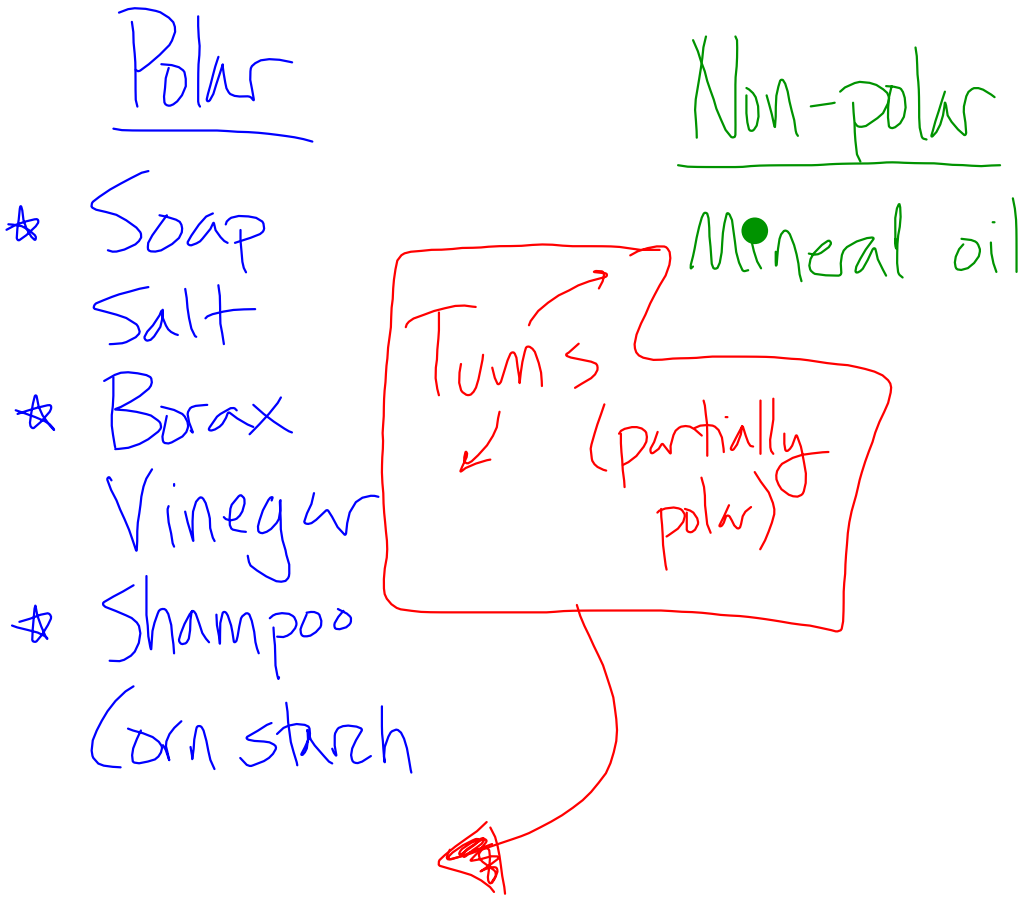
Polar
Soap
Salt
Borax
Vinegar
Shampoo
Corn starch
Non-polar
Mineral oil
Tums
(partially polar)

How does our understanding of polar & non-polar substances help us understand why we don't collapse into blobs of goo?

- Our bodies take advantage of chemistry to make sure that things that would mix are kept separate
- Our cells are packaged so that the polar cell contents are surrounded by a non-polar container
- Bones are made of a substance similar to Tums – they don't mix well with anything

How are organisms assembled into parts that don't dissolve into one another?

CHEMICAL REACTIONS

Molecules inside of our body react with raw materials to create

- → Polar substances
- → Non-polar substance
- → Materials that are strongly attached

Today we're going to look at six chemical reactions:

- Sodium chloride ($NaCl$) + O_2 → Fire +
- Potassium chloride (KCl) + O_2 → Fire +
- Calcium chloride ($CaCl$) + O_2 → Fire +
- Barium chloride ($BaCl$) + O_2 → Fire +
- Cobalt chloride ($CoCl$) + O_2 → Fire +
- Copper chloride ($CuCl$) + O_2 → Fire +

Safety:

- Everyone wears goggles & aprons
- Follow instructions - be safe
- Keep the chemicals contained
- Let Bregar clean up spills
- Be respectful of fire / hot materials or tools

Instructions:

- Work in groups of 4 - all should write down observations
- Wet the wire loop & wash away residue
- Dip wire into container & coat with chemical
- Put loop into bunsen burner
- Observe: COLOR, sparking, smell, misc.
- Quickly clean & cool wire in running water

- Rinse, brush, & dry loops & place on cart
- Cap chemicals & place on cart
- Wipe tables thoroughly with wet paper towels
- Clean sinks with paper towels ☆
- Wash hands/arms with soap & water
- Goggles & aprons neatly put away ☆

Last step:

Find (online) & write the complete chemical reaction for each test.

$$2NaCl + 3O_2 \rightarrow 2NaClO_3$$