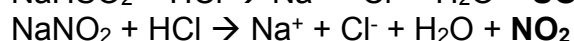
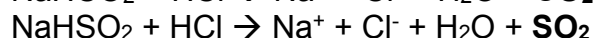


APES- Air Pollution & Acid Rain Experiment

During this experiment you will be performing the following reactions:



1. Based on what you know from this unit, which of these reactions relates to the following:
a. industrial smog b. photochemical smog c. acidification of water
2. Which reaction will cause the biggest change in pH?

Procedure

1. Collect the materials for your team.
2. Rinse the pH probe with distilled water and place it into the beaker of water (20mL)
3. Arrange the plastic tubing so that it goes into the water.
4. Place the 4g of NaHCO₂ (sodium bicarbonate) into the test tube. Pipet 5mL of HCl into the test tube and quickly close with the stopper. Make sure that the tubing is still underwater.
5. Record your pH for about 200 seconds. Record your results.
6. Dump out the test tube and the beaker. Rinse all of your supplies with tap water.
7. Repeat steps 2-6 for the other two chemicals (NaHSO₂ and NaNO₂)

Data

Gas	Final pH (200 seconds)	Initial pH (0 seconds)	Change in pH due to dissolved gasses
Carbon dioxide			
Sulfur dioxide			
Nitrogen dioxide			

Conclusion Questions

1. Was your hypothesis supported? Explain why or why not.
2. What were the constants, the control, the independent variable, and the dependent variable of this experiment?
3. What ion causes the pH to change?
4. What are the primary anthropogenic sources of each of the gasses?
5. What are some ways that acid precipitation can be treated?