



How to extract DNA from a strawberry

Cells are the basic unit of life and make up all plants, animals and bacteria. Deoxyribonucleic acid, or DNA, is the molecule that controls everything that happens in the cell. DNA contains instructions that direct the activities of cells and, ultimately, the body. This activity will demonstrate how DNA can be isolated from a strawberry using common household materials.



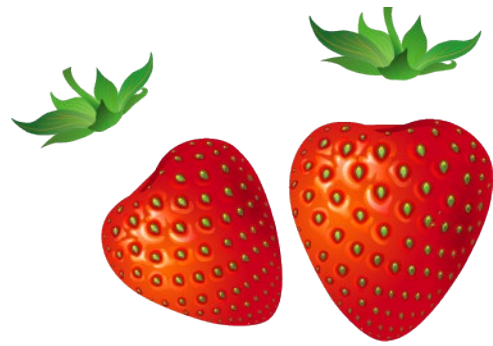
What you will need:

For video instruction visit: genome.gov/strawberry-DNA



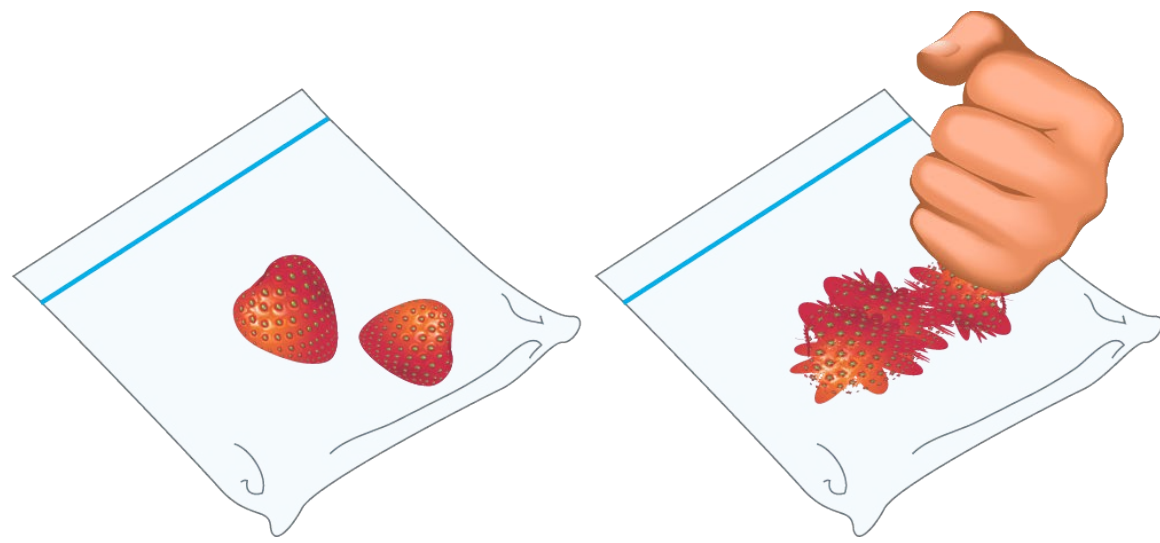
1

Pull off any green leaves on the strawberry.



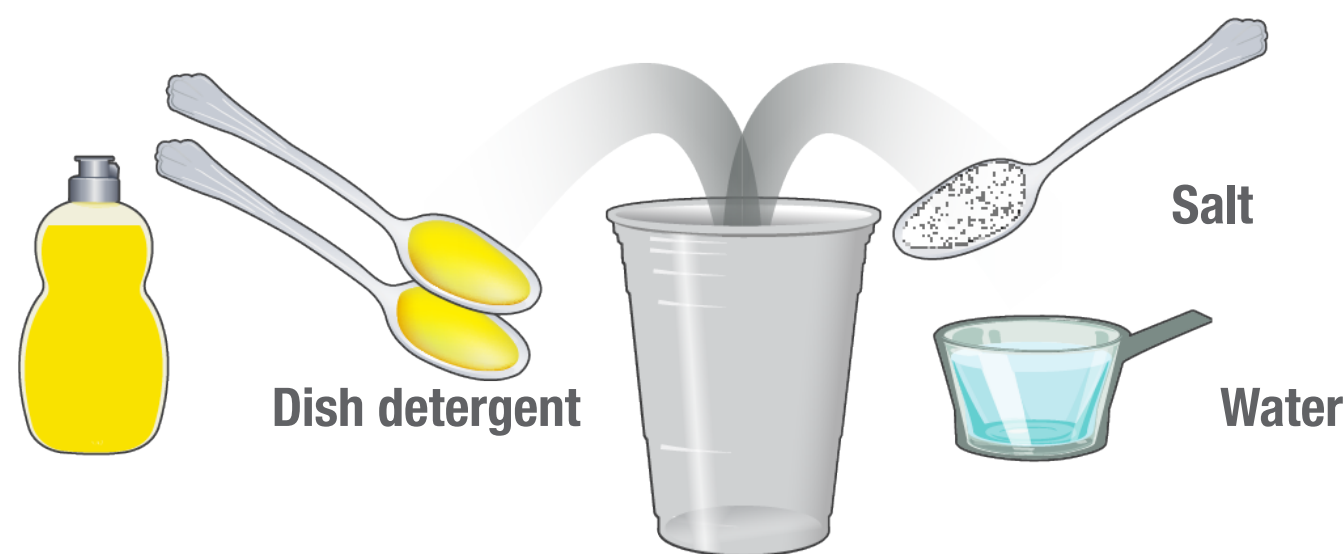
2

Put the strawberries into the plastic bag, seal it and gently smash the strawberries for about two minutes. This starts to break open the cells and release the DNA.



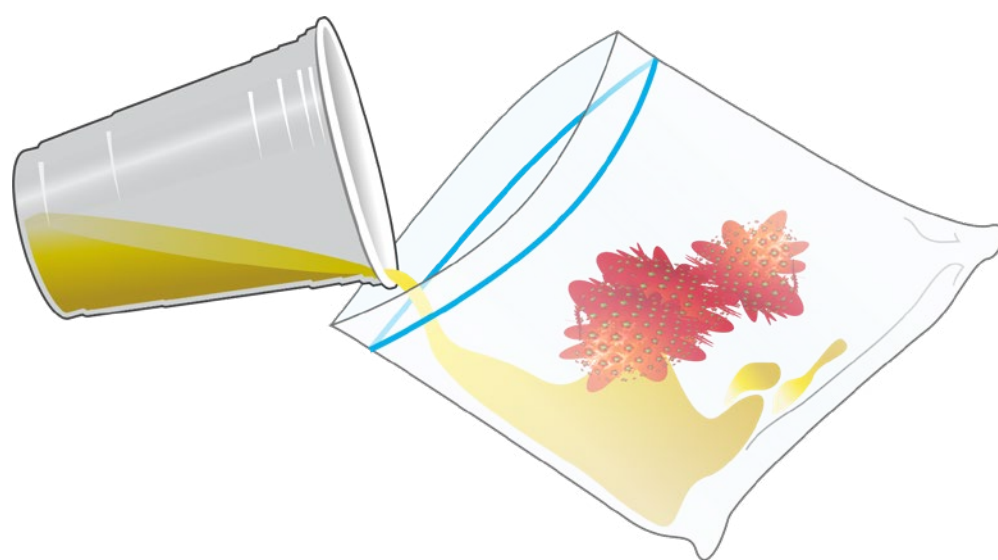
3

Mix together 2 teaspoons of detergent, 1 teaspoon of salt and 1/2 cup of water in a plastic cup. This will be your DNA extraction liquid.



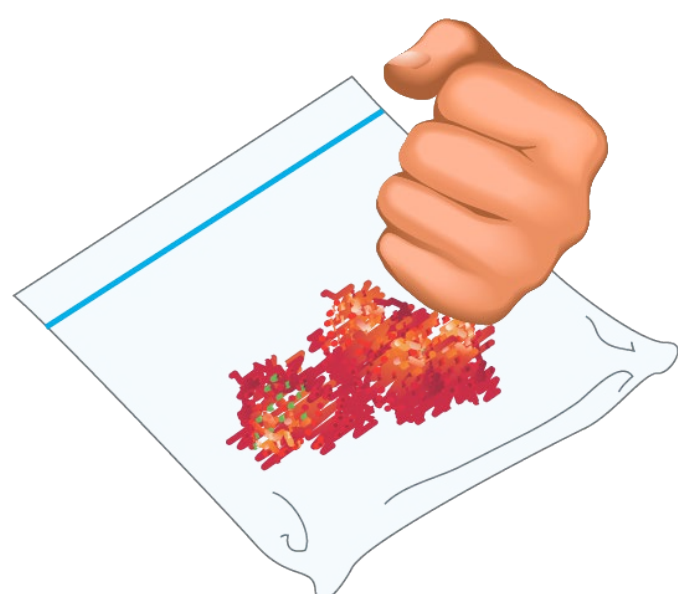
4

Pour the DNA extraction liquid into the bag with the strawberries (make sure the bag is big enough; quart-sized works well!). This will further break open the cells.



5

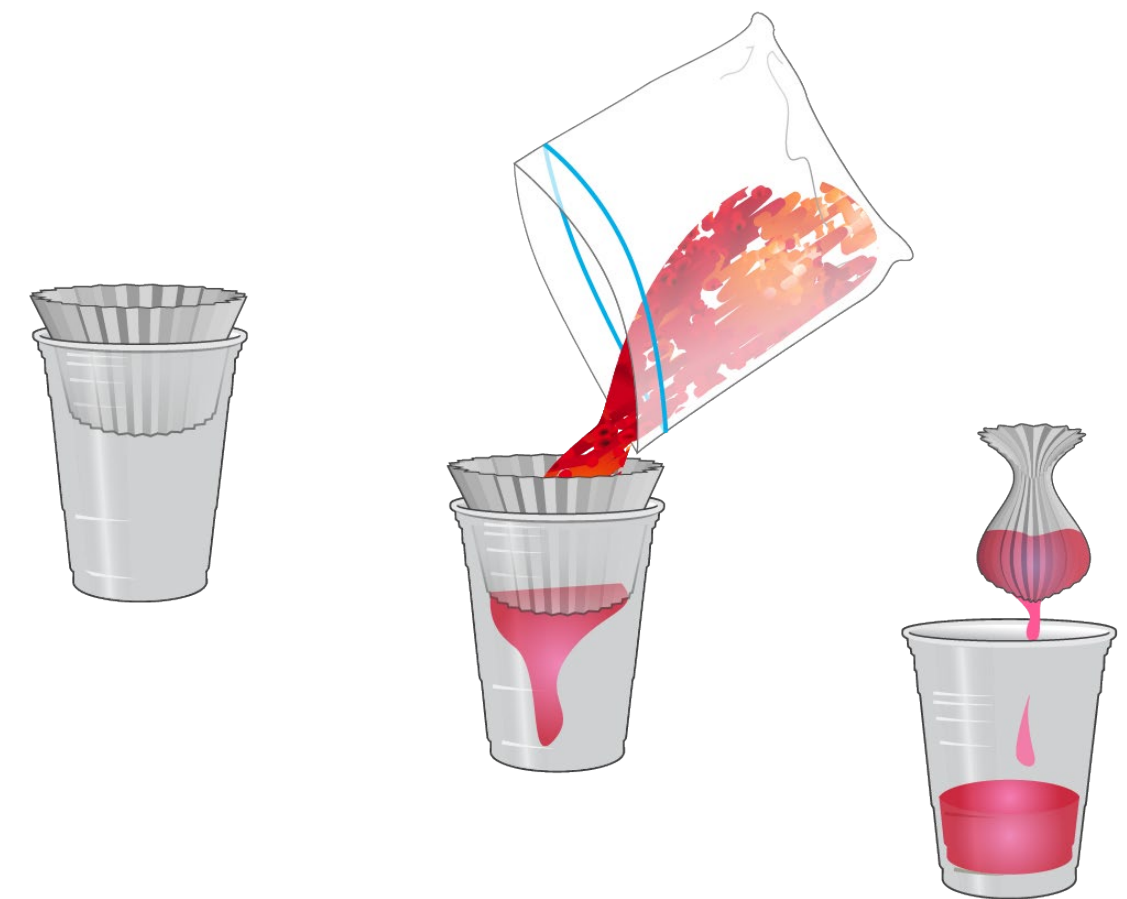
Reseal the bag and gently smash for another minute. Avoid making too many soap bubbles.



6 and 7

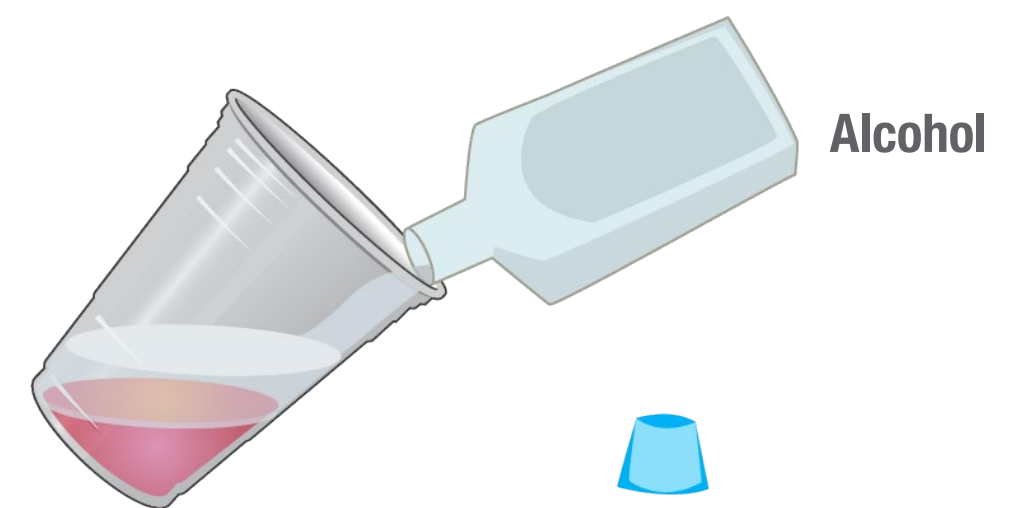
Place the coffee filter inside the other plastic cup.

Open the bag and pour the strawberry liquid into the filter. Twist the filter just above the liquid and gently squeeze the remaining liquid into the cup.



8

Pour an equal amount of rubbing alcohol as there is strawberry liquid down the side of the cup. Do not mix or stir.



9

Within a few seconds, watch for a white cloudy substance (DNA) to develop in the top layer. You have just isolated the DNA from the rest of the material contained in the cells of the strawberry.



10

Tilt the cup and pick up the DNA using a coffee stirrer.

