



Leafy secrets...



What you need:

3 GREEN LEAVES FROM DIFFERENT TREES
RUBBING ALCOHOL
1 GLASS JAR
PLASTIC SPOON
PLASTIC WRAP
COFFEE FILTERS CUT INTO SHORT STRIPS
SMALL BOWL WITH HOT WATER

SHHH.... THIS
IS JUST
BETWEEN *US!*

What to do:

RIP THE LEAVES INTO TINY PIECES AND PLACE THEM IN THE JAR. POUR RUBBING ALCOHOL OVER THE LEAVES UNTIL THEY ARE JUST COVERED. GET AN ADULT TO MASH AND STIR THE LEAVES INTO THE RUBBING ALCOHOL WITH THE SPOON UNTIL THE ALCOHOL TURNS GREEN. COVER IT WITH WRAP. PUT THE JAR IN A BOWL WITH A LITTLE HOT WATER FROM THE TAP FOR AN HOUR. GENTLY SWIRL THE JAR EVERY FEW MINUTES TO STIR THE LEAVES WHILE THE JAR IS WARMING. REMOVE THE PLASTIC WRAP AND INSERT ONE END OF THE COFFEE FILTER STRIP INTO ALCOHOL. THE OTHER END SHOULD REST AGAINST THE JAR. LET THE STRIP REST FOR AN HOUR AND OBSERVE WHAT HAPPENS ON THE PAPER.

What's going on?

THIS IS A PROCESS KNOWN AS CHROMATOGRAPHY AND IS USED TO SEPARATE A MIXTURE INTO ITS DIFFERENT COMPONENTS. IN THIS EXPERIMENT, LEAF PIGMENTS ARE DISSOLVED INTO THE ALCOHOL QUICKLY WHEN WARMED BY THE HOT WATER. ALTHOUGH THEY APPEAR GREEN, MANY DIFFERENT PIGMENTS EXIST WITHIN A PLANT CELL AND ARE DIFFUSED THROUGH THE PAPER STRIP AT DIFFERENT SPEEDS BASED ON THE SIZE OF THEIR MOLECULES. IT IS NOT UNCOMMON TO SEE REDS, ORANGES, YELLOWS, AND DIFFERENT SHADES OF GREEN TRAVEL UP YOUR PAPER STRIP.