 **Berry Full of DNA** 

**CLASS SET**

**Purpose: To obtain information concerning the molecular structure of DNA by observing DNA extracted from strawberries.**

**Problem: Is DNA found in all living or once living cells?**

**Background information: We will break open the cells of strawberries and separate the DNA from the rest of the cell. Strawberries are a good source of DNA because they have 8 copies of each type of chromosome.**

**Hypothesis: If I use extraction buffer and ice cold ethanol, then I will be able to extract the DNA from strawberries.**

**Materials:**

**Zip lock baggie with frozen strawberry Test Tube**

**10 mL DNA extraction buffer(soapy water) Beaker**

**Graduated cylinder Stirring rod**

**Ice Cold 91%ethanol(rubbing alcohol) Coffee filter**

**Procedure:**

1. **Smash the strawberry in the baggie for 2 minutes.**
2. **Add 10 mL of DNA extraction buffer(soapy water)**
3. **Smash again for 1 minute.**
4. **Pour the mixture into the coffee filter over the beaker and squeeze the solution into the beaker.\*\*Make sure JUST liquid goes in the beaker!!\*\***
5. **Pour 5 mL of the solution from the beaker into the test tube.**
6. **SLOWLY pour the ice cold ethanol into the test tube until the test tube is half full with liquid.**
7. **Dip the stirring rod into the test tube right where the**

**alcohol and extract layers are in contact with each**

**other. Spin the rod to wrap the DNA around it.**

**\*\*See picture\*\***

**Analysis Questions: Answer on a separate sheet of paper.**

1. **What is DNA?**
2. **Where is DNA found?**
3. **What shape is DNA?**
4. **What type of macromolecule is DNA and what is the monomer that makes up this polymer?**
5. **What are the 3 parts of the nucleotide?**
6. **What 2 processes in the cell use DNA?**
7. **A person cannot see a single cotton thread four classrooms away, but if you wound thousands of threads together into a rope it would be visible. How is this statement an analogy to our DNA extraction?**
8. **Is DNA the same in every cell of your body? Explain.**
9. **Give 2 reasons why a scientist would want to study the DNA of strawberries.**

**Conclusion:**

1. **Is DNA found in all living or once living cells? Since the strawberries were once living and we extracted DNA from them, what does that mean about the foods you eat?**

**Clean up:**

1. **THROW AWAY the filters and baggies with fruit**
2. **RINSE the stirring rod, beaker, test tube and graduated cylinder**
3. **Put ALL equipment back in the basket and get a new baggie and coffee filter for the next group**