**Station 1: Read it - Carbohydrates**

Carbohydrates are the most common organic molecule because they make up most plant matter. They are made from carbon, hydrogen and oxygen. Their building block, a single sugar, is called a monosaccharide. Sugars (monosaccharides) consist of carbon rings. When two monosaccharides, or sugars, combine, they form a disaccharide (di = two). When more than two monosaccharides join together, a polysaccharide (poly = many) is formed.

**1. What are the elements contained in carbohydrates?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. What is the building block of carbohydrates? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3. What is a monosaccharide? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4. What is a disaccharide?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. How does a polysaccharide differ from a disaccharide?**

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There are three examples of carbohydrate polysaccharides. The first is starch. Starch is a carbohydrate used in energy storage in plants. Potatoes, pasta and rice are rich in starch. Starches are very valuable because they provide a quick form of energy for the body. The second is glycogen. Glycogen is used for energy storage in animals. The third is cellulose. Cellulose is used for structural support in plants (stems, leaves).

**6. What are the three examples of carbohydrates?**

a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7. Which involves energy storage in plants?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8. Which involves energy storage in animals?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**9. What is cellulose used for?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**10. Why would an athlete have a big pasta dinner the night before a race?**

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Sugars can be detected in foods through a simple lab test. To find out if a food contains starch (a polysaccharide), iodine (a chemical) is placed on the food. A food containing starch will turn black when in contact with iodine. A test for simple sugars involves mixing the food with a liquid blue reagent called Benedict’s solution and then heating the mixture. If the food is positive for simple sugars, the heating process will cause the Benedict’s solution to turn red, orange, or green.

**11. What chemical is added to determine if foods contain starch (polysaccharides)?**

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**12. What does a positive test for starch look like?**

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**13. What chemical is added to determine if foods contain simple sugars (monosaccharides)?**

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**14. What does a positive test for simple sugars look like?**

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