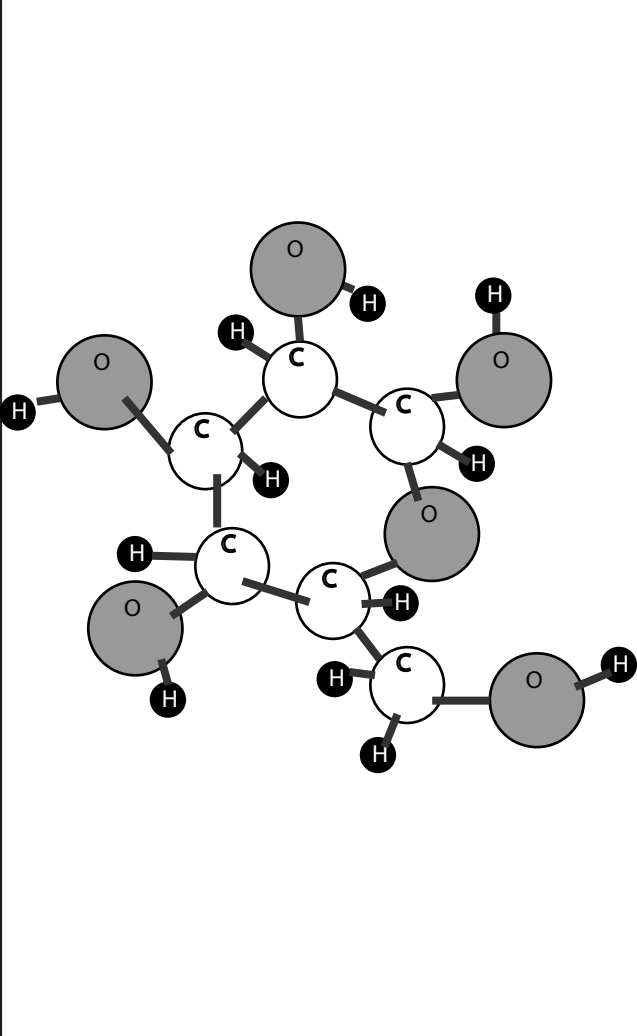
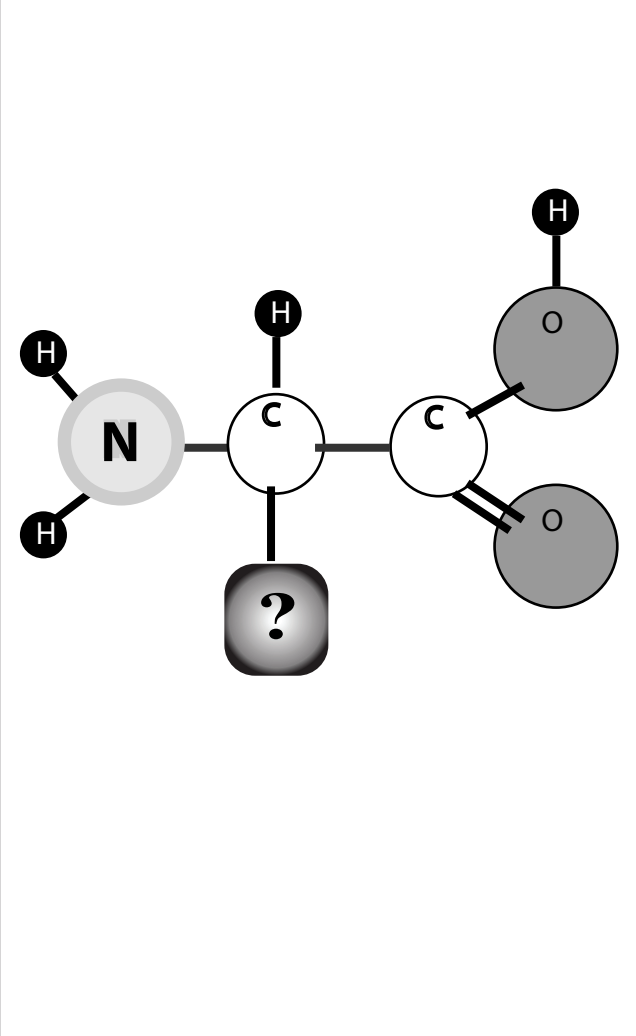
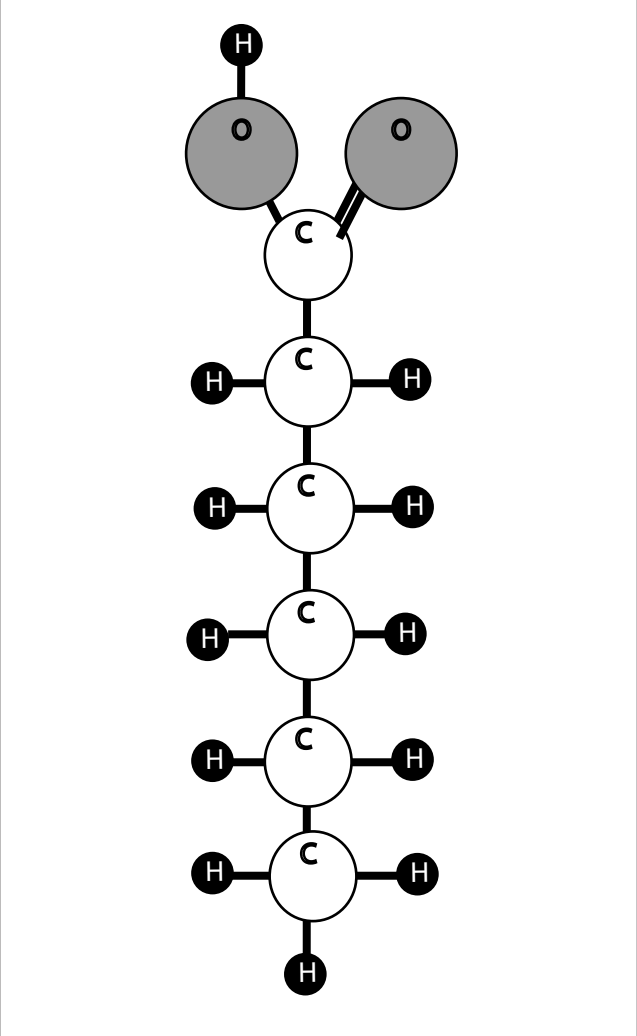


Compare carbohydrates, proteins, and fat.

Carbohydrates	Proteins	Fats
 <p>A ball-and-stick model of a branched carbohydrate chain. It features a central carbon atom (white) bonded to four other carbon atoms (white). Each carbon atom is also bonded to hydrogen atoms (black) and oxygen atoms (gray). The structure is branched, with a main chain and two side chains.</p>	 <p>A ball-and-stick model of an amino acid. It features a central carbon atom (white) bonded to a nitrogen atom (gray), a hydrogen atom (black), a variable group (represented by a gray box with a question mark), and another carbon atom (white). This second carbon atom is bonded to two oxygen atoms (gray) and a hydrogen atom (black).</p>	 <p>A ball-and-stick model of a saturated fatty acid. It features a long, straight chain of carbon atoms (white). The first carbon atom is bonded to two oxygen atoms (gray) and a hydrogen atom (black). The other carbon atoms are bonded to hydrogen atoms (black). The chain is saturated with hydrogen atoms.</p>

Compare carbohydrates, proteins, and fat.

Carbohydrates	Proteins	Fats
<div data-bbox="210 438 588 763" data-label="Chemical-Block"> </div> <p data-bbox="142 803 598 841">The primary source of energy</p> <p data-bbox="142 881 441 919">4 calories per gram</p> <p data-bbox="142 943 619 1052">Made of glucose molecules and other molecules with same chemical formula</p> <p data-bbox="142 1076 625 1114">Carbon, hydrogen, and oxygen.</p> <p data-bbox="142 1138 378 1175">Grains, cereals</p> <div data-bbox="100 1239 709 1466" data-label="Text" style="border: 1px solid black; padding: 5px;"> <p>Use nickels for carbon, dimes for oxygen, and pennies for hydrogen in this exercise. Have the student(s) silently study the carbohydrate molecule for one minute. Then, without looking at the illustration, see how fast they can make it with the coins.</p> </div>	<div data-bbox="840 438 1218 714" data-label="Chemical-Block"> </div> <p data-bbox="766 763 1197 800">Alternative source of energy</p> <p data-bbox="766 833 1060 870">4 calories per gram</p> <p data-bbox="766 902 1081 940">Made of amino acids</p> <p data-bbox="766 964 1323 1002">Carbon, hydrogen, oxygen, nitrogen.</p> <p data-bbox="766 1026 1354 1180">Meat, poultry, eggs, nuts, beans, dairy Forms the “cytoskeleton” inside cells. Also makes hormones and enzymes in the body.</p> <div data-bbox="741 1196 1350 1521" data-label="Text" style="border: 1px solid black; padding: 5px;"> <p>Protein forms the cytoskeleton or inner matrix of cells that gives it its shape. This activity will demonstrate the protein matrix. Empty one envelope of unflavored gelatin into a small container. Add two teaspoons for water and mix in quickly. Knead the mixture with your hands. Let it set a few minutes and feel the texture again. Compare it to the texture of the cartilage in your ear which is made of collagen which is a protein. You can also have a flavored gelatin snack which is high in -</p> </div>	<div data-bbox="1375 438 1984 600" data-label="Chemical-Block"> </div> <p data-bbox="1428 584 1869 621">Alternative source of energy</p> <p data-bbox="1428 654 1732 691">9 calories per gram</p> <p data-bbox="1428 716 1732 753">Made of fatty acids</p> <p data-bbox="1428 777 1974 915">Long chains of carbon may be saturated with hydrogen molecules or unsaturated. Two oxygen molecules at one end of chain.</p> <p data-bbox="1428 948 1816 985">Adds more flavor to food</p> <p data-bbox="1428 1010 1942 1078">Forms cell membranes and other parts of cells.</p> <div data-bbox="1371 1094 2001 1531" data-label="Text" style="border: 1px solid black; padding: 5px;"> <p>Melt one-fourth cup of butter and one fourth cup of margarine and keep them in separate containers.</p> <ul style="list-style-type: none"> • Add a drop of both to a napkin or sheet of paper. Observe what happens. • Mix one tablespoon of each with one tablespoon of water. What happens. • Mix one tablespoon of butter and one tablespoon of margarine. Which mixes with which? • Leave both out. Which will resolidify. <p>Discuss that butter is an animal product made from cream. Margarine is a vegetable product made from corn oil. Which is unsaturated? (Answer: Margarine) As a general rule unsaturated fats are liquid at room temperature.</p> </div>

Nutrition, Health, & Safety Information Pieces

The primary source of energy <small>NHS-3</small>	Alternative source of energy <small>NHS-3</small>	Alternative source of energy <small>NHS-3</small>
4 calories per gram <small>NHS-3</small>	4 calories per gram <small>NHS-3</small>	9 calories per gram <small>NHS-3</small>
Made of glucose molecules and other molecules with same chemical formula <small>NHS-3</small>	Made of amino acids <small>NHS-3</small>	Made of fatty acids <small>NHS-3</small>
Carbon, hydrogen, and oxygen. <small>NHS-3</small>	Carbon, hydrogen, oxygen, & nitrogen <small>NHS-3</small>	Long chains of carbon may be saturated with hydrogen molecules or unsaturated. Two oxygen molecules at one end of chain. <small>NHS-3</small>
Grains, cereals <small>NHS-3</small>	Meat, poultry, egg, nuts, beans, dairy <small>NHS-3</small>	Adds more flavor to food <small>NHS-3</small>
	Forms the “cytoskeleton” inside cells. Also makes hormones and enzymes in the body. <small>NHS-3</small>	Forms cell membranes and other parts of cells. <small>NHS-3</small>

To Make Your **MatchCard** more durable:

1. Put the student MatchCard in a clear plastic page protector.
2. Laminate the information pieces. You can also make them sturdier by covering the paper with transparent tape prior to cutting the pieces out.
3. For more ideas on how to use the MatchCards, and for keeping a notebook for review, see the Instructor’s Guide.
4. The complete Nutrition, Health, and Safety Unit Study provides the student worksheets, answer key, and teaching activities for this and 15 other objectives. See the website for more information.