1. Photosynthesis uses light energy from the Sun. This energy is transported in the form of photons (particles of light).
2. The light reactions take place in the thylakoid membrane of the chloroplast. The light reactions occur in the stroma.
3. Reactants and products are shown unbalanced
   1. photosynthesis: CO2 + H2O -> Glucose and O2
   2. Alcoholic fermentation: Glucose -> ethanol + 2 pyruvate + ATP
   3. Lactic acid fermentation: Glucose -> lactic acid and 2 pyruvate + ATP
   4. Cellular Respiration: Glucose + O2 -> CO2 + H2O + ATP
4. Glycolysis occurs in the cytoplasm, the Kreb’s Cycle occurs in the membrane.
5. A blue object appears blue because it reflects blue light and absorbs all other wavelengths of light.
6. The protons (H+) that drive oxidative phosphorylation (electron transport chain) in photosynthesis come from water. H2O is split into O2, H+, and 2 free electrons.
7. During glycolysis, glucose is broken down. This results in a net gain of 2 ATP and also the production of 2 Pyruvate.
8. Lactic acid fermentation, alcoholic fermentation, and cellular respiration all include glycolysis.
9. ATP output:
   1. Lactic acid fermentation: 2 ATP
   2. Alcoholic fermentation: 2 ATP
   3. Cellular Respiration: 38 overall for the whole process (glycolysis->electron transport chain) in **ideal** conditions
   4. Photosynthesis: 18, but they are used to produce glucose
10. ATP is synthesized by adding a free phosphate group to ADP, storing the energy in the bond.