Test for Acids or Bases Using...Flowers!

When certain plants come into contact with acids or bases, their colors change! These changing plants are acid-base indicators, and they are generally alkaline or acidic, so when they come into contact with things that have a totally different pH, their colors change.

This hands-on science project will let your child see if your own plants are acid-base indicators!

What You Need:

- At least 3 types of purple, orange, red, blue, or pink flowers
- Safety glasses
- Water
- Permanent marker
- Baking soda
- White vinegar
- Measuring cups
- At least 5 clear plastic cups
- At least 3 spoons

What You Do:

1. Put a half cup of vinegar into a plastic cup, and ask your child to label it “acid.”
2. Put a half cup of water, and mix in a couple teaspoons of baking soda. Label this cup “base.”
3. Invite your young scientist to pick a flower and crush up petals into tiny bits. Separate these into three cups, and mix a few drops of water into each.
4. Take a couple drops of acid with a spoon, and add it to one cup. Do the same with the base in another cup. What happens? How do these compare to the third flower that didn't have an acid or base added to it?
5. Acid-base indicators will change quickly! Ask your child if she thinks the flower is an acid-base indicator. After contact with a base, a red flower will turn blue or greenish. After contact with an acid, a red flower will get more red. Blue flowers, after contact with a base, will turn more blue, and after contact with an acid, will become more pinkish.
6. Try steps 3 and 4 with the other flowers. Which flowers are acid-base indicators? To get accurate results, clean the flower cups to make sure no leftover residue remains.
7. Challenge your scientist to reverse the reaction! Is it possible to add more of an acid or base to return a flower to its original color?

Not all flowers are acid-base indicators. Tulips, pansies, and roses are just a few of many flowers that are acid-base indicators. If you need more options, take some fruit and vegetables from your refrigerator to test!

Author: Melissa Koosmann
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