

Science

The Vanishing Statue

Purpose:

- Understand the negative effects of acid rain on the environment and on man-made structures
- Predict and observe the effects of an acid on a model statue
- Demonstrate that science is fun

Procedure:

Work individually.

Have each participant create a model statue by carving half a piece of chalk with a small nail. Some kinds of chalk may need to be lightly sanded before carving.

After carving, place the model statue in the pan.

Explain to the participants that vinegar is an acid and is similar to acid rain. The chalk is made of limestone and acids react chemically with limestone. Some real-life statues and buildings contain limestone. Show the group pictures of a defaced statue from acid rain.

Ask the participants to predict what will happen to their chalk statues when exposed to an acid such as vinegar. Test the predictions by using an eye dropper to drop vinegar on the model statues.

Discussion:

1. What happened to the model statues after vinegar was added?
2. How do these observations compare to the participant predictions?
3. What can individuals do to prevent acid rain in the environment?

Answer: Conserve energy and find environmentally friendly modes of transportation instead of cars.

Acid Rain:

Normal rain becomes acid rain from chemical reactions caused by air pollution. The sulfur and nitrogen air pollutants forming acid rain primarily come from man-made sources, such as power plants and automobiles. Determining the specific sources of acid rain can be difficult as air pollutants are often carried hundreds of miles before falling as acid rain. Acid rain can harm forests, crops, and even man-made statues and buildings.

Activity 1: Acid Rain and Statues

Supplies (for each participant):

- Pictures of a defaced statue due to acid rain to show entire group (print second page)
- 1/2 piece of chalk
- Small piece of sandpaper
- Small nail
- Plastic cup 1/3 full of vinegar
- Eye dropper (may be purchased at most drug stores or online from Home Science Tools: http://www.hometrainingtools.com/catalog/chemistry/glassware-plasticware/p_ce-dropper.html)
- Pan to hold the chalk “statue” and catch vinegar

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Adapted from: Alamo Area Council of Governments <http://www.aacog.com/Air/curriculum/AcidRainTheDisappearingStatue.pdf>



1 activity for grades 3-6. Allow 30 minutes. Science Standard - Investigation
Colorado State University Extension 4-H Youth Development



STATUE BEFORE



STATUE AFTER
(DEFACED FROM ACID RAIN)

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