



## Strawberry DNA Extraction

Every living thing contains DNA in its cells. DNA is a molecule that holds the recipe to make the proteins needed to build a living organism. You have DNA in each one of your cells and so do strawberries. Humans have two sets of DNA but strawberries have eight sets. Let's see if we can pull the DNA out of a strawberry!



**Coffee Filter**



**Strawberry**



**1 tsp Dish Soap, Hand Soap, or Shampoo**



**Stir Stick**



**Sealable Bag**



**¼ Cup Ice Cold Rubbing Alcohol**



**Funnel**



**½ tsp Salt**



**¼ Cup Water**



**2 Plastic Cups**

1. Put the strawberry into the plastic bag and gently smash it until the strawberry is crushed. This starts the process of breaking the cells so DNA is released.
2. In a plastic cup, make extraction buffer: Mix 1 tsp detergent, ½ tsp salt, ¼ cup water. Stir well.
3. Add the extraction buffer to the plastic bag with the strawberries. This will break down the cells even more.
4. Reseal the bag. Make sure it is fully sealed! Gently massage the strawberry liquid. Try not to make too many bubbles.
5. Place a coffee filter on top of a funnel and put the funnel into the other cup. Have a partner hold the filter in place as you pour the strawberry mixture in. Be sure it does not overflow.
6. Allow the strawberry juice to run into the cup. Twist the top of the filter just above the juice and gently squeeze the remaining liquid into the cup.
7. Remove the filter. Pour ¼ cup ice cold rubbing alcohol down the side of the cup. **Do not mix!** You have isolated DNA from the cell. It will slowly start to precipitate.
8. Watch for a white cloudy substance to form in the alcohol layer. This is DNA.
9. Using a coffee stirrer or Popsicle stick, slowly stir the top layer. Pull out the DNA!

*Teacher Note: To make a class volume of extraction buffer mix (for 26 students): 6.5 cups water, ¼ cup salt, ½ cup detergent*



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