



DELAWARE HEALTH
AND SOCIAL SERVICES
Division of Public Health

Lab in a Bag

In this bag:

- 1 lab coat
- 1 pair of latex-free gloves
- 2 hair nets
- 1 bag of culture loops
- 1 specimen collection kit
- 3 test tubes
- 5 microcentrifuge tubes
- 1 specimen bag
- 1 pack of transfer pipettes
- Activity booklet

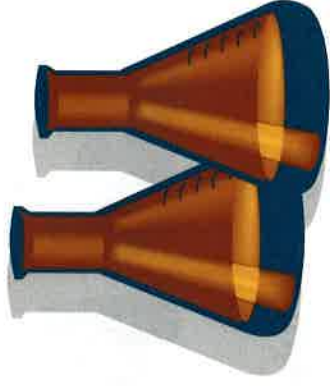


Acid/Base Reactions

Good Juice Gone Bad!

Supplies:

3 glasses
Goggles
Lab Coat (in your Lab-in-a-Bag)
Gloves (in your Lab-in-a-Bag)
Measuring spoons and cups
Vinegar
Ammonia
Water
Red Grape Juice



Instructions:

1. Put on goggles and rubber gloves first. Set up your 3 glasses.
2. Add 1/2 teaspoon of vinegar to the third glass, 1/8 teaspoon of ammonia to the second glass, and 1/3 cup of water to the first glass.
3. Add a teaspoon of Red grape juice to the first glass.
4. Pour the liquid from the first glass into the second glass. Notice the color change. The juice will turn green because ammonia is an alkaline solution (also known as a base). Sorry but your juice is now bad.
5. Pour the liquid from the second glass into the third glass and notice the color change. The juice will turn pink again because vinegar is an acid and it neutralizes pH of ammonia. Your juice is good again. SWEET!

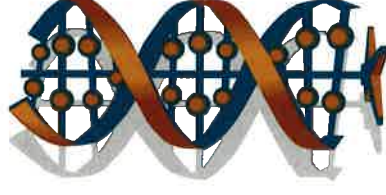
Remember, do not drink any of the samples used for your experiment!

DNA Extraction

Extract your own DNA!

Supplies:

Sports drink
Liquid dish soap
Meat tenderizer
Rubbing alcohol
Small cup
Bowl of ice
Test tubes (in your Lab-in-a-Bag)
Transfer pipettes (in your Lab-in-a-Bag)
1 microcentrifuge tube (in your Lab-in-a-Bag)
Gloves (in your Lab-in-a-Bag)



Instructions:

1. Pour about 1 tablespoon of sports drink into a small cup.
2. Put on your gloves. Swish the sports drink in your mouth for 1 minute to collect cheek cells.
3. Spit sports drink back into the cup and add a few drops of liquid dish soap and swirl gently to mix.
4. Let this mixture sit for 10 minutes.
5. Use your transfer pipette to fill your test tubes about 1/3 of the way full with the sports drink mixture.
6. Add a small pinch of meat tenderizer to each tube and gently swirl to mix.
7. Tilt your test tube and pour rubbing alcohol down the side of the tube so it forms a layer on top of the sports drink mixture. Add alcohol until you have about the same amount of alcohol as the sports drink mix in the tube.
8. Alcohol is less dense than water, so it will float on top of the sports drink mixture. Look for white stringy clumps in between the layers; what you see are clumps of tangled DNA molecules! DNA normally stays dissolved in water, but when salty DNA comes in contact with alcohol it becomes undissolved. This is called precipitation. You can use a clean transfer pipette to collect the DNA. If you want to save your DNA, you can transfer it to the microcentrifuge tube filled with alcohol.