



Healthy Lifestyles – Grades K-5

Nebraska Science Standards

3.3.4.b Identifies foods that are beneficial before and after physical activity

5.1.1.d Make relevant observations and measurements

5.1.1.e Collect and organize data

5.1.1.f Develop a reasonable explanation based on collected data

8.4.1.c. Investigate and explain how cells sustain life through functions (e.g., growth and nutrition)

Objective: The objective of this activity is to teach students how science is used to maintain a healthy lifestyle through proper nutrition and hygiene practices.

Materials (provided by CSM):

GloGerm Activity

- Glo-germ
- UV light

Nutrition Activity

- Food scales (3)
- Sugar
- Plastic cups
- Spoons
- Cookie sheets (3)
- Laminated sheets of food items and their sugar content

Materials (provided by the classroom):

- Water
- Hand soap

General Discussion: (Questions to ask the students)

- What does the word health mean?
 - Health is a state of physical, mental, and social well-being.
- What are different things we can do to stay healthy?
 - Wash our hands, eat healthy foods, exercise, take vitamins, etc.
- Why is it important to maintain a healthy lifestyle?
 - Live a long life, avoid getting sick, having energy, etc.
- How does science help us stay healthy?

- Medicines and vitamins, doctor visits and diagnosis, determine best foods to eat, understand, treat, and prevent illnesses, help with determining what is good for the body, etc.
- ❖ Break up the class into two groups and have one instructor proceed with the GloGerm Activity and then the other begin the Nutrition Activity.

Activity 1: GloGerm

GloGerm Discussion: (Questions to ask the students)

- What are germs?
 - Germs are called microorganisms. These are small organisms that can only be seen with the use of a microscope.
 - There are many types of microorganisms, but they are all simple organisms we can't see.
- Why do we study microorganisms?
 - We study them so we don't get sick!
 - The organisms that we consider as being "germs" are those that can cause disease.
 - Some of the organisms that cause disease are known as bacteria or viruses.
- What are some illnesses that are caused by germs?
 - Colds, flu, COVID-19, etc.
- How are germs spread?
 - These organisms can be spread through the air, on our food, in our water, or from direct contact with contaminated objects.
 - This is one of the most important reasons for proper hand washing.
- What is the proper way to wash your hands?
 - Demonstrate without water and soap and have the students follow your lead.
 - The steps of proper hand washing.
 - Wet your hands with running warm water
 - Apply liquid, bar, or powder soap
 - Lather well
 - Rub your hands vigorously for at least 20 seconds (sing Happy Birthday or the ABCs)
 - Rinse well
 - Dry your hands with a clean or disposable towel or air dryer
 - If possible, use a towel or your elbow to turn off the faucet.

You will need:

- Glo-germ
- UV light

GloGerm Activity Description:

GloGerm is a germ simulator. It helps students understand how germs are spread and how important proper hand washing techniques are to eliminate the spread of germs on our hands. Let the students know that putting the GloGerm on their hands does not enable them to see the real germs, it only simulates germ presence on their hands.

Procedure:

1. Put students in pairs and line them up to use the UV light. Show them their hands under the UV light before you apply the GloGerm.
2. Have one student pretend to be sick and put GloGerm on his or her hand. Do not give both partners GloGerm.
3. Then, let the two students give each other a high-five or a handshake.
4. All the students to observe their hands under the UV light.
5. Highlight how easily we spread the microorganisms or germs from our hands to others.
6. Now, ask the students to follow the correct steps to properly wash their hands.
 - Things to remember: As the students are waiting in line and washing their hands, continue to ask them questions about health and germs. This is usually a long wait period, and we do not want them to lose interest.
 - When is it a good time to wash your hands?
 - Where would you find a lot of germs?
 - What place has the most germs in your home? What about in the school?
 - Where do you think there are the fewest number of germs?
 - Operating rooms, sterile objects
7. When students are finished washing their hands, have them again observe their hands under the UV light to detect any remaining GloGerm. Highlight the difficulty of removing all microorganisms or germs during handwashing which is why it is extra important to follow the steps outlined to remove as many as possible.

Activity 2: Nutrition

Nutrition Discussion: (Questions to ask the students)

- What does the word nutrition mean?
 - The process of obtaining the food necessary for health and growth.
- What is the importance of a nutritious diet?
 - We eat food to provide fuel or energy to our bodies. The healthier food we eat, the better our bodies perform.

You will need:

- Food scales (3)
- Sugar (3 containers)
- Plastic cups (15 cups; 5 cups per group of 3)
- Spoons (3)
- Cookie sheets (3)
- Laminated sheets of food items and their sugar content (3 of each item)

Activity Description:

Students will take turns measuring the amount of sugar in various food items. Sugar is a type of carbohydrate, and carbohydrates give us energy. However, there are two different types of sugar. There are natural sugars and artificial/added sugars. Foods with natural sugars are the types of food that are considered healthy. For example, fruits and vegetables have natural sugar, but they are healthy sugars and give us good, long-lasting energy. Healthy foods may have sugar in them, as seen on the nutrition label, but under “ingredients” it will not list sugar. Another way to tell if foods have healthy sugars is to ask yourself, does this food grow outside? Foods with artificial/added sugars are not considered healthy for us. They will still give you energy, but only for a brief amount of time. Eventually, you will become tired if you eat too much.

Setup:

- This activity involves measuring sugar in a cup on a food scale to visualize the amount of sugar in different food products so you will need to explain how to use the scales. Demonstrate how to use the cup to “tare,” “blank,” or “zero out” the scale. Explain how this is important to get an accurate reading.
- Break the nutrition group into three small groups and give them a cookie tray, cups, sugar, food scale, spoon, and one set of laminated food items.
- The instructors may need to help the students with finding the amount of sugar content on the label. This is especially true for those students in the younger grades.

Procedure:

1. Divide the students into groups and make sure to put the cup of sugar on the cookie sheet to avoid spills.
2. Have the students begin with the broccoli and ask the students if they can tell you how many grams of sugar is in 1 cup of broccoli. Once the students can locate the sugar content of 2.2g, have the student tare the scale with one cup and then slowly add 2.2g of sugar to that cup. Place this cup on the laminated sheet of broccoli.
3. Next, have the students look at the label for an apple and ask if they can tell you how many grams of sugar are in one large apple. Once the students can locate the sugar content of 25g, have the student tare the scale with one cup and then slowly add 25g of sugar to that cup. Place this cup on the laminated sheet of apples.
4. Next, have the students look at the label for milk and ask if they can tell you how many grams of sugar are in 8 fluid ounces of milk. Once the students can locate the sugar content of 12g, have the student tare the scale with one cup and then slowly add 12g of sugar to that cup. Place this cup on the laminated sheet of milk.
5. Next, have the students look at the label for a Nerds Rope and ask if they can tell you how many grams of sugar are in one rope. Once the students can locate the sugar content of 21g, have the student tare the scale with one cup and then slowly add 21g of sugar to that cup. Place this cup on the laminated sheet of the Nerds Rope.

6. Finally, have the students look at the label for a Snickers candy bar and ask if they can tell you how many grams of sugar are in one bar. Once the students can locate the sugar content of 30g, have the student tare the scale with one cup and then slowly add 30g of sugar to that cup. Place this cup on the laminated sheet of Snickers.

Discussion: (Questions to ask the students)

- Which item has the most sugar?
 - Snickers candy bar
- Which item has the least amount?
 - Broccoli
- Which item surprised you the most and why?
 - Apples have a lot of sugar, 25g, which is more than the Nerds Rope candy. Does this mean eating a Nerds Rope is healthier than eating an apple?
 - No, remind them of natural sugars and artificial sugars
 - Remind students the importance of eating a balanced diet including healthy foods with the occasional unhealthy choices like candy, cookies, and other artificial sugars.