

Web Unit Plan

Title: Food for Thought

Description: Elementary students learn about health, nutrition, and consumerism as they create a new restaurant that offers healthy and appealing foods.

At a Glance

Grade Level: 5

Subject sort (for Web site index): Science, Mathematics

Subjects: Science, Mathematics, Health

Topics: Nutrition, Health, Consumer Awareness, Persuasion, Business

Higher-Order Thinking Skills: Analysis, Evaluation

Key Learnings: Importance of Diet, Persuasive Writing, Planning Healthy Meals, Interpreting Food Labels

Time Needed: 4 weeks, 5 hours per week

Background: South Carolina, United States

Unit Summary

Students study their own health, activity, and nutrition needs as they develop menus of healthy and appealing foods for their own restaurants. Students develop consumer awareness by evaluating the persuasive elements of television and print advertising, and write and present their own convincing commercials to encourage people to visit their restaurants. As a culminating activity, the restaurants open, and students pretend to take orders, figure bills, compute 15 percent tips, and count back change.

Curriculum-Framing Questions

- **Essential Question**

How can I stay healthy?

- **Unit Questions**

How do my eating habits affect my health and growth?

How do I plan a healthy, nutritious diet?

What factors influence my food choices?

- **Content Questions**

What is the food pyramid?

What is the right number of calories for me?

How do I analyze and represent data?

Assessment Processes

View how a variety of student-centered [assessments](#) are used in the Food for Thought Unit Plan. These assessments help students and teachers set goals; monitor student progress; provide feedback; assess thinking, processes, performances, and products; and reflect on learning throughout the learning cycle.

Instructional Procedures

Getting Started

(Note: The [nutrition notes](#) sheet summarizes many of the concepts addressed in this unit. The information is presented as background for teachers, but you may want to make copies for students as well.)

Begin this study of health and nutrition by asking students, "If, as the saying goes, 'You are what you eat,' does that make me a cheeseburger? What does that phrase mean? Is it true? In what ways?" Promote a discussion about nutrition, and record prior knowledge, interesting ideas, questions that arise, and possible avenues for answering questions. Introduce the Unit Question, *How do my eating habits affect my health and growth?* and discuss briefly.

Before moving forward, pass out a nutrition learning log and a [learning log rubric](#) to each student. Explain to students that they will be writing in their learning logs throughout the unit to reflect on questions, record information, and document their thinking. The learning logs are an important part of the unit and assessed at the end of the unit. Therefore, the learning log rubric outlines expectations and guidelines for students to refer to while they write entries in their learning logs. Review the rubric with students and consider drafting an entry with them as an exemplary example.

Next, direct students to answer the Unit Question, *What factors influence my food choices?* in their learning logs. When writing is finished, ask students to voice their ideas, and cluster the ideas under logical categories. Some answers may include reasons such as hunger, taste, visual appeal, health, convenience, habit, novelty, cultural tradition, cost, and advertising.

Homework Assignment: Ask students to bring in a few nutrition charts from food packages that they may have at home. These will be used later during the "Planning a Healthy Diet" section of this unit.

Nutrition Basics

(Note: See the [nutrition notes](#) before proceeding.)

Introduce the five food groups and the food pyramid. Lead a discussion to answer the Unit Question, *How do I plan a healthy, nutritious diet?* and the question, *Why is eating the recommended servings from each food group everyday as well as eating a wide variety of foods from each food group important?*

Have students draw the food pyramid in their nutrition learning logs, labeled with the recommended number of servings for each food group. Through a film, or aided with charts or diagrams, address the nutritional value of each of the food groups. Explain portions and how to count composite foods, like sandwiches, which may account for one meat serving, two bread servings, one vegetable serving, and one fat/other serving.

Help familiarize students with the five food groups by having them create large food group posters that can be posted around the classroom. Create a bulletin board area that displays in big letters the following labels:

- Milk/Dairy
- Meat

- Vegetables
- Fruit
- Grains
- Others

Have students cut out pictures of food from magazines, circulars, and newspapers and glue them to the appropriate banner.

For the next five days, have students keep a [food diary](#) of everything they eat and drink. Include a weekend day to see if eating habits are different from the rest of the week. At the end of the five days, have students use the [daily food diary spreadsheet](#) template to record the total number of servings they ate from each food group. They can then find the daily average of servings from each group (the spreadsheet will calculate this for them), create a daily average graph (see the [sample food diary](#)), and compare it to the recommended number of servings. Lead a discussion with students about the outcomes of poor nutrition.

Food Is Fuel

Introduce the concept of food as fuel and the term *calorie* (see the [nutrition notes](#)). Show students how to find their ideal daily calorie levels as recommended in the nutrition notes calories chart. Ask students to reflect on one day's diet from their food diaries. (They have been recording this information!) Instruct students to use an Internet [calorie calculator](#)* to find and record the total number of calories in the day's diet, and then answer the following questions:

- *What is the right number of calories for me?* (Content Question)
- *Do I eat the proper number of calories, too few, or too many?*
- *How can my diet be altered so I consume the right amount of calories?*
- *How can my activity level be altered?*

Homework Assignment: Reflect on the day and estimate how many minutes were spent engaged in different activities during waking hours. Record the activities in the learning log. Activities might include sitting in class, sports practice, watching television, walking to school, PE class, and doing specific chores.

Activity Fueled by Food

Discuss the activity log homework assignment. Have students pose questions for the group, such as:

- *What was the most common activity?*
- *What was the most strenuous activity recorded?*
- *Who expended the most energy?*
- *How many hours did the whole class spend in front of the television?*

Using the [Calories Burned Calculator](#)*, teach students to calculate how many calories their specific activities burned. Create a large classroom chart that shows common activities and the calories they require. Have students create miniature versions of the chart in their learning logs.

Making Choices

Discuss food choices and the impact of small changes in diet over time. For instance, a person can choose to have a glass of milk or a can of soda with lunch—*How do these drinks compare nutritionally?* Have students choose two foods, research their nutritional value (using print or electronic sources), and compare them. Provide

students with the [making choices instructions](#) to guide them through using spreadsheet software when creating their nutritional [food label graphs](#). Students may practice interpreting each other's graphs and record their interpretations in their nutrition learning logs.

Planning a Healthy Diet

Revisit the Unit Question, *How do I plan a healthy, nutritious diet?* Have a brief discussion to share ideas. Using the food group banners, food pyramid diagram, nutrition charts from packaged food labels, and cookbooks as resources, students plan a day's menu that meets nutritional requirements and stays under 30 percent fat. Discuss with students the Essential Question, *How can I stay healthy?* Make sure students understand that eating a nutritional diet of the correct calories is a good way to achieve and maintain good health.

Advertising and Food Choice

Revisit the Unit Question, *What factors influence my food choices?* In preparation for creating their own persuasive food commercials and slideshows for their restaurants, teach students to evaluate the persuasive elements of Saturday morning television advertising. Discuss the features of commercials (targeted audience, hook, message, sound and visual appeal, and descriptive words) that draw us in, causing us to want the products being advertised. Practice observation techniques in class before students try this at home. In advance, tape children's programming on Saturday morning between 7:00 a.m. and 10:30 a.m. Cue up a food commercial. Using a chart or overhead transparency of a [TV ad observation form](#), run the videotape and demonstrate how to record information about the advertisement. Pass out the observation form and have pairs of students record information from another food commercial. Assign this activity as homework for a Saturday morning. Ask students to write a summary of their information and be ready to report back to the class the following Monday. When lessons resume, discuss the assignment, and help students identify general themes in advertising.

Restaurateurs

Set students to work in small groups to create their own [restaurant menus](#) and advertising campaigns. Give them the [scoring guide](#) when the requirements are given and encourage them to self-assess their work. Each menu should include:

- Restaurant name
- Tagline or slogan for the restaurant
- Restaurant description
- Menu items with a description of nutritional values
- Address, phone number, and hours of operation
- Digital pictures, graphics, or scanned artwork

As an extension activity, have students compare caloric and nutritional values of their menus to menus from a [fast-food restaurant](#)* they have visited. Challenge kids to find the worst and best food item in each restaurant (a worst example would be Burger King's* Double Whopper with cheese—932 calories, 54 grams of fat).

Persuasive Commercial—Student Presentation

To promote their restaurants, have each group create a convincing slideshow commercial or video commercial to encourage people to visit their restaurants. The

commercials should reflect the advertising tactics they learned about during the Saturday morning commercial observation activity. Each commercial should include the following components:

- Name and slogan of the restaurant
- Restaurant description
- Address, phone number, and hours of operating
- Reasons why people should visit the restaurant
- Examples of the healthy items on the menu

Hand out the [commercial checklist](#) for students to follow as they create their commercials. Have students develop storyboard plans of their commercials before they work in the computer lab or film their videos. Photocopy menus and show commercials to the class, and discuss the appeal and nutrition of the restaurants.

Culminating Activity—Restaurant Opening Night

"Open" one or two restaurants each day, with restaurant groups serving their classmate customers. Have restaurateurs explain their healthy offerings, pretend to take orders, figure a bill, compute a 15 percent tip, and count back change. Buddy classes, specialists, and the principal might enjoy "dining" at the "restaurants," too.

Revisit the Essential Question, *How can I stay healthy?* Have students record in their logs what they learned in this unit to help them stay healthy and respond to one of the following summative prompts:

- *You go out to breakfast with friends. Wanting to eat in a healthy way, what do you order and why?*
- *What kinds of foods would you choose for healthy snacks? How are these foods different from those that fit in the "Others" category?*
- *Your family goes to a fast-food restaurant for dinner. Wanting to eat in a healthy way, how do you choose what to order?*
- *Have your eating habits changed? How?*
- *What influences your food choices? How do you deal with these influences?*

Other Food Topics

Throughout the unit, lessons should be presented about food and nutrition. Lessons and activities might include:

- How food moves from producer to consumer
- Politics of food
- Price of food—*What fraction of a family's dollar goes for food? How does this compare to 50 years ago?*
- Food origins
- Historical trends in food
- Culture and food
- Compare cultural food pyramids (see [FDA Food Pyramids*](#))
- Birth of convenience foods
- Genetic alteration in foods
- Health risks related to poor nutrition (such as obesity, rickets, scurvy, kwashiorkor, type 2 diabetes, high blood pressure, and heart disease)
- Famine, then and now
- Food-borne pathogens

Differentiated Instruction

Resource Student

- Encourage the student to successfully participate in all projects, which are all open-ended
- Pair the student in heterogeneous pairings or small groups to do research and complete unit projects
- Give the student extra adult assistance as needed and additional work time or task modifications as described in the student's Individualized Education Plan (IEP)

Gifted Student

- Allow the student to serve as an expert in reading, writing, or technology
- Require the student to research an aspect of health or nutrition that was not focused on in class (see the "Other Food Topics" section earlier in this Unit Plan)

English Language Learner

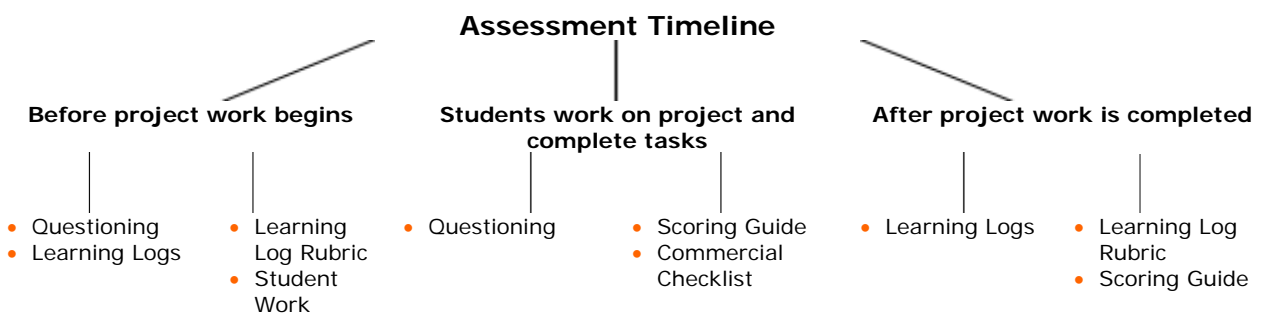
- Ask the ELL teacher to help the student translate basic terms into an English/first language glossary
- Post translated terms around the room to allow all students to learn new vocabulary
- Have the ELL teacher explain new concepts, help the student complete journal entries, and help the student conduct research
- Pair bilingual students with non-native speakers for tasks that require reading and writing
- Allow journal writing to be completed in the student's first language for later translation
- Allow assignments to be adapted, or give the student more time when necessary

Credits

A classroom teacher participating in the Intel® Teach Program developed the idea for this unit plan. A team of teachers expanded the plan into the example you see here.

THINGS YOU NEED

Assessment Plan



The unit begins with questioning and discussion to assess prior knowledge and prompt higher-order thinking. Students are given a [learning log rubric](#) and are asked to refer to the rubric every time they write in their logs. Students demonstrate their learning throughout the unit as they respond in their learning logs to questions posed at transition points in the unit. Student work, such as homework and graphs, assesses student learning on an individual basis. Frequent probing for understanding allows monitoring and adjusting instruction in a responsive way.

The [scoring guide](#) and [commercial checklist](#) are given to students before work on the projects begins. These assessments help students stay on track and remain aware of expectations for the projects. Students' menus are assessed using the same [scoring guide](#). Use the [learning log rubric](#) at the end of the unit to assess students' learning logs.

Content Standards and Benchmarks

Targeted Oregon Content Standards and Benchmarks

Health: Grade 5

- Understand and analyze the relationships among psychological factors, physical activity, nutrition, and personal hygiene and their effects on personal health and well-being.
 - Understand and apply eating patterns that promote wellness and prevent disease.
 - Compare and contrast cultural differences in eating patterns and the impact on lifelong wellness.

Math: Statistics and Probability: Grade 5

- Create charts, tables, graphs, and use statistics to summarize data, draw inferences, and make predictions.
 - Collect, organize, display, and analyze data using number lines, bar graphs, line graphs, and circle graphs.
 - Predict outcomes for a large group based on data gathered from a small group sample.
 - Collect and organize data to answer a question or test a hypothesis. Draw conclusions based on the collected data and communicate results.
- Interpret data and determine the reasonableness of statements about the data.

National Council of Teachers of Mathematics Curriculum Focal Points and Connections

As of 2006, the National Council of Teachers of Mathematics (NCTM) released math curriculum focal points to describe an approach to curriculum development. The approach focuses on areas of emphasis in each grade from prekindergarten through

grade 8. ([Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics*](#))

This Unit Plan meets the following curriculum focal points and connections: ***Focal Points***

- Grade 3: Number and Operations: Developing and understanding of fractions and fraction equivalence
- Grade 4: Number and Operations: Developing and understanding of decimals, including the connections between fractions and decimals
- Grade 5: Number and Operations: Developing and understanding of and fluency with addition and subtraction of fractions and decimals

Connections

- Grade 3: Data Analysis: Construct and analyze frequency tables, bar graphs, picture graphs, and line plots and use them to solve problems
- Grade 4: Data Analysis: Continue solving problems using frequency tables, bar graphs, picture graphs, and line plots. Develop and use stem-and-leaf plots.
- Grade 5: Data Analysis: Analyze double-bar and line graphs and use ordered pairs on coordinate grids

Science: Grade 5

- Explain, from a science perspective, how nutrition, exercise and disease, toxic substances, safety, and relationships with the environment are important to the health and safety of individuals and the community as a whole.
 - Identify a personal and/or community health risk. Explain risks and benefits in personal and community health from a science perspective.

National Educational Technology Standards (NETS)

Performance Indicators for Technology Literate Students (Grades 3–5)

Prior to completion of grade 5, students will:

- Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively.
- Use general-purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum.
- Use technology tools (such as multimedia authoring, presentation, Web tools, digital cameras, and scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.
- Use telecommunications efficiently to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests.
- Use technology resources (such as calculators, data collection probes, videos, and educational software) for problem solving, self-directed learning, and extended learning activities.

- Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.

Student Objectives

Students will be able to:

Health and Nutrition

- Develop awareness of factors that influence food choices and reflect on their own eating patterns
- Learn to analyze the nutritional values of foods
- Understand their nutritional needs and outline steps to plan healthy eating

Math

- Make and use estimates with money
- Learn to calculate percentages to determine recommended daily requirements
- Apply consumer math skills to real-world situations while they tabulate a bill, make change, and figure a 15 percent tip
- Create charts and graphs to record data and observations
- Make decisions based on visual displays of data

Science

- Design an investigation to answer questions or check predictions
- Collect, organize, and summarize data from investigations
- Analyze, interpret, and summarize data
- Use process skills
- Work cooperatively in small groups
- Document observations in a journal or learning log
- Ask questions, gather research, organize information, prepare data, and present findings in writing

Resources

Materials and Resources

Printed Materials

- Allison, L. (1976). *Blood and guts: A working guide to your own insides*. New York: Little, Brown, and Company.
- Meeks, L. (2002). *Comprehensive school health education: Totally awesome strategies for teaching health, 3rd edition*. Columbus, OH: McGraw-Hill Companies.

Supplies

- Basic art supplies
- Old magazines and newspapers (food section)
- Grocery store fliers
- Cookbooks

Internet Resources

- All About Food Labels
www.healthchecksyste.ms.com/label.htm*
Shows information about what is on food labels
- Calories Burned Calculator

www.northsuburban.com/HC_CalBurned.asp*

Calculator to show calories burned during activity

- Calorie Calculator

www.caloriescount.org*

Another site to show calories burned

- Consumer Math

www.aaamath.com/mny.html*

An interactive site that lets you practice your math skills

- Fast Food Nutrition Information

www.dietriot.com/fff/rest.html*

www.foodfacts.info*

Dietary information regarding fast foods

- FDA For Kids

www.cfsan.fda.gov/~dms/educate.html*

FDA site that gives details about nutrition and food groups

- Nutrition Dictionary

www.foodfit.com/misc/encyclopedia.html*

Tells what specific vitamins and minerals do for your body

Other Resources

- Guest speakers, such as nutritionists, to come in to talk to the class

Technology—Hardware

- Computer(s) for research and presentations
- Digital camera for pictures for menus and commercial presentations
- Internet connection for conducting research
- Printer to print menus
- Projection system for lessons and presentations
- Scanner to scan pictures for menus and presentations
- Television to view commercials
- VCR to view taped commercials

Technology—Software

- Database or spreadsheet for graphing activities
- Desktop publishing for menus

- Encyclopedia on CD-ROM for conducting research
- Internet web browser for conducting research
- Multimedia for commercial presentations