Reading for Activity 4.2
Chemical Reactions in Your Everyday Life

In class, you learned that atoms of substances rearrange and form new substances when a chemical reaction occurs. Chemical reactions do not only occur in the laboratory—they are present all around. In this reading, you will learn about a few more examples of chemical reactions found in everyday life.

Burning

Burning is a common type of chemical reaction that has many uses in daily life. For example, burning gasoline powers cars and trucks. When it burns, gasoline (C_8H_{18}) reacts with oxygen (O_2). The carbon, hydrogen, and oxygen atoms rearrange to form two substances: carbon dioxide (CO_2) and water (H_2O). Burning other fuels, such as natural gas and oil to power factories and heat homes, also produces water and carbon dioxide. The increasing amount of fuel that is burned to support our lifestyles in the last 150 years has contributed to a large increase in carbon dioxide in our atmosphere.

Figure 1: Filling up with gasoline

Figure 2: Rush hour

Cooking

Most cooking processes involve chemical reactions. For example, cake batter has different properties than a baked cake. When you heat the batter in the oven, chemical reactions occur and new substances are formed. The heat provides energy for the chemical reactions that take place as the batter, through baking, becomes a delicious cake. For example, the light brown top of the cake is the result of a chemical reaction involving the eggs in the cake batter.

The Interactions Project materials are being developed and researched with funding from the National Science Foundation (DRL-1232388) in partnership with Michigan State University.

Digestion

Chemical reactions happen not only when you cook but also when you eat. Many chemical reactions take place during digestion. As soon as you put food in your mouth, even before you swallow, your body starts to break down the food. As the food reaches your stomach and intestines, many chemical reactions occur to produce smaller, simpler molecules (such as sugar and fat molecules) that can be absorbed into your bloodstream and used for fueling the activities of life.

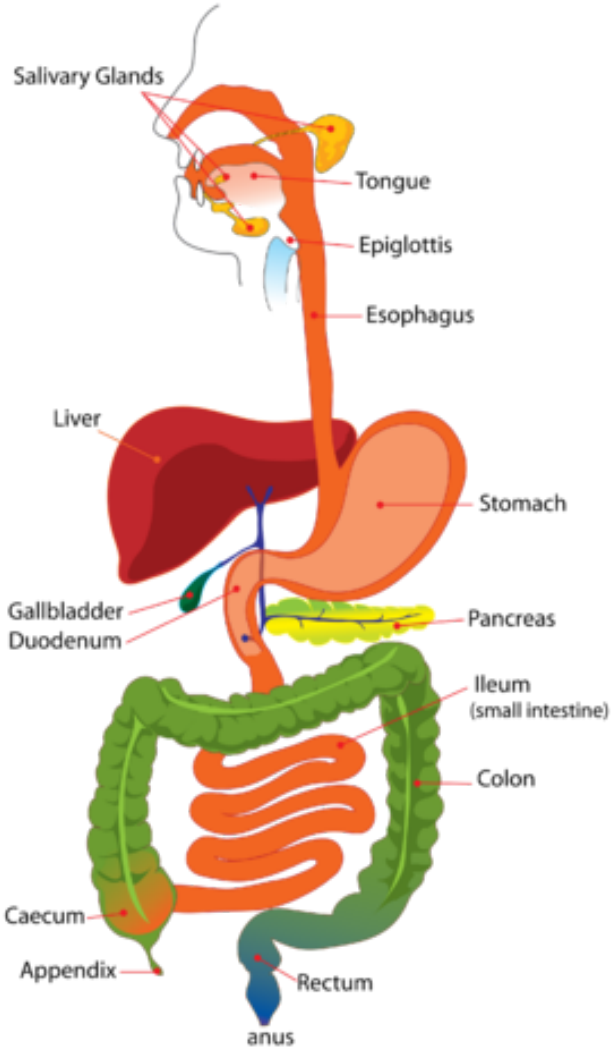

Figure 3: Components of the digestive system. Chemical reactions occur at each point in the digestive system.
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