

TIES₂₀₀₂

Teachers in Industry for Educational Support

You Are What You Eat

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Curriculum Unit Overview

Summary

In our world of fast food and high fat food items, it is inevitable that we, as a nation, are having weight related health problems. Most people want or would like to eat healthier but they simply don't understand or know what is really considered healthy. With words like trans-fatty acid, saturated and unsaturated fat, carbohydrates, and a score of other words that baffle and confuse the general population, it is understandable that most individuals ignore the information given on the back of a food package. The purpose and goal of this project is to help take the mystery out of eating healthier. During this project, students will record and analyze food labels and track their caloric input and output.

Big Picture

The quality of our lives is often directly related to our dietary habits and choices. The activities in this unit are designed to give students enough knowledge and information to make wise decisions about the amount and type of food that they consume.

Preparation for the Unit

These activities can be used as an introduction to the digestive system as a way of grabbing the student's attention. They also help give the students a frame of reference to put new future information that will later be cover. Teachers may also use these activities as a way of tying together the information that is presented in the digestive system. Both approaches will work equally well. Preparation for this unit is relatively simple. You need to determine if you are to use the activities before or after covering the Digestive system and a timeline for completing the unit. You will also need to make sure that all that all the material necessary is on hand.

Overview

On the following page is a summary of the unit including brief summaries of each Authentic Learning Task (ALT). This table provides an overview of the tasks in the unit sections and shows how the activities in the different teaching areas relate to each other.

You Are What You Eat

Curriculum Unit Summary

Food Labels	Tracking Caloric Input	Tracking Caloric Output
ALT 1- Food Labels Activity Students will learn what information is given about food on a product label.	ALT 1 – You Are What You Eat Students will figure out if their school lunch menu provides a nutritious and balanced diet.	ALT 1 – Measuring Calories Used Students will figure out how many calories they use in a 24-hour time period.

Section One: Food Labels

Summary

Students need to be able to read food labels to help them better choose healthier food items and portion size in their diet.

Competencies

1. Students will be able to determine which food group the item belongs in.
2. Students will be able to determine portion size of each food item.
3. Students will be able to determine the amount of calories, fat, protein and carbohydrates of each food item.
4. Students will be able to correctly answer questions and fill in the chart that is provided.

Time

45-60 minutes: 1 class period

Materials

1. 10 different food labels.
2. Provided handouts.
3. Pencil.

Instructions

1. Collect 10 different food labels.
2. Fill in Data table.
3. Answer given questions.

Evaluation/Assessment of Student's Competency

Students will be able to fill out Data Chart and answer given questions correctly.

Closure

Remind students that what they consider a single portion may not coincide with the food labels serving size. Students will also write a one-paragraph summary of what they learned during the exercise.

Food Labels Activity

Objective: To learn what information is given about food on a label.

Materials

1. 10 different food labels
2. Handouts
3. Pencil



Procedure

1. Collect the labels from 10 of your favorite processed foods.
2. Fill in the blanks in your data table with the information for each food.

Questions

1. What was the main natural ingredient in each food?
2. To which basic food group does each food belong? (Refer to food pyramid)
3. If you ate portions of these 10 foods in one day, would you eat a balanced diet? Explain why or why not.
4. If you ate one serving of each of these 10 foods in one day, would you exceed the number of calories your body needs? Explain why or why not. (Refer to food pyramid)
5. Which foods would you recommend to a person who is trying to lose weight? Why?
6. In your opinion, what food was the most nutritious? Why?

Reflection

Write a one-paragraph summary of what you learned during the exercise.

Section Two: Tracking Caloric Input

Summary

Students need to analyze what they are eating before they can determine whether or not they have a healthy diet.

Competencies

1. Students will be able to organize the school's lunch menu into the different food groups.
2. Students will be able to organize the school's lunch menu into fats, carbohydrates and proteins.
3. Students will be able to organize the school's lunch menu into plant or animal products.
4. Students will be able to correctly answer the "Analysis and Conclusion" questions.

Time

45-60 minutes: 1 class period

Materials

1. School lunch menu for the week
2. Pencil
3. Handouts
4. Food pyramid

Instructions

1. Obtain copy of school's lunch menu.
2. For each day, place each item from the menu in the appropriate food group in Table 1.
3. Table 2 lists the three major nutrients: carbohydrates, fats and proteins. List those foods containing large amounts of these nutrients under the proper heading.
4. Identify those foods that are plants or plant products and those that are animals or animal products in Table 3.

Evaluation/Assessment of Student's Competency

Students will be able to fill out the Tables and answer given questions correctly.

Closure

Remind students that this is just one meal out of the day and that they may have to keep track of what they intake for 1 full day in a future assignment.

You Are What You Eat

Problem: Does your school lunch menu provide a nutritious balanced diet?

Materials (per group)

1. School lunch menu for the current week.
2. Pencil.
3. Handouts.
4. Reference material: Food pyramid.



Procedure

1. Obtain a copy of your school’s lunch menu for one week.
2. For each day of the week, place each item from the menu in the appropriate food group in Table 1.
3. Table 2 lists the three major nutrients: carbohydrates, fats and proteins. List those foods containing large amounts of these nutrients under the proper heading.
4. Identify those foods that are plants or plant products and those that are animals or animal products in Table 3.

Observations: Study the data you have collected and organized.

Table 1

Meat Group	Vegetable Group	Fruit Group	Milk Group	Bread-Cereal Group

Table 2

Carbohydrates	Fats	Proteins

Table 3

Plants or Plant Products	Animals or Animal Products

Analysis and Conclusions

1. What conclusions can you draw regarding your school's lunch program?
2. According to your data, do the foods represent a balanced diet? Do foods in certain categories appear much more often than foods in other categories?
3. What changes, if any, would you make in the menus?
4. **On Your Own:** Do a similar exercise, but this time analyze the dinners you eat for a week.

Section Three: Tracking Caloric Output

Summary

Students need to realize and understand that different activities burn different amounts of energy or calories. In this activity students will categorize different activities based on the rate at which your body burns calories.

Competencies

1. Students will be able to categorize and record their various activities, calorie rate, and number of hours involved in that activity.
2. Students will be able to convert pounds to kilograms.
3. Students will be able to calculate the number of calories burned for each activity.
4. Students will calculate total number of calories burned for 24 hours.

Time

60-90 minutes: 1½ class period: One period to do the activity and half a period to process the activity

Materials *(per student)*

1. Pencil
2. Handout
3. Calculator
4. One scale for the class

Instructions

1. Using a scale, measure body weight. Convert pounds to kilograms (2.2 lbs. = 1 kg)
2. Classify all activities for a given 24-hour period. In the Data Chart, record the number of hours.
3. For each activity, figure out the total number of calories used.
4. Add together all the calories that are burned in the entire 24-hour period.

Evaluation/Assessment of Student's Competency

Students will be able to fill out the Data Chart and answer given questions correctly.

Closure

Remind students that the average caloric needs should match caloric intake.

Measuring Calories Used

Problem: How many calories do you use in 24 hours?

Materials (per student)

1. Pencil
2. Handout
3. Calculator
4. One scale for the class



Procedure

1. Look over the Data Chart. The activity and the average calorie rate are given to you. The calorie rate shown for each activity is actually the number of calories used per hour for each kilogram of your body mass.
2. Using a scale, note your weight in pounds. Convert your weight into kilograms (2.2 lbs. = 1 kg). Record this number on the Data Chart.
3. Classify all of your activities for a given 24-hour period. Record the kind of activity and the number of hours you were involved in that activity.
4. For each of your activities, multiply your weight by the calorie rate shown in the chart. Then multiply the resulting number by the number of hours or fractions of hours you were involved in that activity. The result is the number of calories you burned during that period of time.
5. Add together all the calories you burned in the entire 24-hour period.

Observations

1. How many calories did you use in the 24-hour period? _____
2. Did this number closely match the number on the Average Caloric Needs Chart?

Data Chart

Activity	Average Calorie Rate	Kilograms (body mass)	Hours for each Activity	Total Calories Burned
Sleeping	1.1			
Awake but at rest (sitting, reading or eating)	1.5			
Very slight exercise (bathing, dressing)	3.1			
Slight exercise (walking quickly)	4.4			
Strenuous exercise (dancing)	7.5			
Very strenuous exercise (running, swimming rapidly)	10.5			

Transfer Activity

At the conclusion of this unit students should be ready to develop a healthy diet plan. In addition to this, students should be able to determine whether or not their current caloric intake is appropriate. The two activities that I have chosen to help tie together what has been learned, is as follows:

1. Students can keep track of their caloric intake and output for one week. In addition, they need to compare and contrast their results.
2. Students can develop a new diet that will last 1 month. It needs to contain breakfast, lunch and dinner.