

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

## Strawberry DNA Extraction Lab

**Pre-Lab Questions:** Read the Introduction and answer the following questions.

- 1) List at least four organisms DNA is found in:
- 2) Why is DNA important?
- 3) What are three traits that can be inherited through a person's DNA? (Create your own examples!)
- 4) **True or False:** All of our traits are inherited from our parents.
- 5) What is the monomer of DNA?
- 6) What are the three parts of a nucleotide?
- 7) What is the goal of this lab?

**Purpose:** Can we isolate DNA from a strawberry?

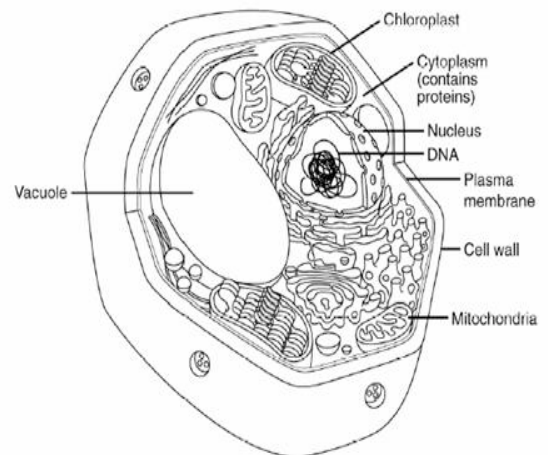
**Hypothesis:** If we isolate DNA from a strawberry, then I think it will look like: \_\_\_\_\_

Read through Parts 2 and 3, and then answer the following questions.

1. What are the 3 major steps in DNA extraction?
2. Why do you need to add soap to the smashed strawberries?
3. Why do you need to add salt?
4. Why do you need to add alcohol?

**Now match the procedure with what it is doing to help isolate the DNA from the other materials in the cell.**

- |   |   |
|---|---|
| _____ 1. Break open the cell by destroying the cell wall  | A. Smash the strawberry to a slushy mixture |
| _____ 2. Dissolve cell membrane   | B. Filter your extract through cheesecloth  |
| _____ 3. Precipitate the DNA (clump the DNA together)   | C. Mix in a detergent solution              |
| _____ 4. Separate organelles, broken cell wall, and membranes from proteins, carbohydrates, and DNA | D. Layer cold alcohol over the extract      |



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### **Perform the Experiment**

Once you have extracted the DNA, draw what you see in the left box below. You may also use words to describe your observations of the extracted DNA. In the right box, draw the molecular structure of DNA using your textbook.

| Observations After DNA Extraction | DNA Molecular Structure |
|-----------------------------------|-------------------------|
|                                   |                         |

### **Analysis and Conclusions:**

1. Before conducting this laboratory exercise, what did you think the DNA would look like? Did its appearance surprise you? Explain why or why not.
2. A person cannot see a single cotton thread 100 feet away, but if you wound thousands of threads together into a rope, it would be visible from much further away. Is this statement analogous to our DNA extraction lab? Explain.
3. Why is it important for scientists to be able to remove DNA from a cell? List two reasons you can think of.
4. Do you think scientists use the same procedure we used today to extract DNA from human cells? Why or why not?
5. Is DNA the same in all cells of the human body? Explain your answer.
6. What is different about every person's DNA?