**2.7 Fats and Oils**

- Triglyceride: an ester of three fatty acids and a glycerol molecule.
- Fatty acid: a long chain carboxylic acid.
- Saturated fatty acid: only contains single bonds between the carbon atoms.
- Unsaturated fatty acid: can contain a mixture of single and double bonds between the carbon atoms. This will create a cis and trans configuration.
- Saturated fatty acids tend to be solids since they can pack tightly together. Unsaturated fatty acids tend to be oils since the cis/trans configuration prevent them from packing tightly together.
- Since a triglyceride is an ester, it can be hydrolyzed. If the triglyceride is hydrolyzed and a salt of the fatty acid is formed the process is called saponification.
- Saponification is the process used to make soap. Soap is a fatty acid with a non-polar tail and a polar head.
- Soap works by creating a micelle. The non-polar tail will dissolve in the fatty dirt and the polar head will dissolve in the water. This creates a free-floating colloid that can be flushed away without the fatty dirt reattaching to the substrate.

**Homework**

Practice 1,2,3,4,5 Questions 1,2,4,5,6,8