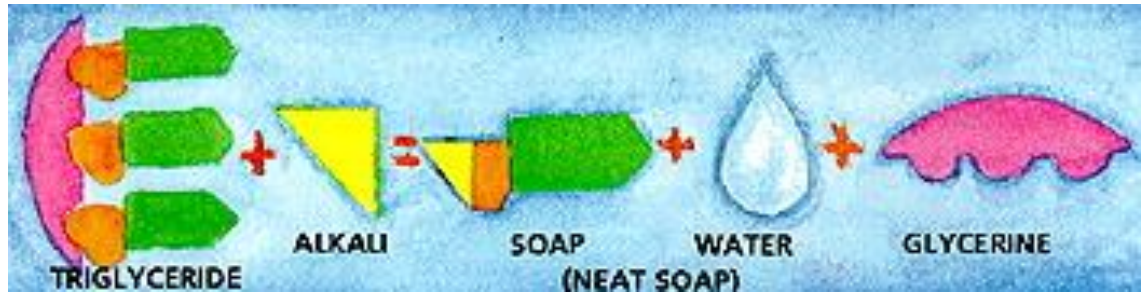


Natural vs. Chemical Cleaners

How are cleaners & soaps made?

- Made by combining plant or animal **fat** and a **base**, NaOH or KOH
- These are very strong **bases**



Types of Soaps

- If the base is NaOH , a sodium soap is formed
 - These soaps are called **HARD**
- If the base is KOH , a potassium soap is formed
 - These soaps are called **SOFT**
 - Used in liquid hand-soaps, shaving cream

What happens to the chemicals?

Where do chemicals end up?

- waterways inc. streams, lakes, ponds....

Household waste water contains?

- bleach, cleaners, ammonia, chlorides....

What do these wastes do?

- promote growth of algae

Where can they end up?

- in our DRINKING water!!!



How can we make “cleaner” cleaners?

Most common ingredients

- Lemon juice
- Vinegar
- Olive oil
- Baking soda



Lemon Juice



- Great deodorizer
 - Takes away stink & leaves pleasant smell
- Highly acidic
 - Breaks down scum & water marks
- Rinses away – no residue





Vinegar

- Acidic
 - Tough on grime
- Very strong
 - Water down for best results
- Does not leaves streaks
 - Good for windows & glass
- Great fabric softener
 - Good for sensitive skin



Olive Oil

- Natural oil
 - Wood polish, no residue
- Neutral
 - Gentle on metal, leather....



Baking Soda



- Natural deodorizer
 - Removes nasty smells
- Makes slightly basic paste with water
 - Cuts through grease



Use the Smarter Science template
to design a lab to answer the
question -
**“Do natural cleaners work as
well as chemical cleaner?”**

