

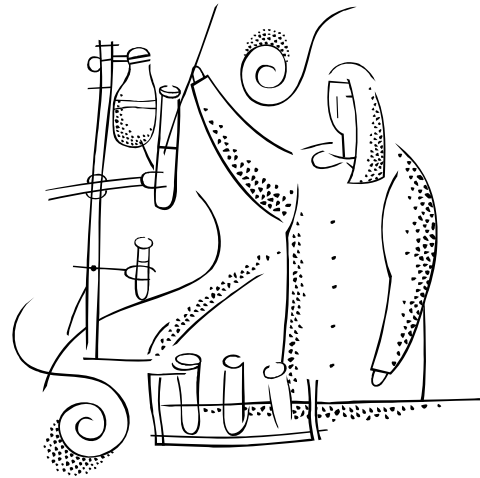


*St. Johns County Utility  
Environmental Laboratory*



*Katie*

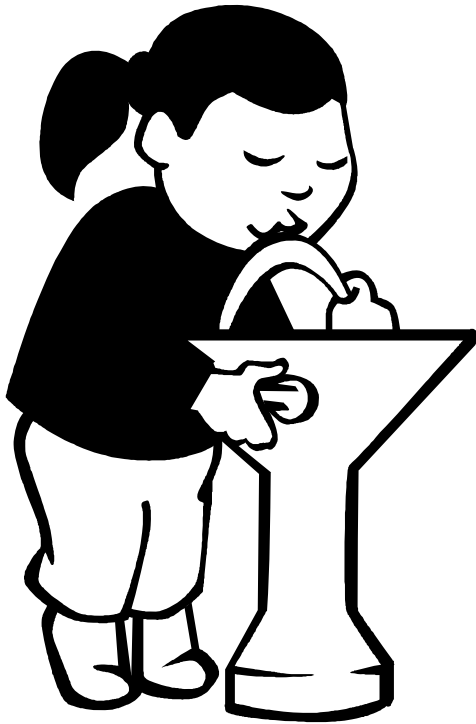
*Heather*



*Tom*

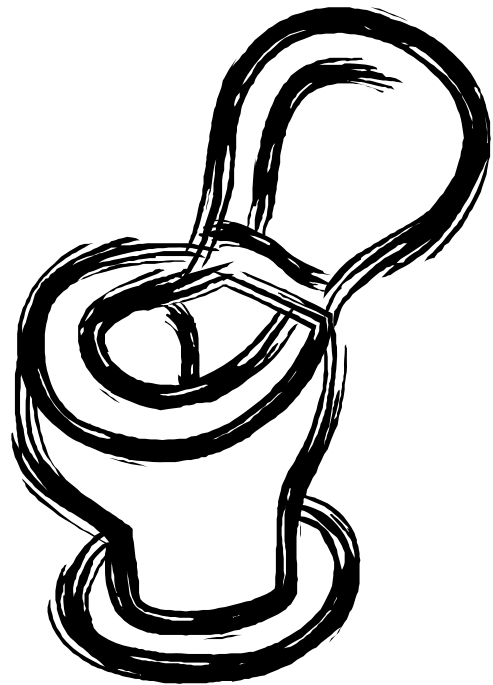
*The Chemists*

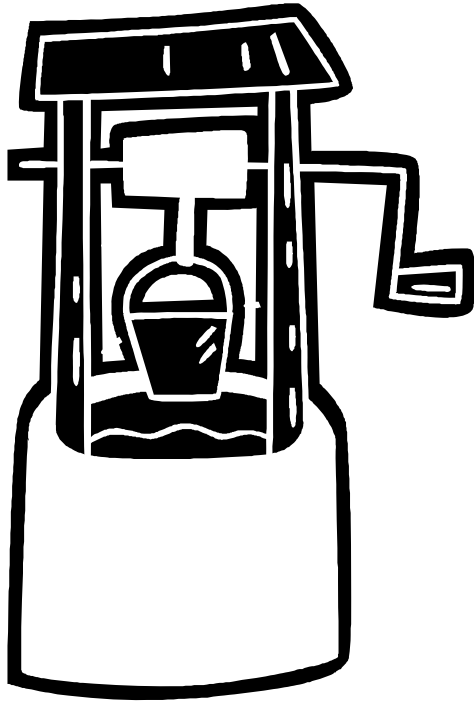
# *We Test*



*Drinking  
Water*

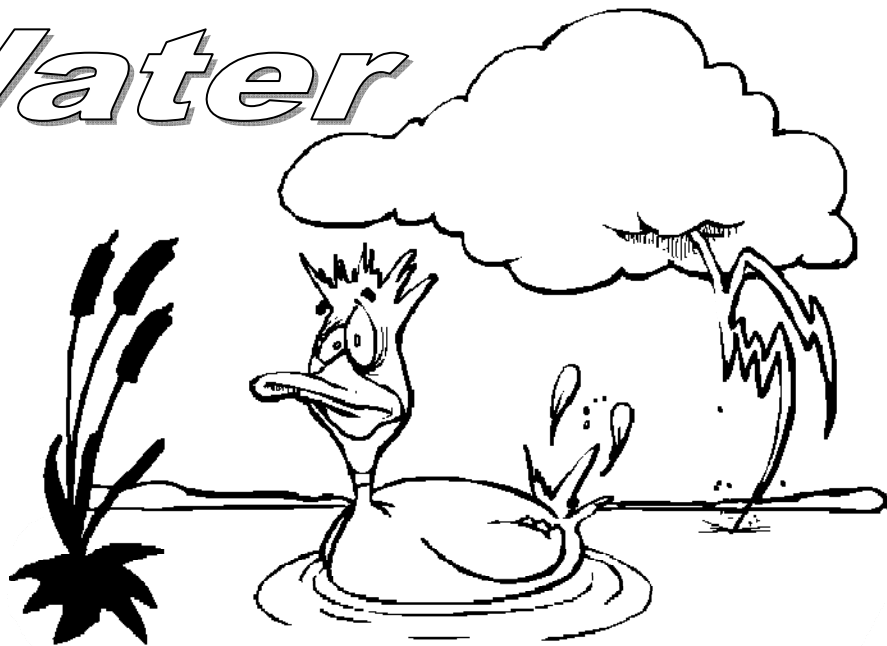
*Wastewater*





*Groundwater*

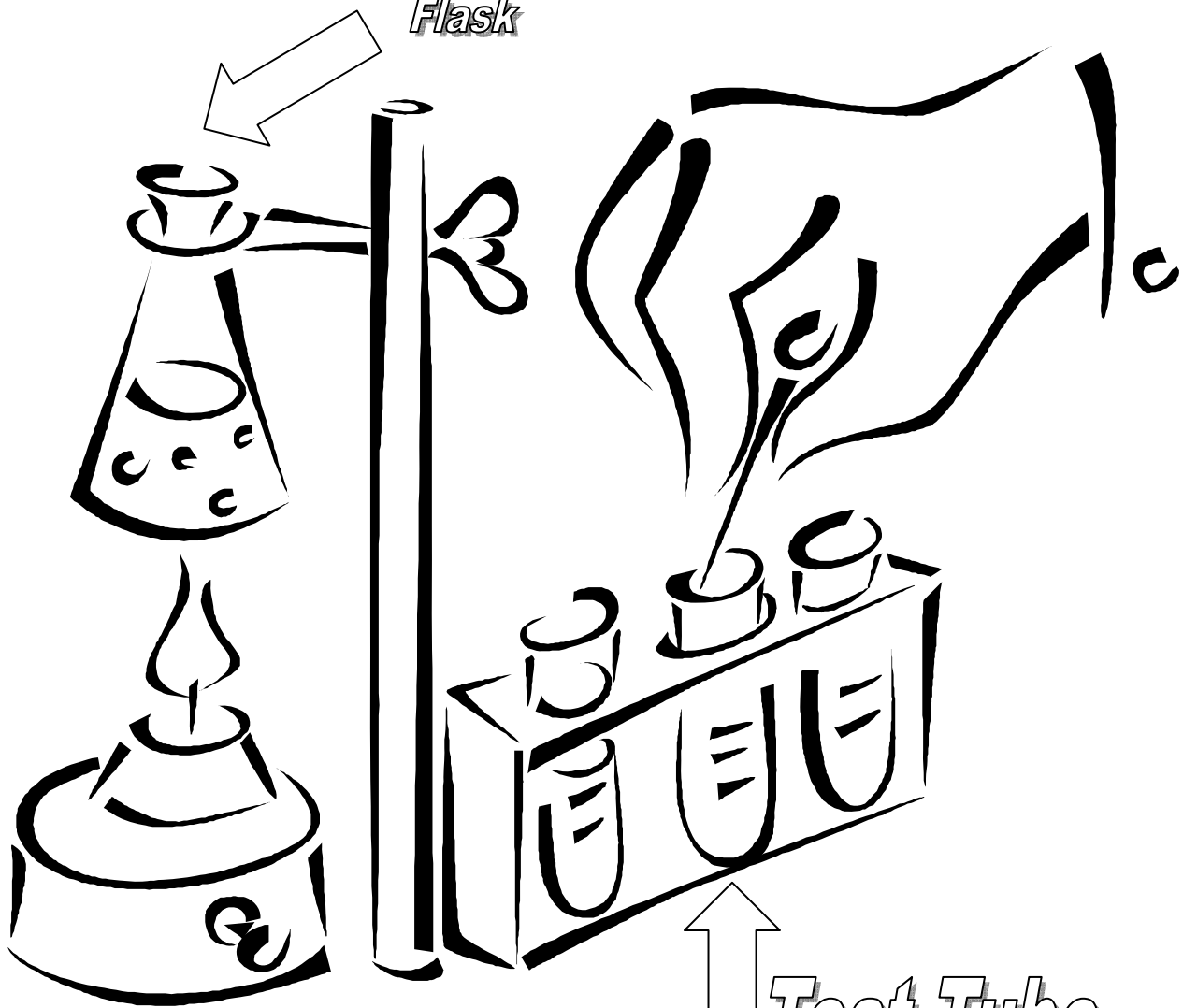
*Surface  
Water*



*We Use!*

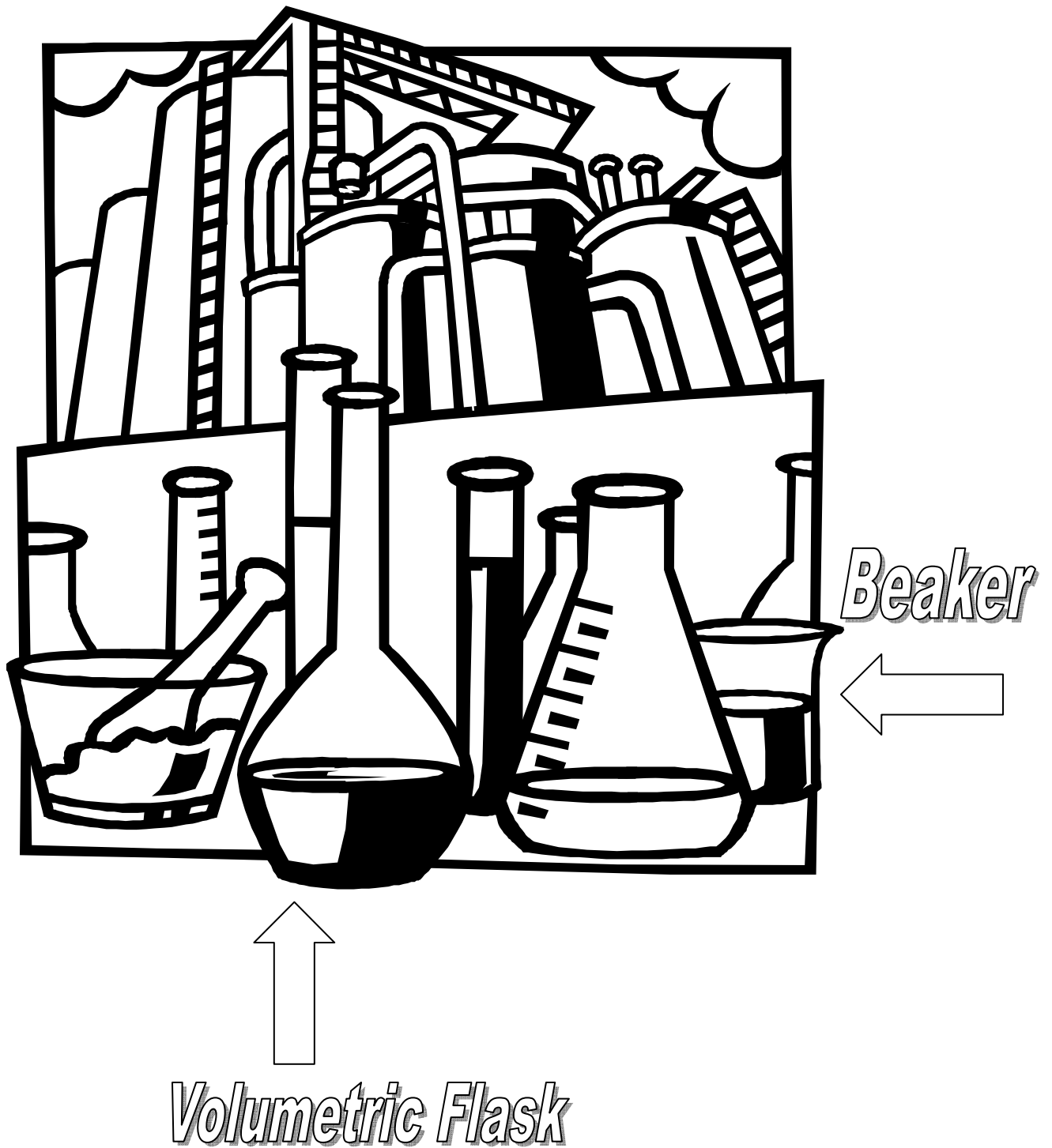
*Laboratory Equipment*

*Erlenmeyer  
Flask*



*Test Tube*

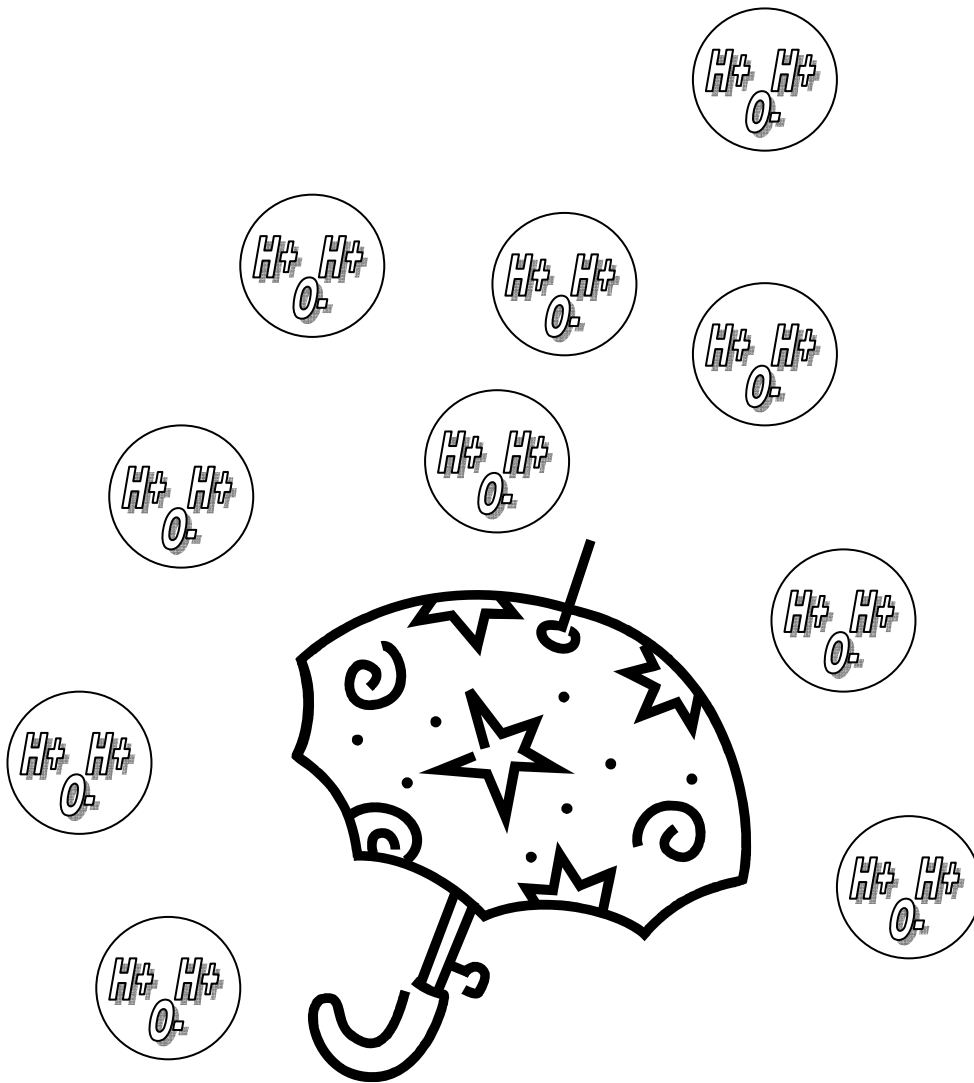
*Bunsen Burner*



# What is water made of?

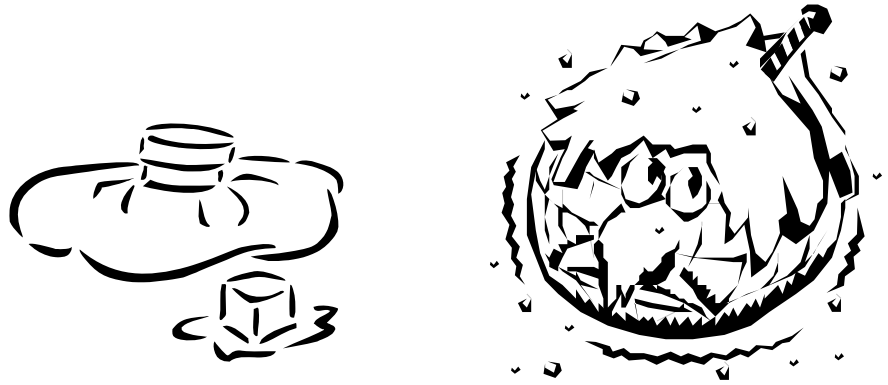
$H^+$   $H^+$  2 Hydrogen Atoms

$O^-$  1 Oxygen Atom



# Water can be in 3 forms

Ice



Water



Steam



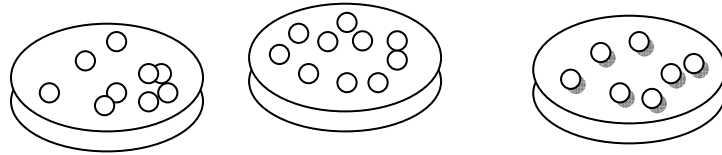


*The chemists test the water to see if it is safe;*

*For discharging the treated wastewater to the river or golf course*

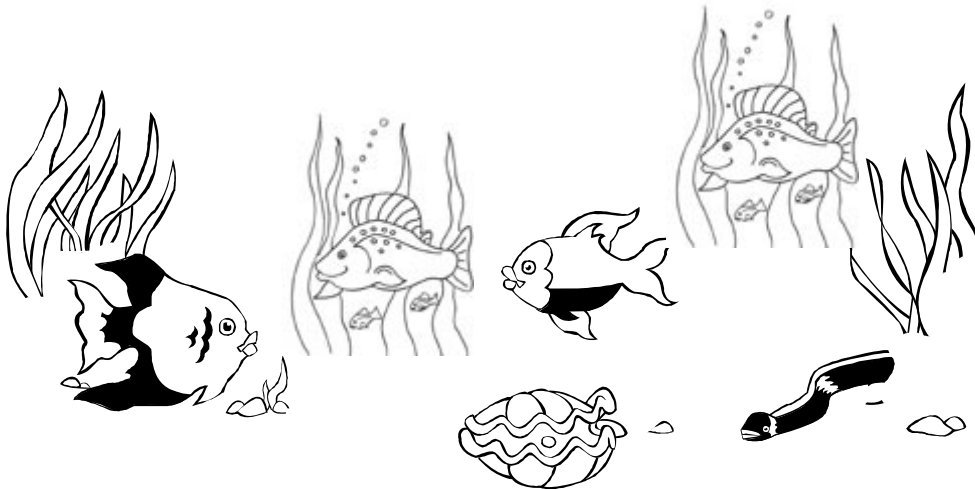
*Katie tests the water for microorganisms*

These bacteria, called **fecal coliforms**, are not necessarily harmful, but they usually hang out with some bad characters like viruses and pathogens, which can make you sick. The major sources of fecal coliforms are failing septic systems, wastewater treatment plant discharges, and animal waste (which covers a big range from Pup's droppings to cow manure).



*Tom and Heather test for nutrients*

The two major nutrients scientists measure are **nitrogen** and **phosphorus**. The presence of too many nutrients can hurt aquatic organisms by causing lots of algae to grow in the water. Nutrients can also affect pH, water clarity and temperature, and cause water to smell and look bad.



# *The chemists also check the pH*

pH - Scientists measure pH to determine the concentration of hydrogen in the water (The p stands for "potential of" and the H is hydrogen.) pH ranges from 0 (very acidic) to 14 (very basic), with 7 being neutral. Most waters range from 6.5 to 8.5. Changes in pH can affect how chemicals dissolve in the water and whether organisms are affected by them. High acidity can be deadly to fish and other aquatic organisms.

