

# Studying Human Nutrition

**Grade:** 6

## **Objective:**

### Affective:

- Students will understand that there are three major ways (methods) of conducting scientific research on human health. These are:
  - 1) studies of large populations (epidemiological) studies
  - 2) studies on a small number of people (case or clinical studies)
  - 3) studies using non-humans as the subjects (experimental)

### Academic:

- Students will read, write, listen, and speak for critical analysis and evaluation.
- Students will document epidemiological, case study and experimental research.

## **Motivation:**

Have students bring in articles from newspapers or magazines about health studies over the course of a one-or-two-week period. The media is full of studies about the newest drug, influence of certain foods, health problems from pollution, etc.



## **Procedure:**

### Mini-Lesson:

- 1) Explain to the students the different ways of doing research. Give examples (see addendum #1) and help students identify what kind of study each example represents.
- 2) Set-up three charts on the blackboard, one for each type of research.
- 3) Have several students read their article to the class.
- 4) Have students in the classroom tell which type of research each article is describing and how they know that: population, case or clinical study, or experimental research on non-human subjects.
- 5) Tape article to chart for that kind of research.

### Small-Group Activity:

- 1) Divide the students into groups.
- 2) Have students read their articles to the group.
- 3) The group will decide what kind of research each article describes and tape it to the appropriate chart.
- 4) Do any of the articles refer to more than one type of research?

## **Summary:**

Scientists do different types of research to learn about human health. These fall into the categories of:

- 1) population studies of large groups of people such as an ethnic group or an entire country
- 2) case studies of a small number of people
- 3) research on non-human subjects

## **Follow-Up Activities:**

- The American Heart Association, the American Cancer Society, the National Cancer Institute and other health agencies have recommended that Americans eat more fruits and vegetables and less fatty foods. Interview the director (or other head) of your school lunchroom. Is your school cafeteria serving more fruits and vegetables and less fatty foods? When healthy foods are served in school, survey how well they are eaten.
- Survey why your classmates eat the way they do. Put together a questionnaire asking what foods students eat and why. Compare girls versus boys. Compare older and younger students at your school. Are there differences?
- Can you affect people's eating habits? Survey the eating patterns of students in your classroom. Then try different strategies to see if you can effect student eating habits. Have a group of students obtain information from the American Heart Association to share with the class. Bring in a speaker from this or another

- health group. Show a video on eating healthy foods. Survey the eating habits of the students one week after all presentations have been made. Compare to see if education had any effect on eating habits.
- Do research to find out if you can see relationships between eating patterns and disease. Use library books and Internet websites. What food choices are recommended for people with diabetes? Heart conditions? Other diseases? How do food choices affect people's health?

### **References for Teachers:**

- New York Coalition for Healthy Schools [www.healthylunches.org](http://www.healthylunches.org)
- *Vegetarianism in a Nutshell* [www.vrg.org/nutshell/nutshell.htm](http://www.vrg.org/nutshell/nutshell.htm)
- Vegetarian Resource Group [www.vrg.org](http://www.vrg.org)
- Citizens for Healthy Options in Children's Education (CHOICE) [www.choiceusa.net](http://www.choiceusa.net)
- American Dietetic Association [www.eatright.org/Public](http://www.eatright.org/Public)
- Center for Science in the Public Interest [www.cspinet.org](http://www.cspinet.org)
- Dole Nutrition Information [www.dole5aday.com](http://www.dole5aday.com)
- New Century Nutrition [www.newcenturynutrition.com](http://www.newcenturynutrition.com)
- Leafy Greens Council [www.leafy-greens.org](http://www.leafy-greens.org)
- Children's Pyramid <http://www.mypyramid.gov/kids/index.html>

### **New York State Standards Addressed:**

*ELA Standard 3 - Language for Critical Analysis and Evaluation* – Students will read, write, listen, and speak for critical analysis and evaluation.

#### Listening and Reading

1. Listening and reading to analyze and evaluate experiences, ideas, information, and issues requires using evaluative criteria from a variety of perspectives and recognizing the difference in evaluations based on different sets of criteria.

*MST Standard 4 – Science* – Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

#### The Living Environment

1. Living things are both similar to and different from each other and nonliving things.

## **Addendum # 1:**

Students should tell which type of research has been used in each case, i.e. population study (PS), clinical study (CS), or research on non-human subjects (NHS)

1. During World War I, Denmark was blockaded by the allies. The death rate from disease fell when almost the whole country was placed on a vegetarian diet. (PS)
2. During World War II, when restrictions on meat consumption were imposed on Norway because of the German occupation, death rates from heart disease and diabetes fell. (PS)
3. Autopsy studies on soldiers killed during the Korean War revealed "hardening of the arteries" among Americans, but not among the Koreans who ate a diet less centered on meat. (PS)
4. A scientist from Cornell University in New York studied 6,500 men and women living in China. The scientist noted that very few Chinese are overweight, as compared to people in the United States. (PS)
5. A 1973 study in Boston compared a small group of meat eaters to a group of vegetarians. The meat eaters had higher blood cholesterol. (CS)
6. Scientist at the United States Department of Agriculture gave one group of people vitamin C tablets and another group ate large portions of vegetables containing the same amount of vitamin C. The scientists wanted to know if vitamin C from one source was better than that from another source. (CS)
7. Scientists had one group of children eat a typical American diet. Another group followed a special diet which had no food additives. The scientists saw no difference in behavior between the children in each group. (CS)
8. Scientists wanted to know how much vitamin C is in broccoli. To find out they put the broccoli in a test tube with chemicals to see the reactions. (NHS)
9. Scientists wanted to know if the calcium in limestone is the same as that in broccoli. They put the broccoli in a beaker with chemicals to see the reaction. (NHS)
10. Some scientists believe that humans need 400 milligrams of calcium while others believe they need 1,200 milligrams of calcium a day. The scientists used a computer program to construct the two diets containing either 400 or 1,200 milligrams of calcium and compared the two diets for the amount of fat, iron and other nutrients. (NHS)

11. Scientists observed what chimpanzees eat in the wild. They set up a hidden video camera in the jungle. (NHS)