Name: _____ Period: _____ Date: _____

Explore Learning Gizmo: Identifying Nutrients

I. INTRODUCTION

Labels on food products describe the contents of the food to provide the consumer with valuable information. The label lists important facts about the ingredients, calories, vitamins, minerals, fats, proteins, and carbohydrates in the food.

How does anyone figure out how much protein, how many carbohydrates, how much fat, etc. food contains? Chemists and nutritionists use specific chemicals to test and identify nutrients in foods and determine the levels of each.

II. PURPOSE:

In this activity, you will test an unknown food sample for the presence of carbohydrates, proteins, and lipids.

III. TESTING FOOD SAMPLES

1. In the Gizmo[tm], **drag test tube A** from the **Food samples** to the **food sample holder**. First, you will test this sample for carbohydrates, which are the main energy source for humans. Carbohydrates are found in foods such as potatoes, pasta, bread, and fruit. The Gizmo has two tests for carbohydrates.

a. **Carbohydrate Test I: Benedict Test**
    1. After you have dragged test tube A from the Food Samples to the food sample holder, click on Test under the Benedicts test in the Carbohydrate test area.
    2. If the solution turns orange-red, then it indicates that the sample contains a monosaccharide such as glucose. If there is no color change, then there are no carbohydrates in the sample. **Record your observations in the table provided.**
    3. **What can you conclude about sample A?**
b. **Carbohydrate Test II: Lugol Test**
    1. You will now test sample A with the Lugol Test. Follow the same procedure as listed in step a.1 above with the Lugol indicator and sample A.
    2. A positive result occurs when the solution changes to a deep purple color and indicates that there are polysaccharides such as starches in the sample. A negative result occurs when the solution remains an orange color. **Record your observations in the table provided. Does sample A contain a polysaccharide?**
c. If no color change occurs in either test, then a disaccharide, like table sugar may be present. **Could the**

gen atoms. **Oxy**

in classes of organic compounds (carbohydrates, lipids, proteins, and nucleic acids) ntial to the proper functioning of all living things are known as **polymers or cules.** All of these compounds are built primarily of carbon, hydrogen, and oxygen ent ratios. This gives each compound different properties.

ates are used by the body for energy and structural support in cell walls of plants and s of insects and crustaceans. They are made of smaller subunits called **aride.**
arides have carbon, hydrogen, and oxygen in a 1:2:1 ratio. Monosaccharides or **rs** include **glucose, galactose, and fructose.** Although their **chemical formulas are**

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