

## 1 | Alright, let's talk about water.

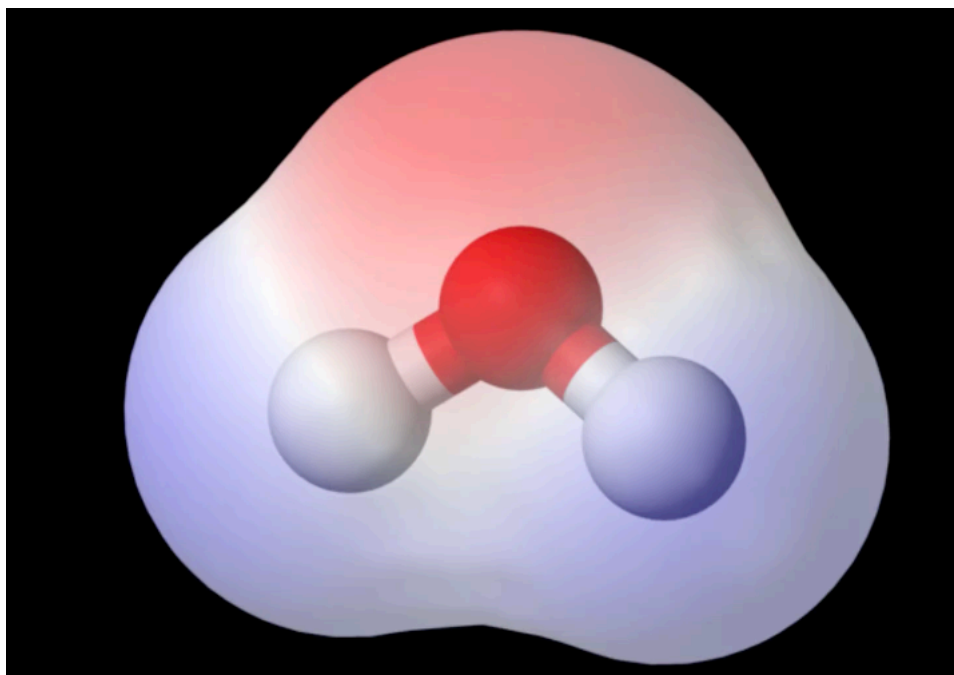


Figure 1: Watah!

### Intra-Molecular water bonds

- As we know (or looked up from the PTable)
- Hydrogen has electronegativity of 2.20, and oxygen has EN 3.44
- The difference  $>0.4 < 1.7$  makes these bonds **polar covalent**

See [\[KB20200826142427\]](#), bonding review

### Why is ice less dense?

- Freezing usually bring new ordering of molecules to make it paced
- But! Not the case for normal water because of hydrogen bond
  - Strong 6-ring Hydrogen bonds in ice prevents shrinking
  - Empty space filled with air, making it less dense

### Why do I care?

Ice floats! Causing beautiful ice effects that the ecosystem uses

- Pseudo-landmass
  - Antarctica
  - Animal habitat
- Ice reflect incoming light ("albeto")

- Bounces energy off
- Cools the water

## Inter-Molecular water bonds properties

See [\[KB20200826145026\]](#), properties of water.

## 2 | So, why is water the chosen liquid?

See also [\[KB20200826145026\]](#) Properties of Water

- Liquid at Earth temperatures
- Sticky => strong bonds that help water hold together + resist change in temperature (hence why AlcaholLand cannot exist).
  - Varing te
- Is universal solvent