

Name \_\_\_\_\_

Date \_\_\_\_\_

## DNA Extraction: Strawberry

**Background:** The long, thick fibers of DNA store the information for the functioning of the chemistry of life. DNA is present in every cell of plants and animals. The DNA found in strawberry cells can be extracted using common, everyday materials. We will use an extraction buffer containing salt, to break up protein chains that bind around the nucleic acids, and dish soap to dissolve the lipid (fat) part of the strawberry cell wall and nuclear membrane. This extraction buffer will help provide us access to the DNA inside the cells.

### Pre-lab questions:

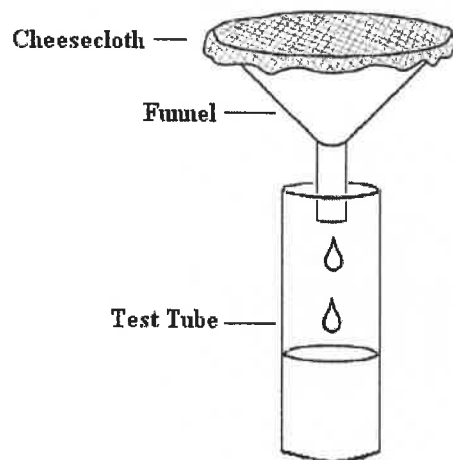
1. What do you think the DNA will look like?
2. Where is DNA found?

### Materials:

heavy duty ziploc bag  
1 strawberry  
10 mL DNA extraction buffer (soapy, salty water)  
cheesecloth  
funnel  
50mL vial / test tube  
glass rod, inoculating loop, or popsicle stick  
20 mL ethanol

### Procedure:

1. Place one strawberry in a Ziploc bag.
2. Smash/grind up the strawberry using your fist and fingers for 2 minutes. *Careful not to break the bag!!*
3. Add the provided 10mL of extraction buffer (salt and soap solution) to the bag.
4. Knead/mush the strawberry in the bag again for 1 minute.
5. Assemble your filtration apparatus as shown to the right.
6. Pour the strawberry slurry into the filtration apparatus and let it drip directly into your test tube.
7. Slowly pour cold ethanol into the tube. OBSERVE ☺
8. Dip the loop or glass rod into the tube where the strawberry extract and ethanol layers come into contact with each other. OBSERVE ☺



## Analysis and Conclusions

Describe the physical appearance of the DNA. If you manipulated the DNA, explain what manipulations you were able to conduct and the results (i.e. stretching, breaking, etc.).

What types of cells contain DNA? Why? What is its function?

Why is it important for scientists to be able to remove DNA from an organism? Provide at least two reasons.

How might a scientist obtain DNA from a Humpback whale? Use resources to find at least two methods currently in use by researchers. Be sure to list the websites used.

Websites: \_\_\_\_\_

What information do researchers gather from DNA collected from Humpback whales?

Websites: \_\_\_\_\_