3}$ cup of vinegar ~ **solution 2**
_____ $\frac{1}{2}$ cup of water + $\frac{1}{2}$ cup of vinegar ~ **solution 3**
_____ $\frac{1}{2}$ cup of vinegar ~ **solution 4**

**Teachers may vary the amount of water and/or vinegar in each solution.*

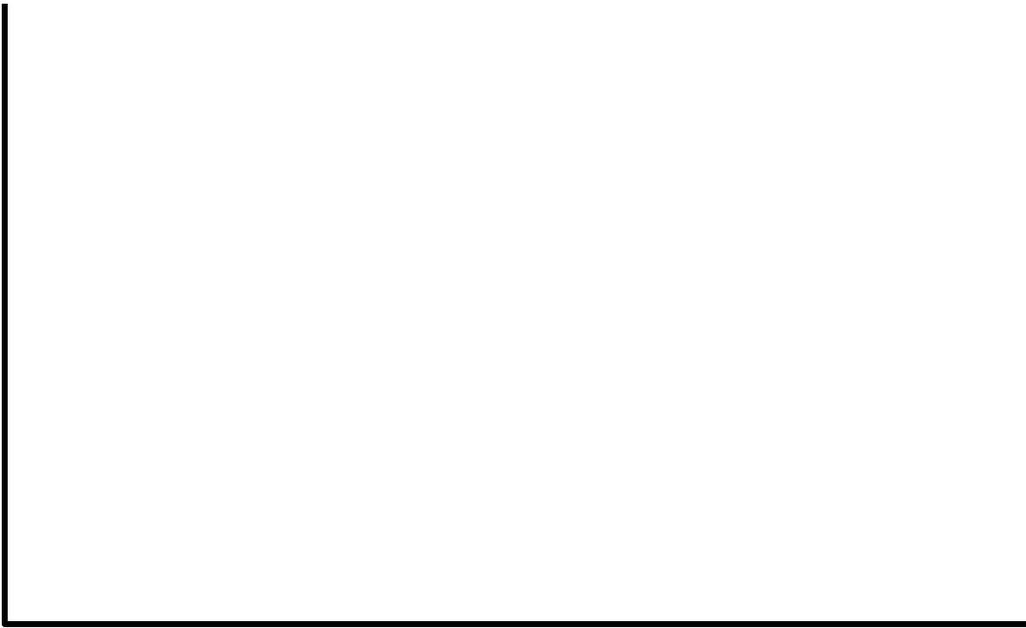
Which solution do you predict will make the plants grow fastest? (hypothesis)

Record plant growth over the next 2-3 weeks, measure growth every 2 or 3 days (your team should decide how often). Use the centimeter portion of a ruler for measurements.

Solution:	1	2	3	4	Solution:	1	2	3	4
Day 1	_____	_____	_____	_____	Day 8	_____	_____	_____	_____
Day 3	_____	_____	_____	_____	Day 10	_____	_____	_____	_____
Day 5	_____	_____	_____	_____	Day 12	_____	_____	_____	_____

Create a chart to show the growth of bean sprouts in various solutions.

Bean Sprout Growth Chart

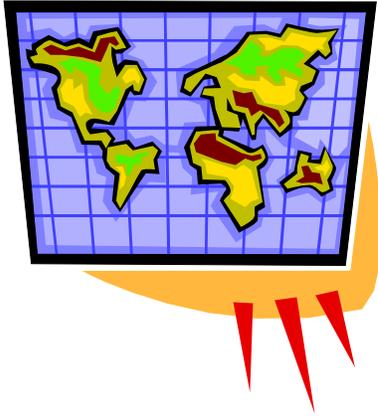


Which solution was the best for plant growth? _____

Was this the same as your hypothesis? _____

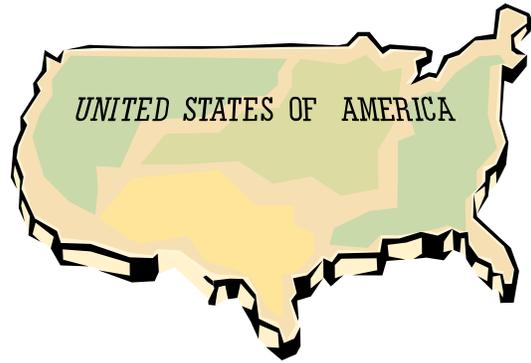
Government Response to Events and Problems

As you tour the Museum, look for examples of each type of response.



Foreign Policy: (define)

Examples: (list)



Domestic Policy: (define)

Examples: (list)

Acid Rain??

Based on the primary source Clean Air Act Options (1989)

Definition (see Background):

Source (see second paragraph Sources of Acid):

- _____ % Utility companies (electric utilities)
- _____ % Factories (industrial sources)
- _____ % Cars & Trucks (transportation sources)

Check the response sheet to see if your team has correctly defined acid rain.

Now look at the table and graph. Which country has the highest levels of emissions? _____ Is this a domestic or foreign policy issue?

Government Policy

Look at the newspaper article “America Repaying Debt to Damaged Environment” to answer questions 1 - 4.

1. Name one example (from 1st paragraph) that shows the level of pollution in the United States before the first Earth Day.

2. What is the government’s plan regarding acid rain (page 2, column 3, paragraph 3)?

3. In the last column of this article, what character does the author use to remind the reader of the importance of trees?

4. Who is the author of this article?

Look at the memo to William Reilly dated 11-2 “near Iowa”.

5. Who is the note at the top from? _____

6. Do they support the Clean Air Act? YES or NO

7. What is this person willing to do? _____

8. Why would this person’s actions be important?

Water Sample Test

Test the various levels of pH for each of the following solutions to rank pH levels.

Based on your classroom experiments, what occurs to plants raised in a high pH (acid) environment?

Hypothesis: Which solution will have the highest pH level?
Create a chart to rank your results.

Solution	pH level
Soda water	_____
Clear white vinegar (mix 1 cup vinegar with 1 cup soda water)	_____
Tomato juice	_____
Orange juice	_____
Tap water	_____
Water sample	_____

Levels of pH in various solutions

