

### Fact Sheet: How to Use Vinegar to Imitate Acid Rain

As you know from your reading, acid rain is not vinegar. But vinegar is an acid, and you can use it to create a solution that is like acid rain. You and your teammates will need more facts.

1. How acidic should the imitation acid rain be? Here are the facts:
  - "Normal" rain has a pH of 5.6.
  - Acid rain is anything with a pH of less than 5.6.
  - Vinegar has a pH rating of 3.0.
  - To make an imitation acid rain with a pH of 4.0, you need to dilute the vinegar with water (make it weaker). For example:  
20 ml (4 tsp) of vinegar + 2 liters (2 qt) of water = imitation acid rain with a pH of 4.0
  - Remember, the water you begin with may have a different pH from that of normal rain. Keep this in mind when you decide how much vinegar to add. You may want to test your water's pH before deciding on your solution.
2. Now that you know the facts, discuss with your group how to set up your own experiment.
  - Decide how acidic to make your rain.
  - Figure out how much rain needs to fall each time so that it definitely gets into the aquatic ecosystem, too. Remember that you should use about the same number of dropperfuls of water that the class has been using throughout the unit to water the ecocolumn. Simply count the number of dropperfuls of pollutant solution until it begins to come out of the opening of the terrarium.
  - Decide how often you will schedule an acid-rain shower. Water the ecocolumn as often as the class did before. Remember, you don't want to overwater the terrarium.
  - Set up a recordkeeping system to keep track of this information on a daily basis (for example, a chart, calendar, or diagram).