

# The Water Cycle

Condensation

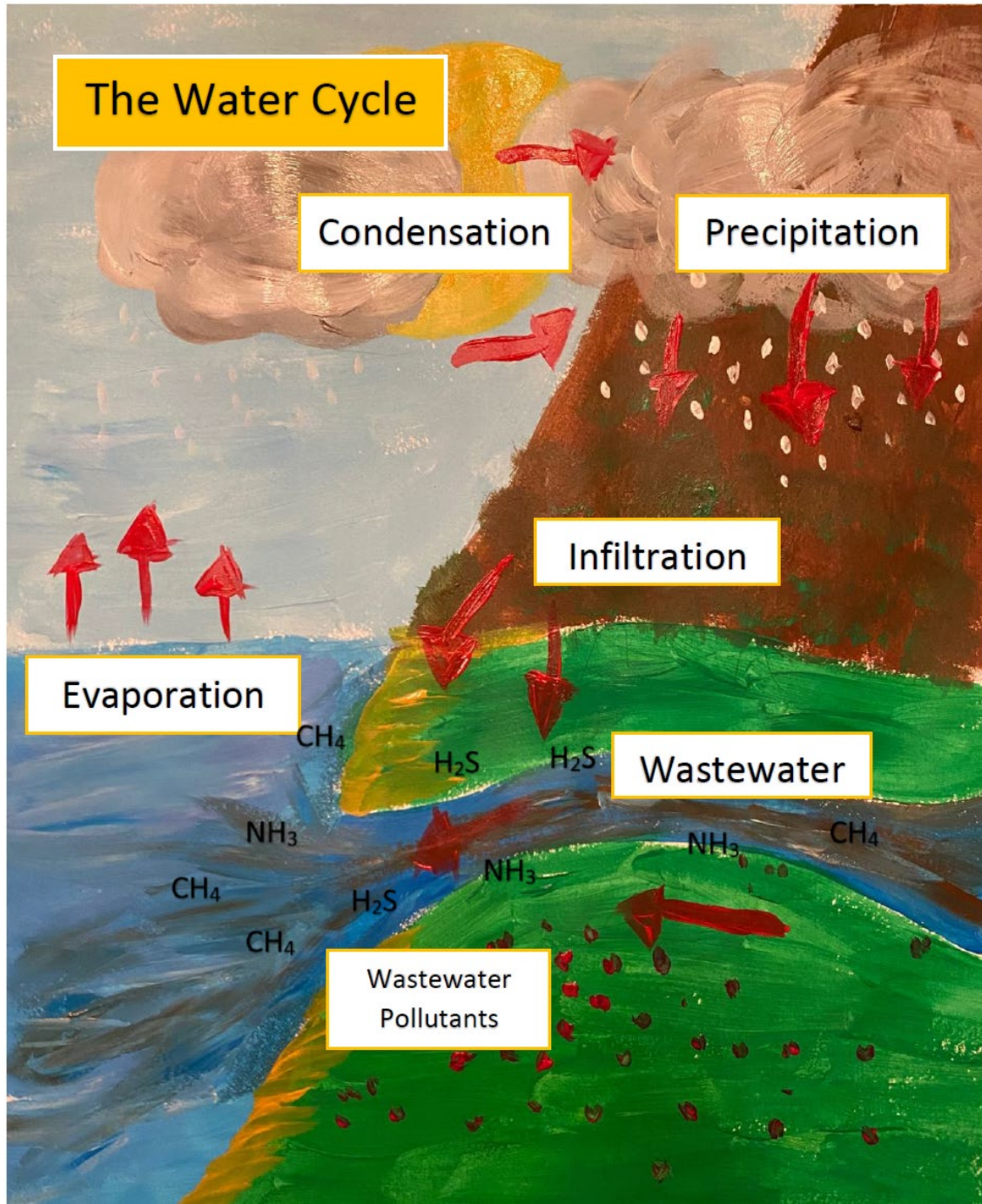
Precipitation

Infiltration

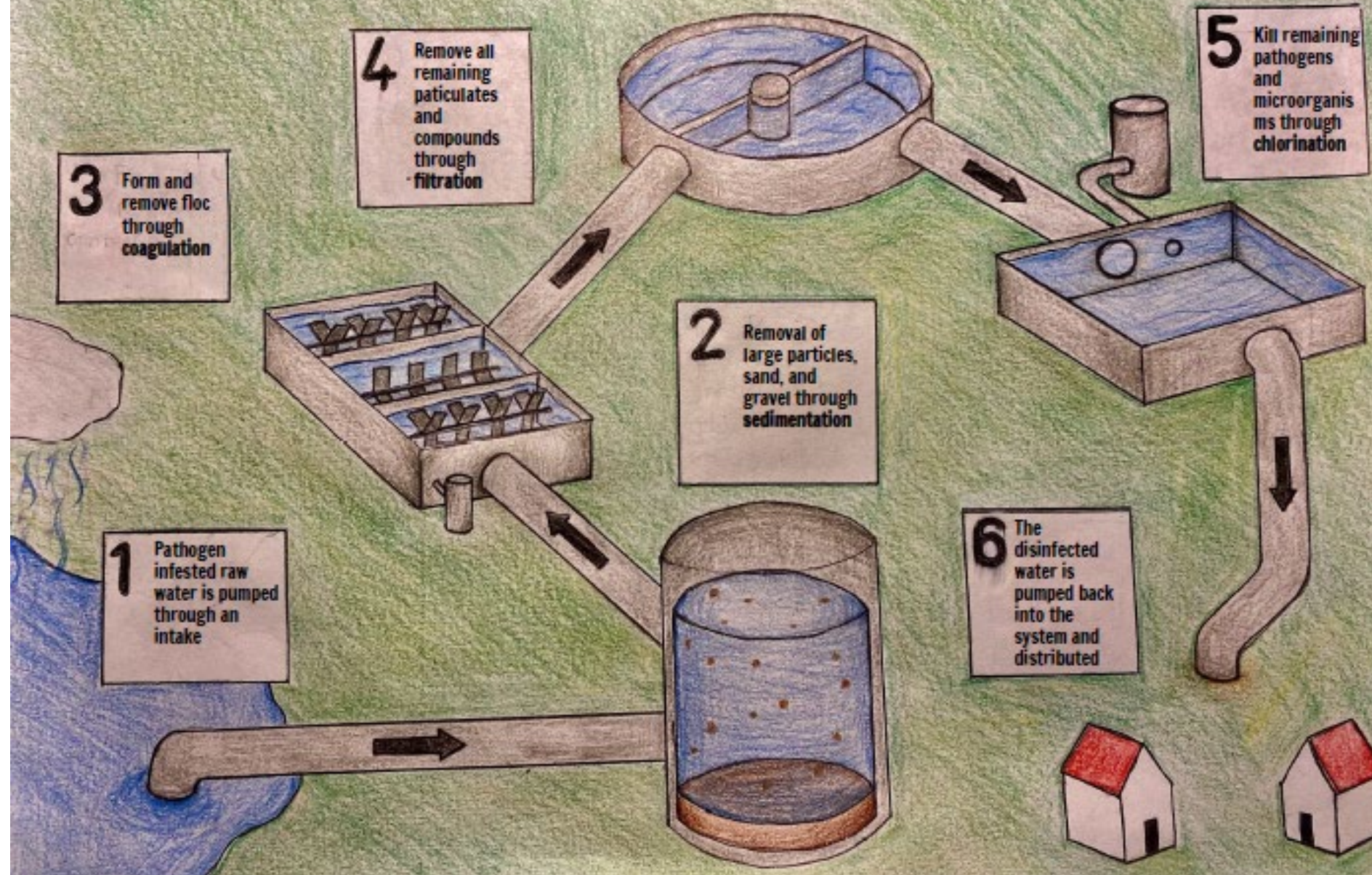
Evaporation

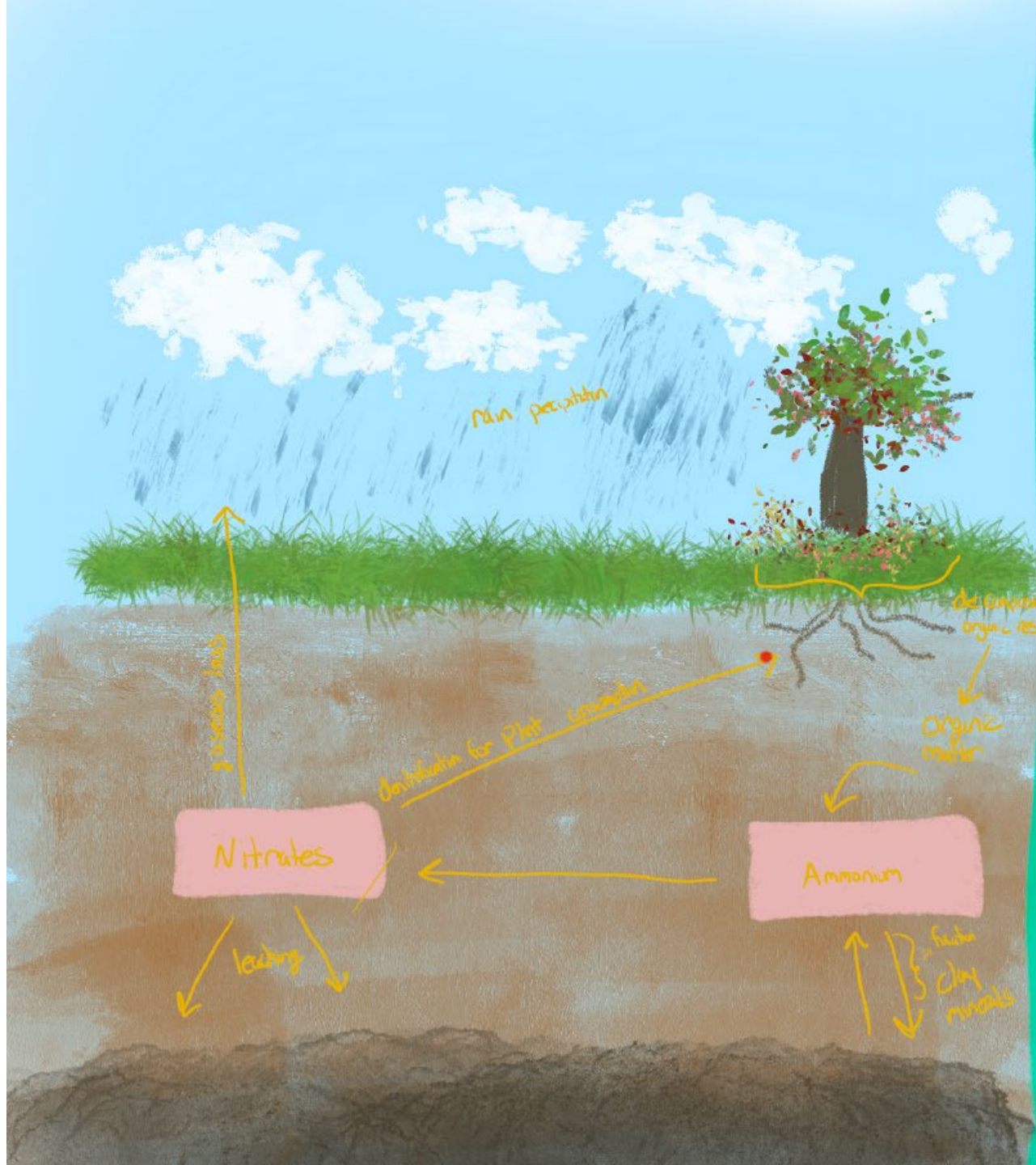
Wastewater

Wastewater  
Pollutants

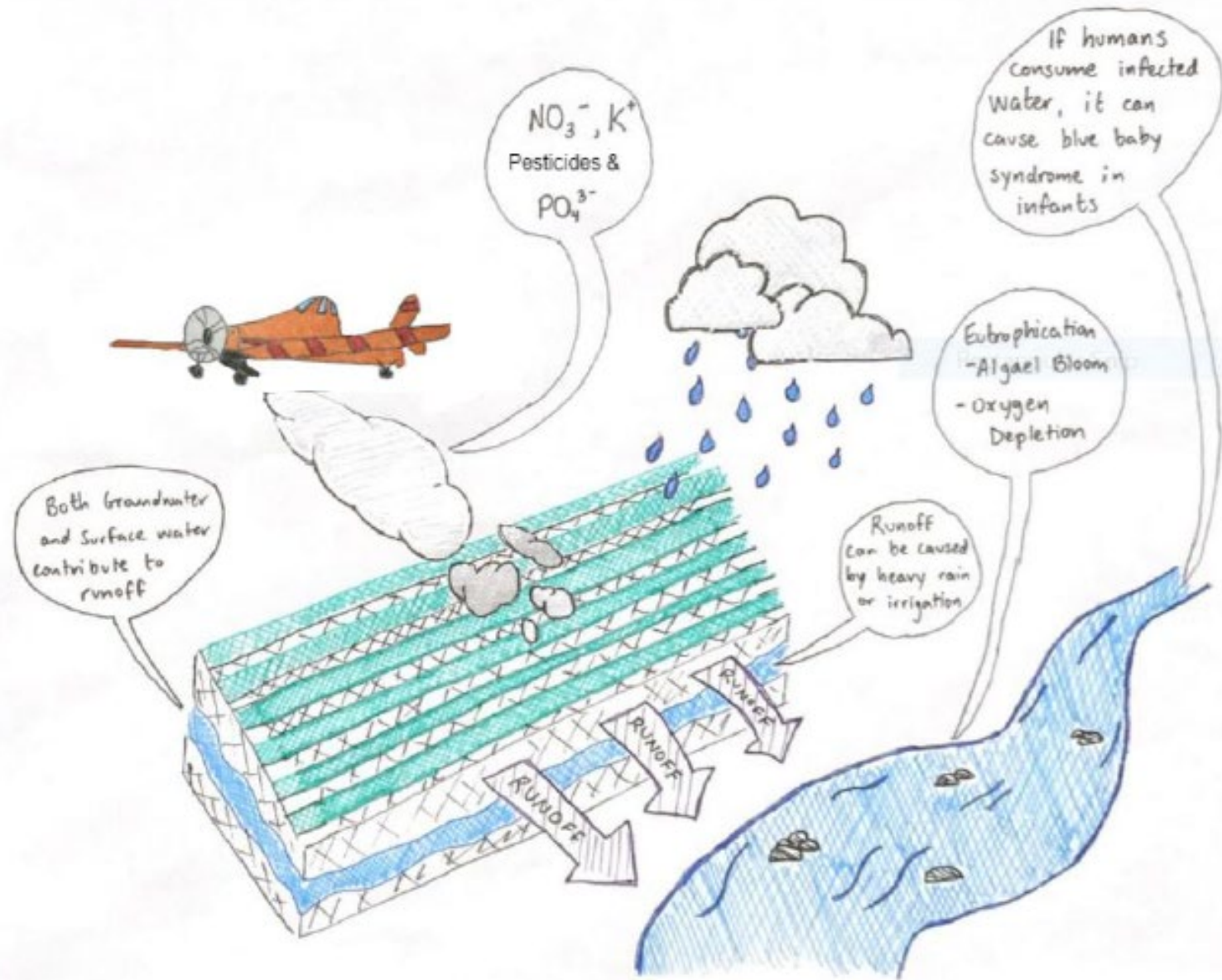


# Treatment of Pathogen Contaminated Drinking Water

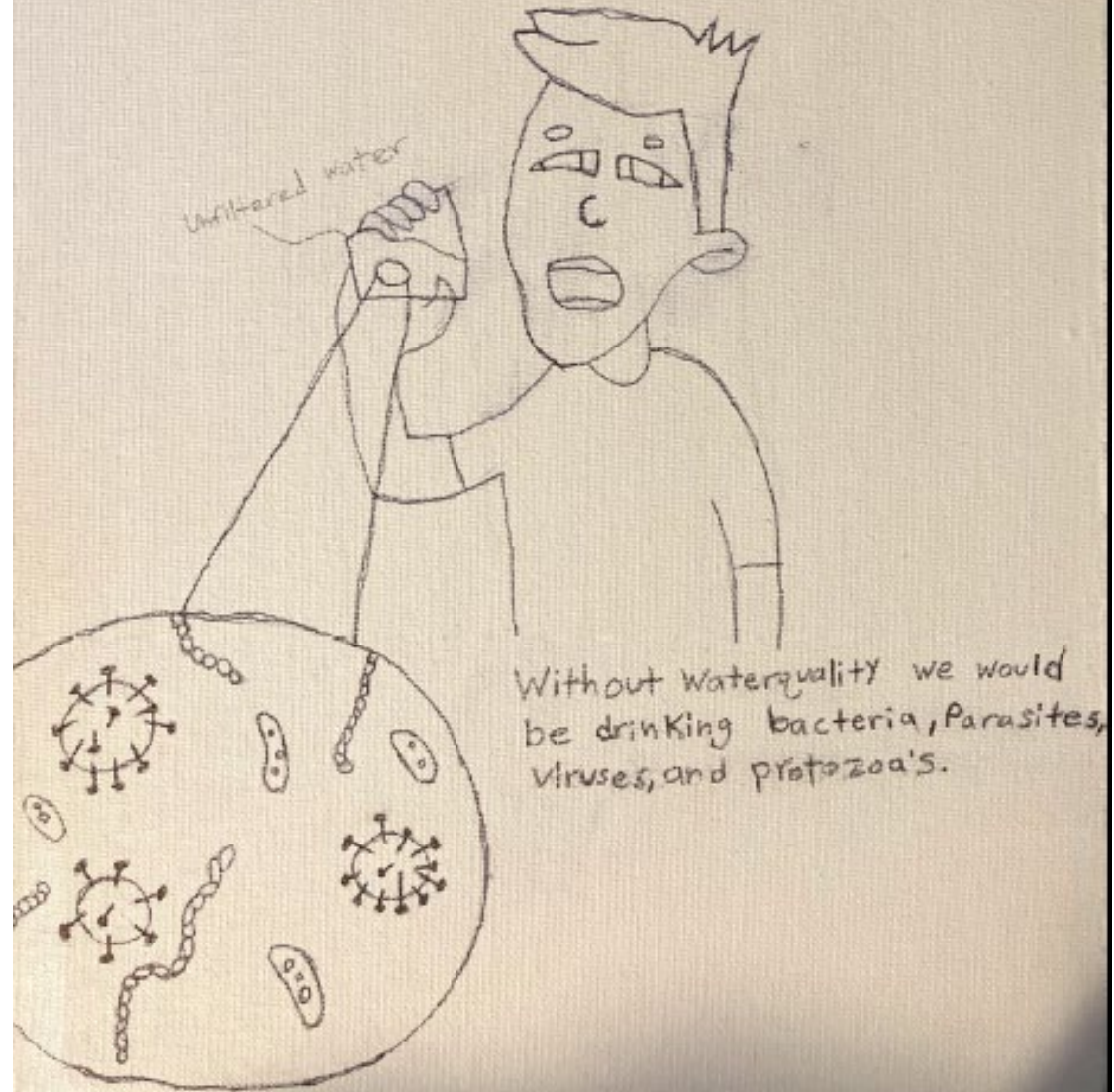




# The Nitrogen Cycle (N)



# Water Quality



# ACID MINE DRAINAGE

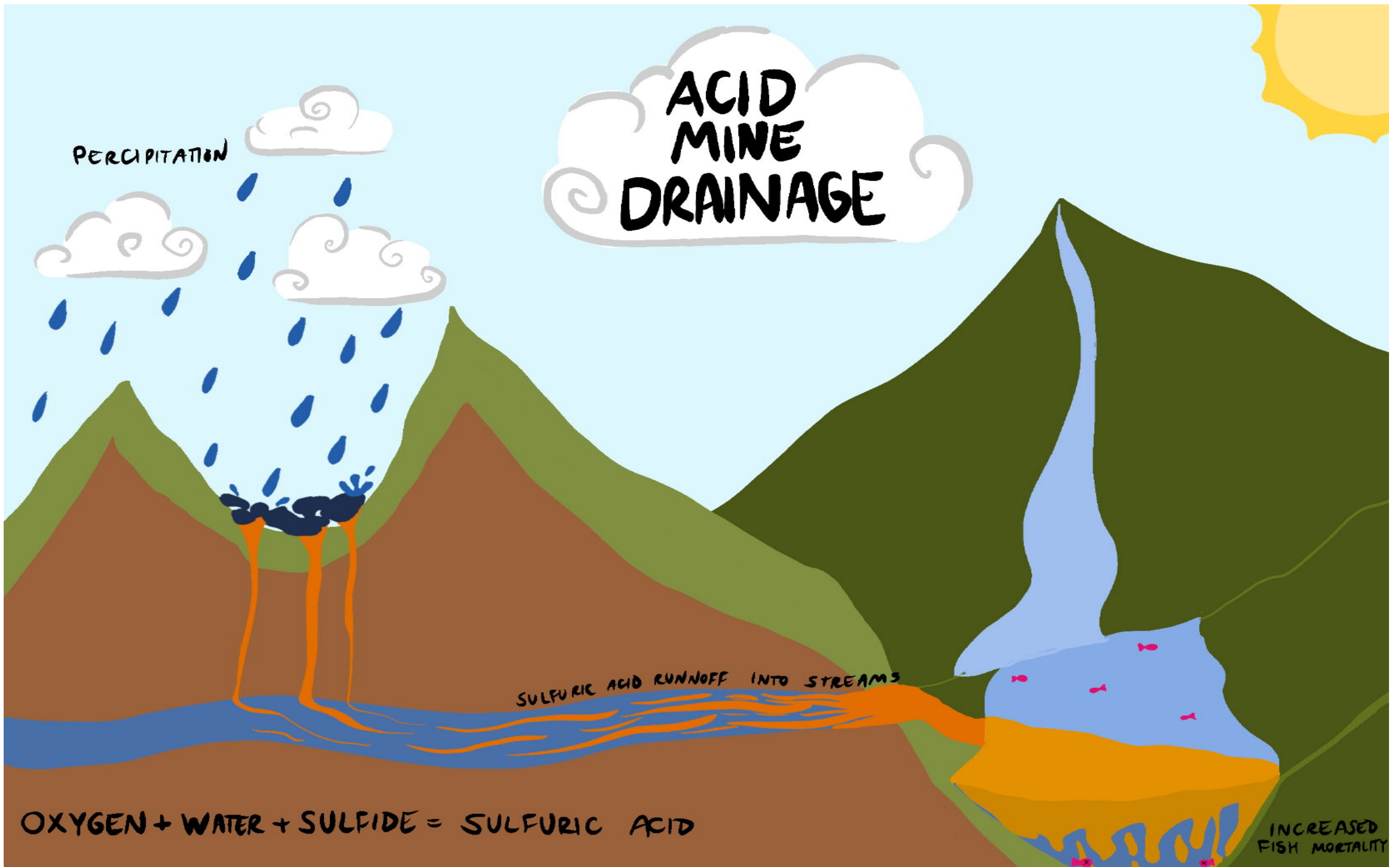
PRECIPITATION



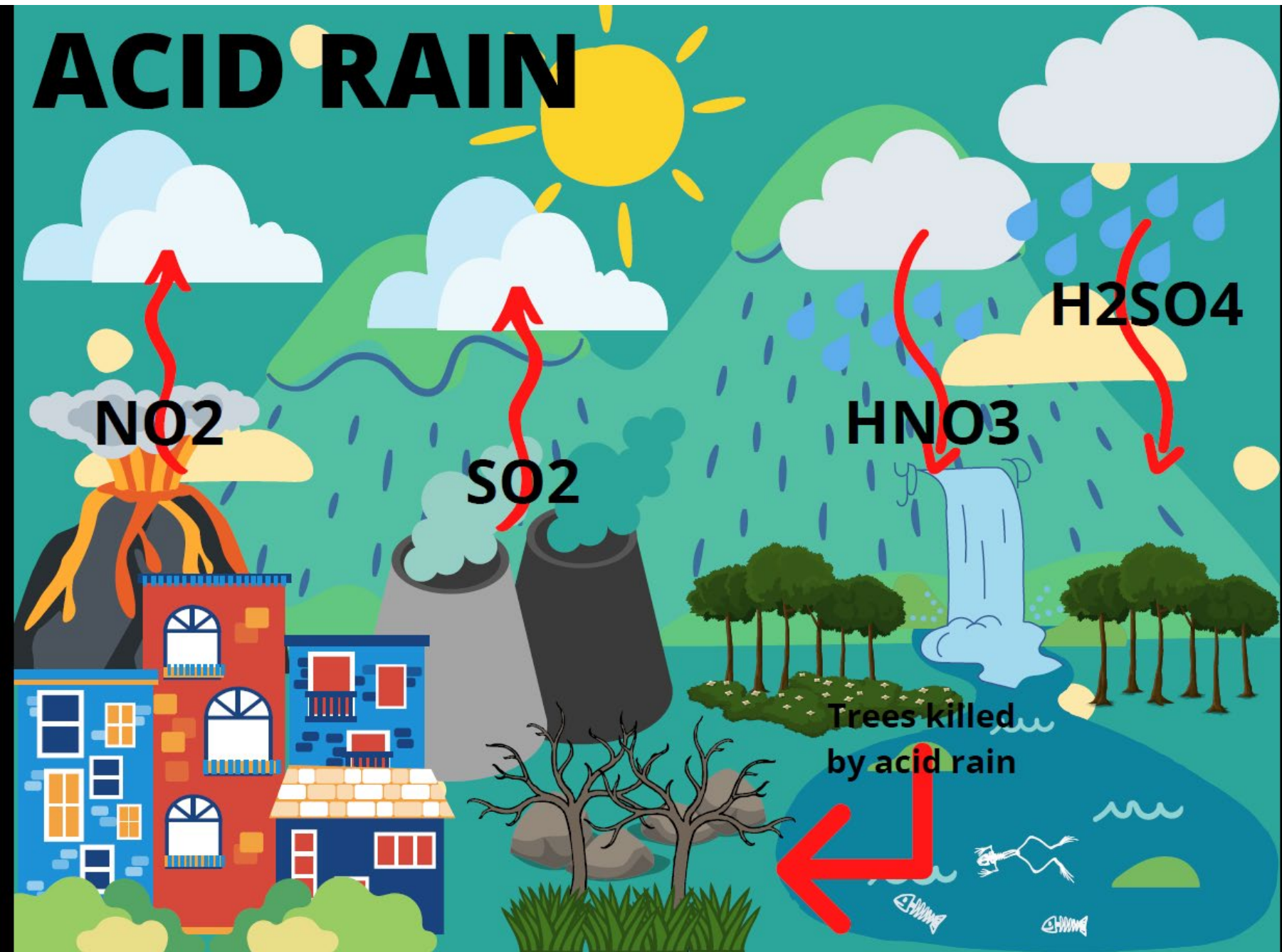
SULFURIC ACID RUNNOFF INTO STREAMS

OXYGEN + WATER + SULFIDE = SULFURIC ACID

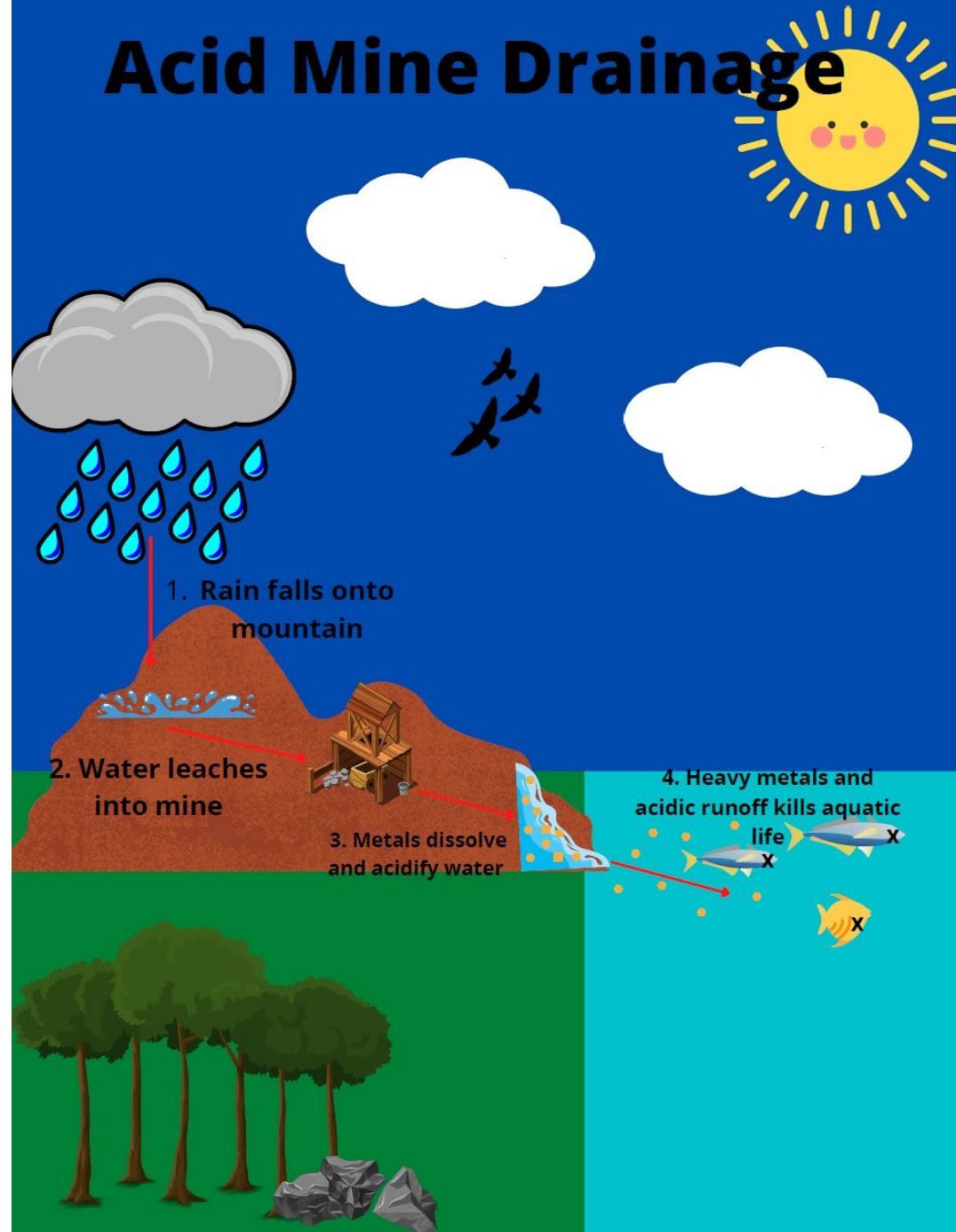
INCREASED FISH MORTALITY



# ACID RAIN

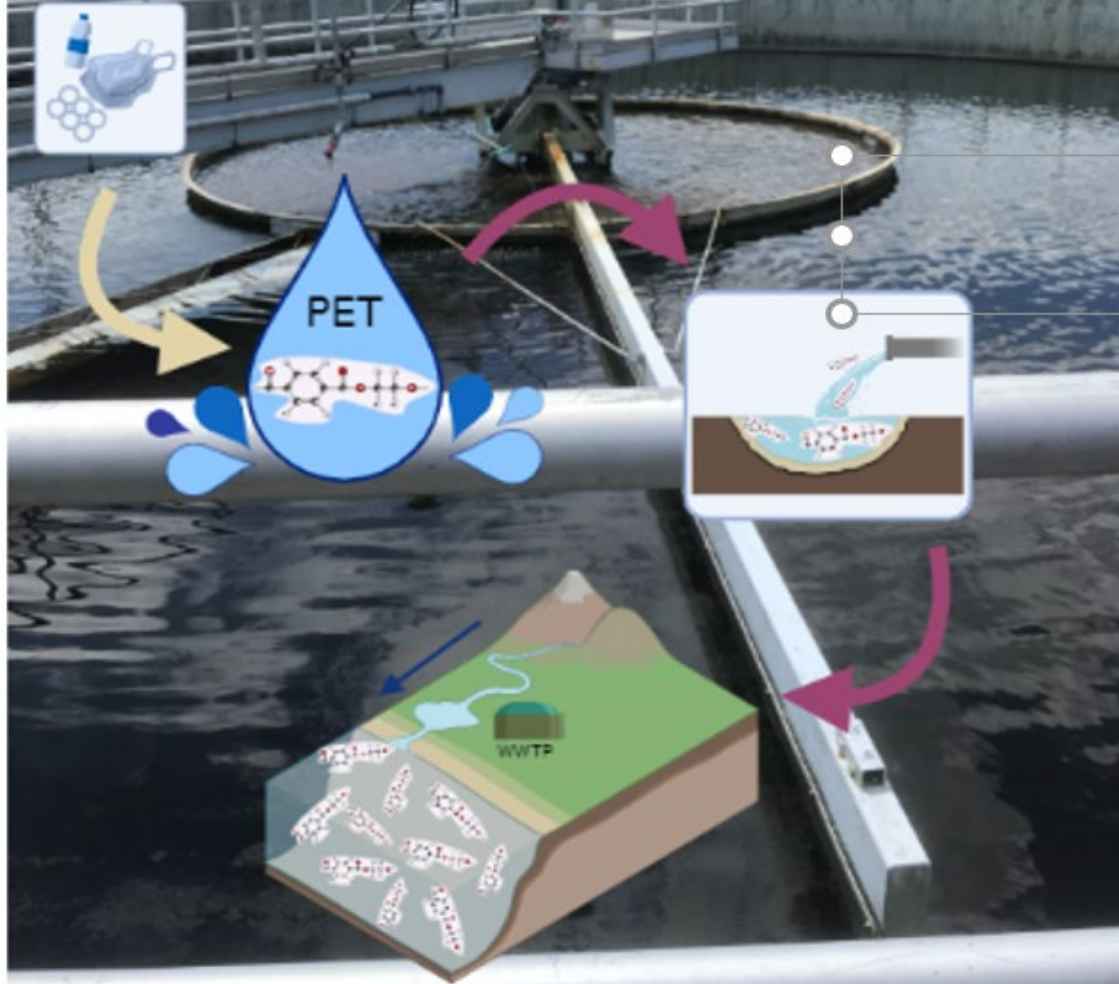


# Acid Mine Drainage





Microplastics unaddressed by traditional wastewater treatment plants contribute to oceanic pollution



# Protect Our Waterways



High D.O.

Low B.O.D.



Organic/  
Inorganic  
Compounds

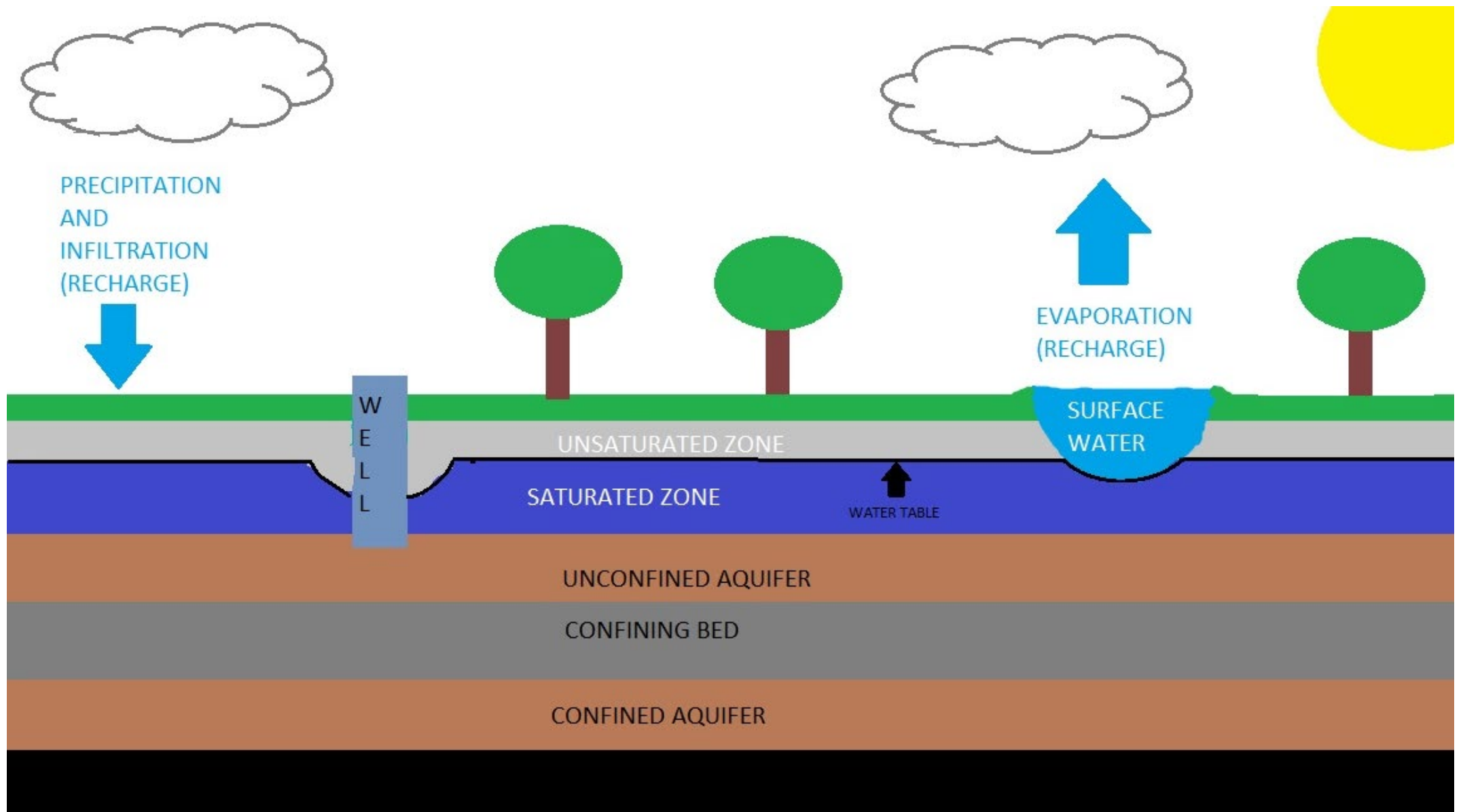
Low D.O.

High  
B.O.D.

Text  
SWIMMING  
PROHIBITED

**KEEP  
OUT**

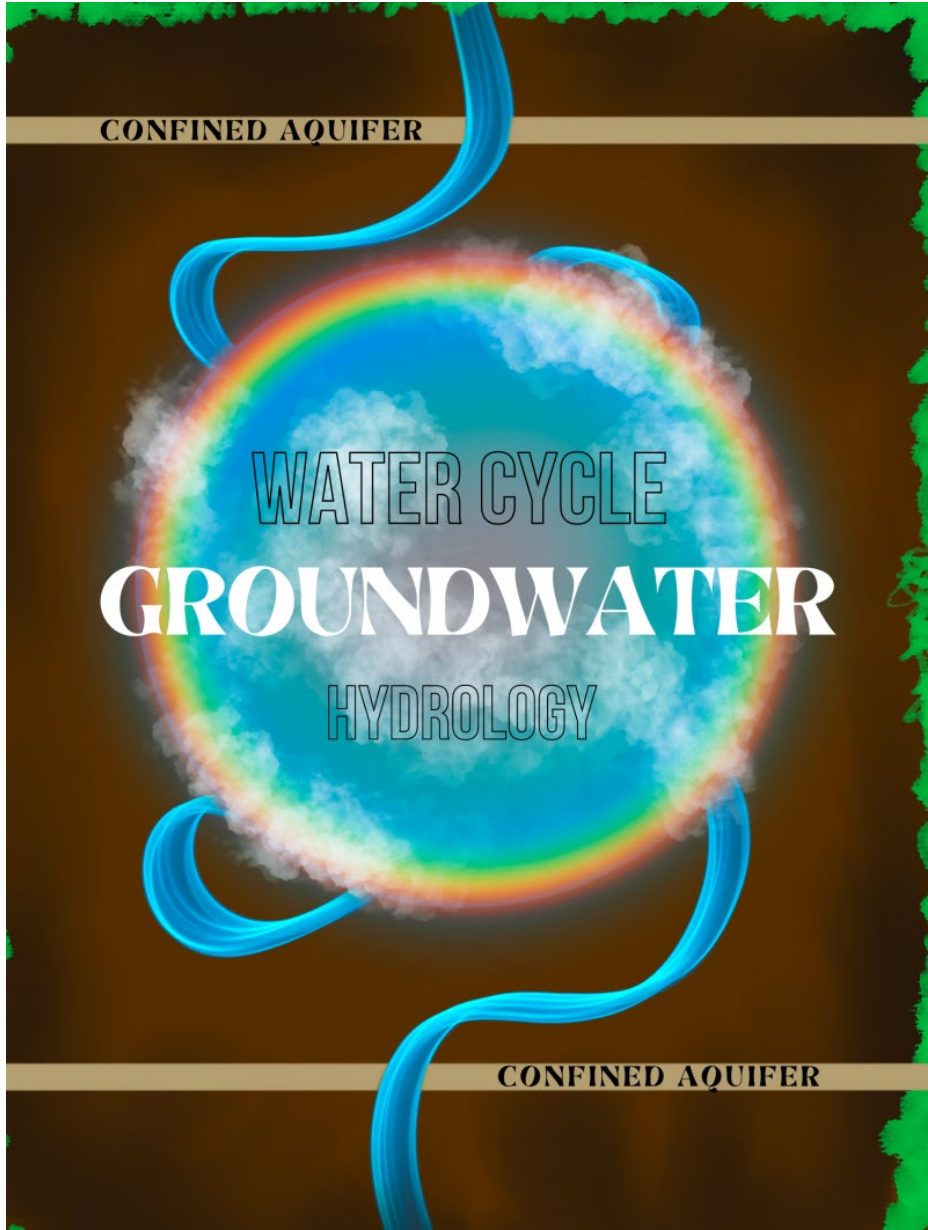
Untreated  
Wastewater



# Environmental Engineering



Water  
Filtration



CONFINED AQUIFER

WATER CYCLE  
**GROUNDWATER**  
HYDROLOGY

CONFINED AQUIFER

# *The Importance of Proper Waste Disposal In The Water Treatment Process*



All life on Earth requires water, especially us, and due to how many of us there are, there is quite a demand.

Water cycles through the ground, air, and living organisms. Along it's way, it can gather up many harmful things to us, so we have to clean it before we use it.

We have engineered a treatment process for our reuse of water, removing things like solids and potentially harmful bacterium. But the products of cleaning our water must be disposed of and includes things harmful to other lifeforms.

These by-products cannot just be thrown somewhere else, that runs the risk of contaminating groundwater, ultimately harming the animals and plants that use that water.

We have to share the planet, so we should not let our own maintenance interfere with theirs!

Atmosphere – stores water

Condensation: phase change of water from vapor to liquid/solid

**Hydrologic Cycle**  
**Besart Hoxha**  
**ENVE 4810**



Precipitation: Water falls from atmosphere onto land/water sources

Evaporation: phase change from liquid to gas state, occurs on surface waters, land, rocks, trees, etc.

Water – stores water

Transpiration: Water from plants is transferred to atmosphere as water vapor

Runoff: Flow from watershed to separate body of water

Infiltration: water seeping through surface

Land – stores water



