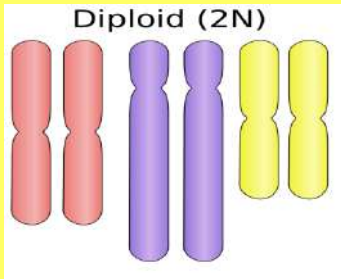


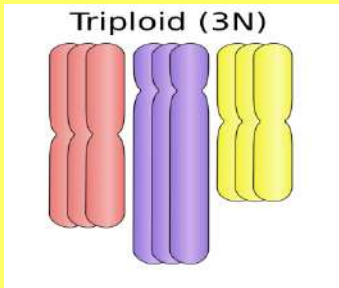
BANANA DNA EXTRACTION



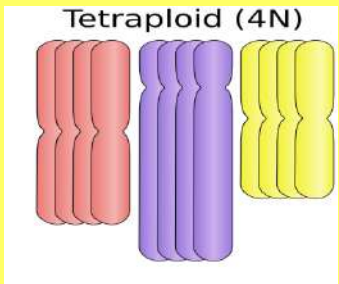
Many plants are polyploids



- Triploid (3n) crops:
apple, banana, watermelon



- Tetraploid crops (4n)
apple, cotton, potato, peanut



- Hexaploid (6n) crops:
kiwi
- Octaploid crops:
strawberry, sugar cane, pansies

Place $\frac{1}{2}$ of a banana in a plastic bag.
Add 10 mL of distilled water.
Squeeze bag to mash



Crushing the bananas
separates cells and
hypotonic water helps
them swell bigger.

http://www.skylighter.com/images/how_to/3-Inch-Plastic-Hybrid-Ball-Shell/Sandwich-bags.jpg

<http://teachers.egfi-k12.org/wp-content/uploads/2011/01/Bananas.jpg>

Use a plastic cup:

Add 1 teaspoon of shampoo

Add $\frac{1}{4}$ teaspoon of salt

Stir to mix.



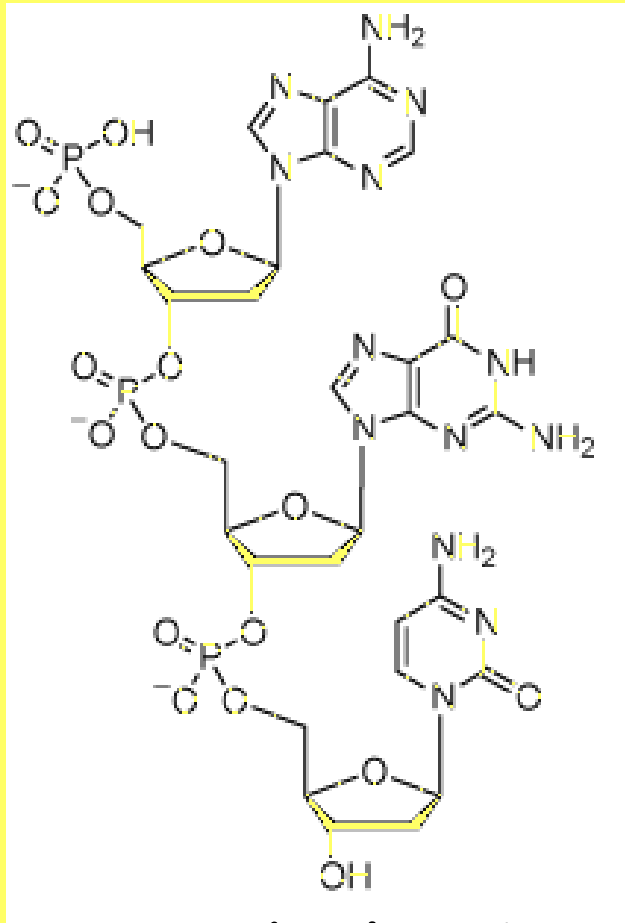
Stir **GENTLY** until soap and salt are dissolved. ***Avoid creating foam.***



<http://www.drugstore.com/suave-shampoo-aloe-and-water-lily/qxp2707>

<http://thumbs.dreamstime.com/z/soap-suds-bubbles-clip-art-2848674.jpg>

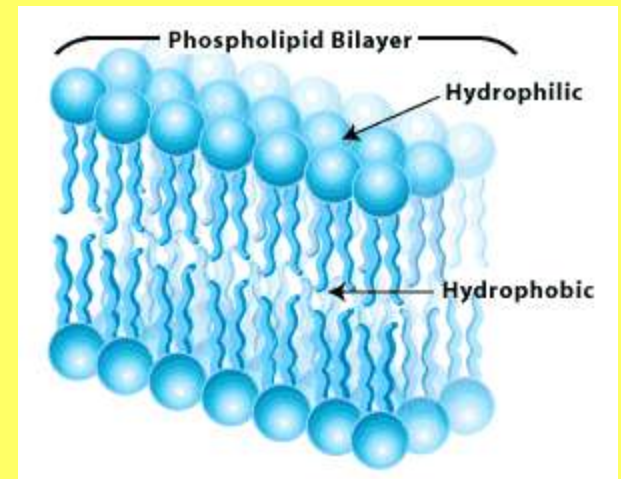
http://www.meijer.com/assets/product_images/styles/xlarge/1001029_024600010016_A_400.jpg



WHY?

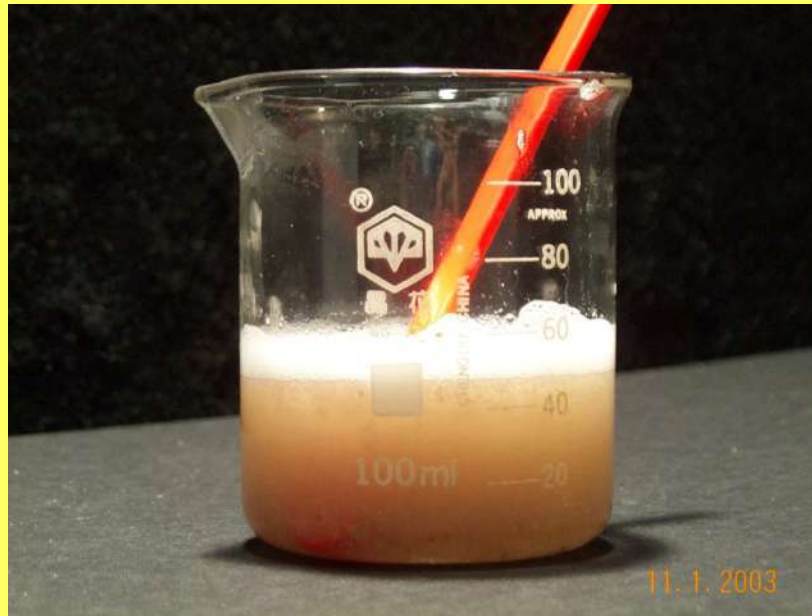
Adding salt (Na^+Cl^-) helps DNA molecules with **NEGATIVE** charges stick together.

Soap -helps break down cell membranes and release DNA



Add 2 spoons of the banana mixture.

Use spoon to stir **GENTLY** for *at least 10 minutes*.



Add 20 mL water to mixture.

Place coffee filter into a the filter cone and hold it over a clean plastic cup.

Pour the banana mixture into the filter.



The liquid (called filtrate) will collect in the bottom of the cup.

Gently stir the mixture in the filter being careful not to poke a hole in the filter paper.

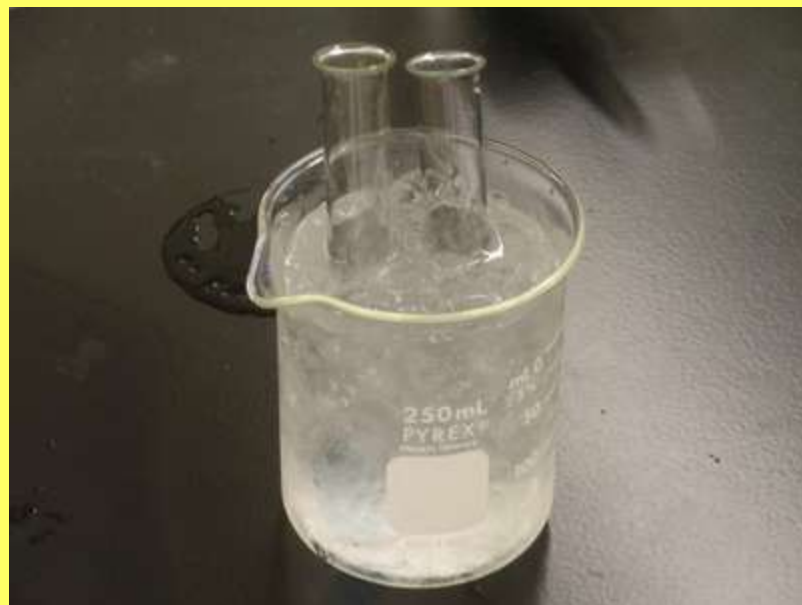
Let sit for a few more minutes.



Remove filter and set aside.

Obtain a tube containing
91% isopropyl alcohol.

Keep the alcohol as cold as possible
by placing it in the cup of ice.



Use a pipette (eyedropper) to collect your filtrate and SLOWLY drop it down the inside of the tube containing cold alcohol.

Add 2 droppers of banana filtrate.

DON'T MIX
THE LAYERS !



Place tube on ice

*Let sit UNDISTURBED
for 4 minutes*



Cold alcohol helps the DNA precipitate and come out of solution so it can be collected.

Dip the loop into the tube, slowly rotating
it to spool out the banana's DNA
Place in microtube containing alcohol.

