

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## DNA Extraction from Strawberries Lab

### Introduction

Wouldn't it be great to be able to see DNA with your own eyes? In this lab activity, you will be able to do so by extracting DNA from the nucleus of strawberry cells. Strawberries are an excellent source of DNA because they have multiple copies of each chromosome.

### Materials

- 1 resealable plastic bag
- 1 – 3 strawberries (depending on the size; total volume needs to be around golf-ball size)
- 1 coffee filter
- 1 plastic cup
- 1 plastic pipette
- 10mL DNA extraction buffer
- 1 test tube
- 1 test tube with 15mL ice cold alcohol
- Coffee stirrer

### Procedure

1. Remove any stem, leaves, or sepals from the strawberries
2. Place the strawberries in the plastic bag and seal it
3. Mash the strawberries for about 2 minutes, smashing them completely
4. Add 10mL of DNA extraction buffer to the bag and reseal it
5. Mash for about 2 more minutes, trying not to get it too bubbly
6. Place the coffee filter into the cup, folding the top over the edges of the cup. Make sure the filter does not touch the bottom of the cup
7. Pour the strawberries and buffer into the filter and let them drip into the cup. This may take a few minutes.
8. Using the pipette, add about 3mL to the empty test tube
9. Slowly pour the alcohol into the strawberry solution by pouring down the side of the tube so it forms a separate layer on top of the strawberry liquid
10. You should see the precipitate form as a white cloud between the two layers. The cloudy substance is DNA!
11. Slowly spin and stir the coffee stirrer in the DNA to wrap it around the stirrer

You have now extracted DNA from strawberries. Clean up your lab area and complete the post lab questions.

### Post-Lab Questions

1. Why were the strawberries mashed?
2. What is the purpose of the filter?
3. What does the DNA extraction buffer do?
4. What happened when you added the ethanol to the strawberry filtrate?
5. What does the DNA look like? Is a microscope needed? Explain.

### Extension Activity

Take the coffee stirrer with DNA attached and remove some of the DNA onto a clean glass microscope slide. Gently stretch it apart using 2 toothpicks. Observe with the microscope. Draw what you see in the field of view below.

