Vocabulary: Identifying Nutrients

- Carbohydrate – an organic molecule containing hydrogen, carbon, and oxygen.
    - Carbohydrates are produced by plants during photosynthesis.
    - Carbohydrates include monosaccharides, disaccharides, and polysaccharides.
    - Carbohydrates are a major source of energy in the diet.

- Disaccharide – a sugar formed when two monosaccharide molecules are joined.
    - Sucrose, or table sugar, is a disaccharide. Other examples are lactose (milk sugar) and maltose.
    - None of the tests available in the *Identifying Nutrients* Gizmo can identify disaccharides.

- Lipid – a fat.
    - A lipid molecule usually consists of three *fatty acids* bonded to a "backbone" of *glycerol*.
    - Lipids are used as an energy source and as a building material for cells.
    - In the presence of lipids, Sudan Red solution will show concentrated spots of color.

- Monosaccharide – a simple sugar such as glucose or fructose.
    - A monosaccharide molecule usually consists of a ring of five or six carbon atoms that are bonded to hydrogen atoms and hydroxyl groups.
    - In the presence of monosaccharides, Benedict solution will turn from blue to pink.

- Polysaccharide – a complex carbohydrate such as starch or cellulose.
    - Polysaccharides are chains or branching structures composed of 40 or more monosaccharide molecules.

- Protein – a molecule composed of a chain of *amino acids*.
    - Proteins are an essential building block of muscles, skin, bone, hair, and most other body structures.
    - In the presence of proteins, Biuret solution will turn from blue to bright purple.

- Starch – a type of polysaccharide found in potatoes, rice, pasta, bread, and other plant-based foods.
    - In the presence of starch, Lugol's solution (iodine) will turn from yellow-brown to dark purple.

- Vitamins – organic nutrients needed in small amounts
    - Regulate body processes and perform chemical reactions
    - Water soluble vitamins (eg. vitamin C and the B vitamins) are not stored by the body and need to be consumed daily
    - Fat soluble vitamins (eg. Vitamins A, D, E, and K)are stored in the body's fatty tissue for further use
- Minerals – inorganic nutrients needed in small amounts
    - A variety of minerals are needed, including calcium, iron, phosphorus, copper, sodium, and zinc
    - Minerals are required for body processes (eg. Iron for oxygen delivery in blood) and structures (eg. Calcium for bones)
- Fibre – a complex carbohydrate called cellulose
    - Human digestive system does not break down fibre
    - Supplies bulk to help muscles move waste through the digestive system