Class: ____ Name: _____

Science English Experiment: <u>Extraction of Banana DNA</u>

<u>Introduction</u>:

All living things are made up of cells.

Each cell has a **nucleus** which controls the life of the cell.

Each nucleus has chromosomes which contain **DNA**.

DNA dissolves in salt water and precipitates in alcohol.

<u>Purpose</u>:

To extract DNA from banana cells by using items easily available in the kitchen.

<u>Materials</u>:

Banana	Liquid detergent	Cooled ethanol
Mortar and pestle	Glass rod	Beaker
Tea bag	Salt	Tap water
Wooden chopsticks	Test tube	

<u>Procedure</u>:

1. ***Preparation of Solution*:**

   In a beaker mix 8g of salt with 3mL of liquid detergent.

   Fill the beaker with water to a volume of 50mL and stir **<u>gently</u>** with the glass rod.

2. ***Preparation of Sample*:**

   Mash-up a 5cm piece of banana and place it in the beaker.

3. ***Extraction of DNA*:**

   <u>Gently</u> stir mashed banana suspension then let it stand for 10 minutes.

   (The liquid detergent is a surface acting agent [called a *surfactant*] and

helps the DNA dissolve into salt water.)

4. ***Filtration***:
   Use a tea bag to filter the mashed banana suspension into a smaller beaker, then pour the resulting filtrate into a test tube. Fill the test tube about halfway.

5. ***Precipitation of DNA***:
   Add an equal amount of ethanol to the filtrate by **slowly** pouring it down a glass rod. (Ethanol is less dense than water, so it sits on the water solution making 2 different layers.)
   Wait for a white precipitate to form on the boundary phase. (DNA does not dissolve in ethanol. It will precipitate out.)

6. ***Collection of DNA***:
   Gently stir the solution with a wooden chopstick. The fibers will stick to it and the DNA can be spooled and collected.

Write down what you see! Use lots of details. (group question)