**Source:** [KBBiologyMasterIndex]

# 1 | Bio-Molecules Quiz Review

## 1.1 | Paul's Review Sheet

… is here

### 1.1.1 | Carbohydrates

- Set 1, carbs. See Luke De's video + [KBhBIO101Carbs]
  - *Glucose vs. fructose* — both monosacharrides, one is a 6-carbon ring and one is a 5-carbon ring
  - *Mono vs. di. vs. polysaccharide* — carbohydrates made out of a single, double, and multiple monomer (single-unit) carbohydrates
  - *Starch vs. glycogen vs. cellulose* — lots of alpha glucose in less branches, lots of alpha glucose in more branches, lots of beta glucose in organized lattice respectively.
    - Starch — plant food reserve
    - Glycogen — animal energy reserve
    - Cellulose — cell wall in plants
- Set 2, lipids. See Luke De's video + [KBhBIO101Lipids]
  - *Triglyceride vs. fatty acid vs. phosophilid* see [KBhBIO101StructuresofCarbs]
    - Glycerol => a fatty acid
    - Triglyceride => three of 'em above
    - Phospholipid => two fatty acid + phosphate head
  - *Saturated vs unsaturated fatty acids* see also [KBhBIO101StructuresofCarbs]
    - Saturated Fats => no double bonds in the carbon chain of fatty acids — think! butter
    - Unsaturated Fats => double bonds in the carbon chain of fatty acids — think! olive oil
- Identify functional groups
  - Amino acid groups — see [KBhBIO101AminoAcids]
    - carboxyl — O=C-R-OH
    - carboxylic acid — H-O-C=O (left side of backbone)
    - carbonyl — C=O — part of carboxyl
    - amide — RC(=O)NR′R″ (frequently shown in side chains of amino acids — see Amine)
    - amino/amine — H3N+ (right side of backbone)
    - hydroxyl — OH group. Need I say more?
    - ester — take a carboxylic acid and replace the hydrogen with a R-O group #ASK
    - ether — R-O-R structure. Commonly shown as as an alcohol group (H-O-C) as part of the carboxyl
- Monomers vs Polymers [KBhBIO101StructuresofCarbs]
  - Monomer — single molecule (such as a monosacchride) that could be chained together to make polymers
  - Polymers — complex molecues built from monomers
  - Building polymers — dehydration reaction — taking out water molecules
  - Destructing polymers — hydration reaction — adding in water molecules

### 1.1.2 | Cell Structures

- Prokaryotic vs. Eukaryotic
    - Prokaryotic cells — often in single-cellular element

## 1.2 | **Helpful review items**

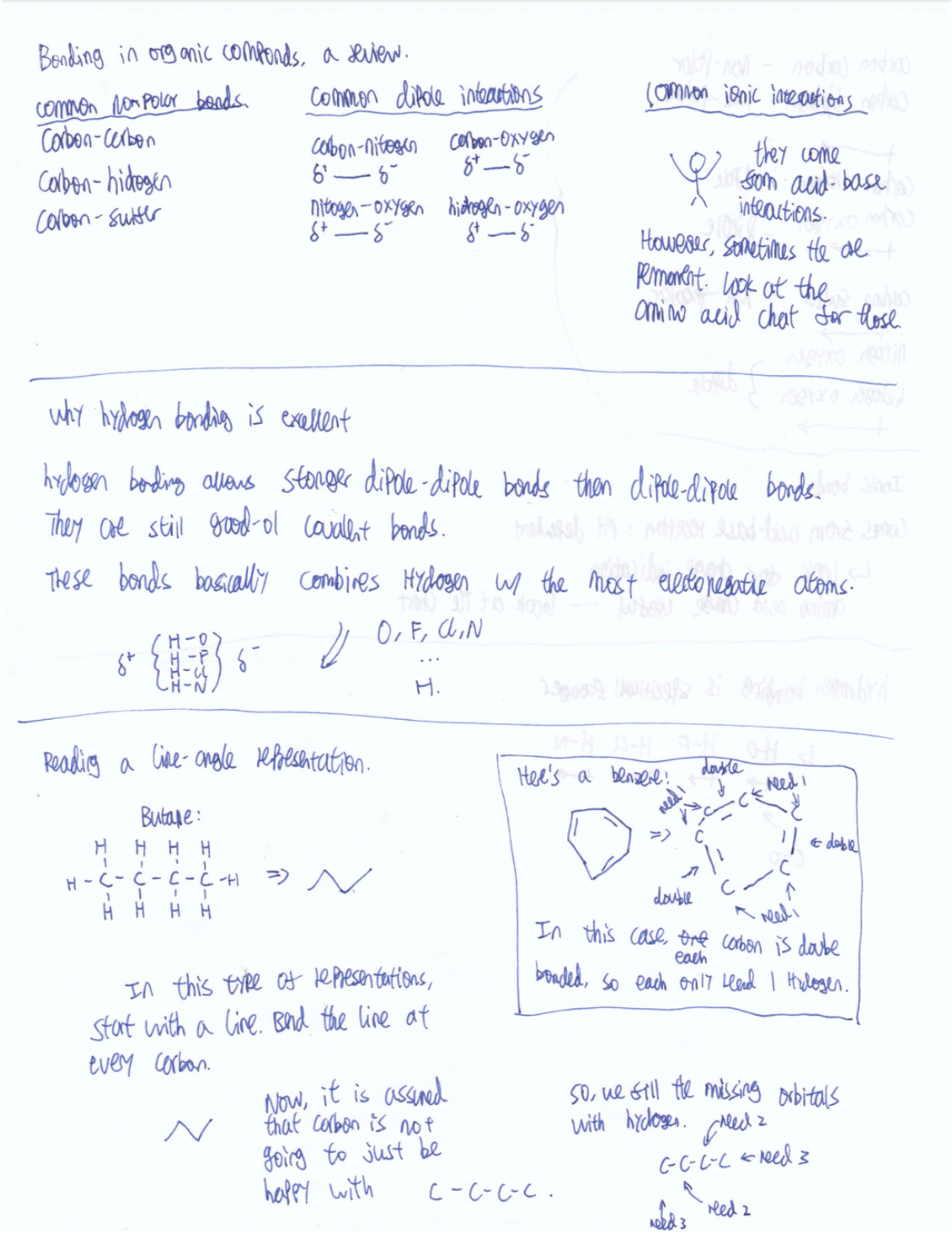


Figure 1: Screen Shot 2020-10-09 at 11.58.55 AM.png