



Sugar Sweetened Beverage (SSB) Treasure Hunt Lesson Plan

Objective: To examine energy consumption, conversion and usage as it pertains to sugar sweetened beverages. Students will explore what macromolecules are in their beverage and how the body converts the nutrients into chemical energy that can be used by the cell through the process of cellular respiration. Students will also explore energy storage and how simple decisions may have a large effect on overall health. The goal of this activity is to connect nutrition, biochemistry and energetics so that students may gain a better understanding of the interrelatedness of the concepts.

Pre-Class Preparation:

Make a class set of manipulatives by printing out PDF cut outs for the various components of the activity (i.e. beverages, activities, sugars). Copy onto colored paper and laminate, if so desired. It is possible to keep nutrition facts separate from drawing while using Velcro to attach information later.

Bell Ringer assignment: What is a Sugar Sweetened Beverage? Make a list of SSBs.

Follow up:

Discuss what students have provided for a definition of an SSB by having them volunteer their examples. Keep a list on the board. At the end provide the students with a working definition of SSBs. Have students share some of the SSBs they listed.

Survey students for their top three SSBs. Form groups of two based on individual choices of favorite beverage. If there are options that are not included in the drawings provided then have students create a drawing that can be included next time the lesson is used (your collection will grow).

Group students in pairs by matching **Can't live without it** choices. Some adjustments may need to be made due to the number of options available.

(Idea for student engagement while teacher forms groups: have students complete a KWL chart for SSBs.)

Group Activity: Food Intake to Chemical Energy Conversion followed by work.

Focusing on the importance of carbohydrates as a macromolecule for short term energy.

1. Have each pair choose on an activity that they can use to examine energy use. If there are options that are not included in the drawings provided then have students create a drawing that can be included next time the lesson is used
2. Prior to students obtaining their nutritional information for their SSB have them predict the number of calories consumed per serving and how long they would have to perform their activity in order to utilize calories consumed.
3. Have students' hand in their predictions for their nutritional information and energy use. Provide students with nutritional information for their beverage.



4. Provide students with the Treasure Hunt Activity. Using computers students need to research what form of sugar is in their beverage as well as the energy consumed in their activity of choice. Students should continue researching and answering the open ended questions in the SSB Treasure Hunt packet.
5. At a reasonable time teacher should check with each group and have them show using their manipulatives what they have discovered so far in their research.
6. Teacher can choose how to review and reinforce the content and applications in the activity. For example, as a class, use the Frappuccino question to determine how many days it would take for me to gain an extra pound? How many pounds would I gain in a year?

Websites that may be helpful (this is not an exhaustive list):

<http://www.my-calorie-counter.com/calories-in.asp?Page=4>

http://www.thecoca-colacompany.com/mail/goodanswer/soft_drink_nutrition.pdf

<http://www.nutritiondata.com/facts/foods-from-mcdonalds/6298/2>

<http://www.ars.usda.gov/Services/docs.htm?docid=17032>

<http://www.elmhurst.edu/~chm/vchembook/604glycogenesis.html>

<http://www.unisanet.unisa.edu.au/08366/h&p2fat.htm>