



Diet Analysis

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Diet Analysis

Purpose:

The purpose of this lab is for students to analyze their existing diets for appropriate levels of proteins, fats, and carbohydrates as well as for vitamin and mineral content. Each student will then develop an improved dietary plan that addresses areas where they are deficient.

This activity is designed for students from grade 6 to 12.

Objectives:

Students will be able to:

- understand the role of fats, proteins, and carbohydrates as energy sources.
- determine a proper ratio of fats, proteins, and carbohydrates in their diet.
- identify health concerns related to inadequate nutrition.
- identify ways to decrease the amount of fat in the diet.
- design a well balanced diet.

Materials:

- 5 day Diet Log
- USDA Food Guide Pyramid and RDA values
- food analysis program such as Nutritionist IV or similar software program (also see References and Resources below for free website nutritional analysis program).
- students will work individually on this activity to analyze existing diet

Preparation:

The lab itself will take at least eight days, five days for the diet log and a minimum of three days for the analysis and recommendations. Prior to the lab the students should be familiar with general dietary concepts such as metabolism, nutrients, calories, etc.

Procedure:

Students will record every meal in a diet log over a five-day period. Each student will then choose the best day of their diet and write a brief paragraph explaining why they chose that particular day. The students will also choose the worst day and write a brief paragraph describing why they chose that day. Upon completion the students will enter data from the diet log into the program and compare the computer analysis with their previous analysis.

Once they have the values for their existing diet they must come up with a five-day dietary plan showing how they can improve their diet. The dietary plan should take into account the total calories necessary for maintaining their existing or desired weight. The students will also develop a well-balanced meal for the class keeping in mind the appropriate ratio of fats, carbohydrates and protein.

Safety:

Standard classroom safety rules apply. There are no hazardous materials or apparatus for this lab.

Questions to Ask:

1. What is meant by a balanced diet?
2. Why is it necessary to eat a variety of different foods?
3. How does diet affect the ability to stay healthy?
4. How do the body's nutritional requirements change as we age?
5. What are some common diseases resulting from a diet high in fat?

Suggestions for Assessment:*Content Area*

Completion of the diet log with appropriate recommendations for improvement.

Be able to identify the function of fats, carbohydrates, and proteins.

Be able to identify sources of vitamins and minerals in a typical diet.

Process Area

- A rubric can be designed to incorporate the level of understanding in the analysis of their diet. Several relationships that students should understand are the ratio between fats, carbohydrates, and protein, as well as the ratio between saturated and unsaturated fats.
- Questions can be devised that require students to interpret how dietary factors can influence disease processes.
- Determine whether craving certain foods is an adequate indicator of nutritional deficiency.
- Discuss how nutritional requirements change with age.

References and Resources

- Food and Nutrition Information Center, Agriculture Research Service, USDA, 10301 Baltimore Ave., Beltsville, MD 20705-2351. The [FNIC website](#) is an excellent source of information regarding nutritional research, recommendations, available software, etc. The Recommended Daily Allowances and the latest Food Guide Pyramid are also available.
- Nutritionist IV software program First Databank, The Hearst Corporation, 1111 Bayhill Drive, Suite 350, San Bruno, CA 94066-3035. 1-800-633-3453. \$495.00
- University of Mississippi [Diet Analysis Web Page](#) This may be used instead of purchasing the software program.

Where to Go From Here:

This lab is appropriate for units on the digestive system, nutrition, health, and hygiene. It might be appropriate to perform this activity at the beginning of the school year. Students can repeat this activity at the end of the year to see if they have followed their dietary improvement plan. Another activity would be for the students to research the traditional diets from other cultures such as Native American, African American, etc. and analyze these diets for nutritional content.

Invite a registered dietitian, sports nutritionist or other healthcare professional to discuss nutritional issues.

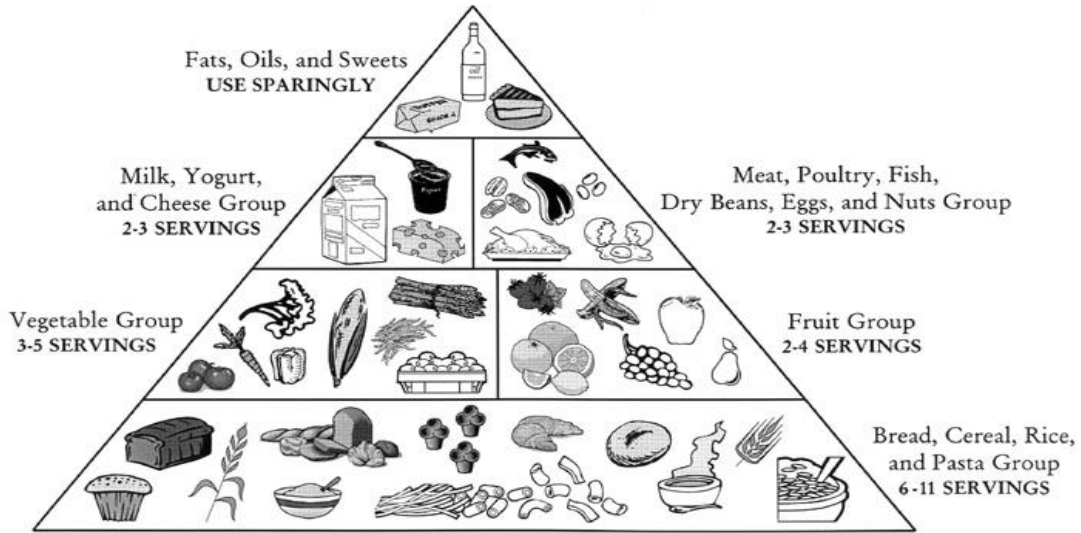
Diet Analysis: Student Handout #1

U.S. Food and Drug Administration Reference Daily Intakes (RDIs)*

Nutrient	Amount
Vitamin A	5,000 International Units (IU)
Vitamin C	60 milligrams (mg)
Thiamin	1.5 mg
Riboflavin	1.7 mg
Niacin	20 mg
Calcium	1.0 gram (g)
Iron	18 mg
Vitamin D	400 IU
Vitamin E	30 IU
Vitamin B6	2.0 mg
Folic Acid	0.4 mg
Vitamin B12	6 micrograms (mcg)
Phosphorous	1.0 g
Iodine	150 mcg
Magnesium	400 mg
Zinc	5 mg
Copper	2 mg
Biotin	0.3 mg
Pantothenic Acid	10 mg

* Based on National Academy of Sciences' 1968 Recommended Dietary Allowances

Dietary Analysis: Student Handout #2
Food Pyramid



Dietary Analysis: Student Handout #3

Diet Log

List all foods and drinks consumed each day. If food is eaten between regular meals list that food with the closest meal.

Date	Breakfast	Lunch
Dinner		
