Comprehensive Health Strands:
  Community/Environmental Health (C)
  Personal Health (PH)
  Human Growth and Development (H)
  Disease Prevention and Control (D)
  Drug Abuse Prevention (DA)
  Nutrition (N)
  Consumer Health (CH)
  Mental Health (M)
  Safety and First Aid (S)
  Family Life (F)

Competencies and Suggested Objectives:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)
   a. Identify the harmful physiological and psychological effects of stress.
   b. List and describe types of mental disorders.
   c. Describe the transmission, symptoms, treatment, and prevention of communicable, non-communicable and sexually transmitted diseases.
   d. Describe the etiology and control of the AIDS virus.

2. Demonstrate the ability to obtain valid health information. (CH, PH, C)
   a. Explain the importance of keeping family medical records.
   b. Differentiate between nonprofessional and professional medical services.

3. Demonstrate the ability to practice health-enhancing behaviors and reduce health risks. (S, D, N, M, DA)
   a. Evaluate how environmental health problems impact personal and community health.
   b. Identify websites regarding sources that provide valid health information.
   c. Relate connections between human and environmental factors to the risk of accidents.
   d. Demonstrate basic first aid procedures.
   e. Describe how individuals can help reduce the misuse and abuse of drugs.
   f. Explain how drugs and medicines have affected the life span of human beings.
   g. List future positive effects of drugs and medicines on society.
   h. Compare or identify the interrelationship between the amount of food consumed to obtain ideal weight and the amount of food consumed in obese individuals.
   i. Identify the relationship between psychological factors and eating disorders.
   j. Identify available resources for treatment of mental illness.
   k. Explain other measures for at-risk behavior involving communicable diseases.
4. Analyze the influence of culture, media, technology, and other factors on health. (C, CH, P)
   a. Evaluate the implications of modern technology on societal health.
   b. Analyze the influences of different cultural beliefs on health behaviors.

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M)
   a. Define the role of the family in the transmission of values, attitudes, behavior, personalities, and responsibilities of its members.
   b. List several types of defense mechanisms and discuss their limitations in solving problems.
   c. Discuss conflict resolution styles and components of communication that can aid in resolving conflicts.
   d. Describe situations that could cause conflicts and problems within a family.

6. Demonstrate the ability to use goal-setting and decision-making skills to enhance health. (N, PH DA, F, M, H, S, D)
   a. Interpret the role of nutrition and nutrients in maintaining health.
   b. Examine the costs associated with healthcare.
   c. Identify the activities and groups that protect the consumer.
   d. Explain the process of human reproduction from conception to birth.
   e. Utilize a decision-making model to identify reasons for abstaining from premarital sexual activity.
   f. Define a value system and identify the relationship of values to actions.
   g. Demonstrate the ability to work cooperatively with others to avoid potentially harmful situations.
   h. Develop and implement a plan for increasing personal safety at home, work, and/or school.

7. Demonstrate the ability to advocate for personal, family, and community health. (C, CH, F, S, D)
   a. Develop and implement a campaign to influence and support others in making choices that reduce the risks of intentional or unintentional injury.
   b. Demonstrate the ability to work cooperatively when advocating for healthy individuals.
   c. Illustrate how drug use, misuse, and abuse cause problems in society.
Ninth Grade - Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

6. Demonstrate the ability to use goal-setting and decision making skills to enhance health. (N, PH, DA, F, D)

<table>
<thead>
<tr>
<th>Integrated Instruction</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts: Viewing, Writing,</td>
<td></td>
<td>Students will compose an essay based on research found on calcium. The paper should be gender-specific. For example, it should be titled, &quot;Why is Calcium an Important Mineral for Males?&quot; or &quot;Why is Calcium an Important Mineral for Females?&quot;</td>
<td>Feedback after diary check</td>
</tr>
<tr>
<td>Math: Data analysis, Number sense, Measurement</td>
<td></td>
<td>Students will include how much calcium is consumed by keeping a calcium diary on the poster sheet provided by 3-a-day website: <a href="http://www.3aday.org/">http://www.3aday.org/</a></td>
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<tr>
<td>Students will calculate percentages of calcium in daily caloric intake and keep a log of the calcium percentages for a week.</td>
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<tr>
<td>Enrichment/Acceleration: Students will research the effects of osteoporosis and create a visual model of a person that is suffering from the degenerative disease.</td>
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<tr>
<td>Remediation: Students will use the internet to determine the recommended daily calcium intake for males and females. Students will chart their calcium intake for one week and determine whether calcium is sufficient.</td>
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<tr>
<td>Verbal Feedback after log. Graded by rubric. See appendix.</td>
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<tr>
<td>Completion of activity. See Rubric in Appendix.</td>
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</table>
Ninth Grade-Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

4. Analyze the influence of culture, media, technology, and other factors on health (C, CH, P)

7. Demonstrate the ability to advocate personal, family, and community health. (C, PH, F, H, S)

<table>
<thead>
<tr>
<th>Integrated Instruction</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>9-12</td>
<td>Teacher will use a K-W-L (know-want to know-learn) chart to determine what students know and would like to know about the effects of having too little folic acid during pregnancy.</td>
<td>Teacher observation</td>
</tr>
<tr>
<td>Language Arts: Reading, Writing, Speaking, Listening</td>
<td>1c, 3b, 4a, 4b</td>
<td>In small groups, students will research the information indicated in the “W” section of the K-W-L chart. Students will present the information via a self-selected visual or written product.</td>
<td>Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Science: Life Science</td>
<td>7a, b</td>
<td>For reference materials students may use the following websites: (case study about folic acid from Texas) <a href="http://www.cdc.gov/nccdphp/folicacid/excite/default.htm">http://www.cdc.gov/nccdphp/folicacid/excite/default.htm</a> <a href="http://www.nutritionexplorations.org/">http://www.nutritionexplorations.org/</a> Enrichment: Students will collaborate with computer or media arts teacher to create a video highlighting the positive effects of consuming folic acid during pregnancy. Remediation: Students will create visual representation comparing and contrasting the pros and cons of consuming healthy doses of folic acid during pregnancy.</td>
<td>Visual or written product. Graded based on rubric. See appendix.</td>
</tr>
</tbody>
</table>
Sample K-W-L Chart

<table>
<thead>
<tr>
<th>Know (Pre-Assessment)</th>
<th>Want to Know</th>
<th>Learned (Post-Assessment)</th>
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</tbody>
</table>
Ninth Grade - Twelfth Grade

Competencies:

3. Demonstrate the ability to practice health-enhancing behaviors and reduce health risks. (S, D, N, M, DA)

4. Analyze the influence of culture, media, technology and other factors on health. (C, CH, P).

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (N, PH, DA, F, M, H, S, D)

<table>
<thead>
<tr>
<th>Integrated Instruction (with strands)</th>
<th>Competency /Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3 a.</td>
<td>Students will discuss their personal health habits and their responsibility in achieving a better quality of life. Students will use the following website to determine the amount of calories that are needed to maintain their current body weight. <a href="http://www.MyPyramid.gov">www.MyPyramid.gov</a>.</td>
<td>Teacher Observation from rubric.</td>
</tr>
<tr>
<td>Math:</td>
<td>3 b.</td>
<td></td>
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<tr>
<td>Number sense,</td>
<td>3 h.</td>
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<tr>
<td>Measurement</td>
<td>4 b.</td>
<td></td>
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<tr>
<td>Language Arts:</td>
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<tr>
<td>Reading,</td>
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<td></td>
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<tr>
<td>Listening,</td>
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<tr>
<td>Speaking</td>
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</tbody>
</table>

Enrichment/Acceleration:
Students will compare fat and caloric content of various food items at eight to ten popular fast food restaurants. Students will use Microsoft Excel to display findings in a spreadsheet to compare the items.

Remediation:
Students will brainstorm ways in which they can maintain a healthy weight/BMI. Students will compare the information gained from the web site to the handout from the USDA and become familiar with the servings for each category.
Count Calories By The Company They Keep

Overview

Clarify the important role that energy sources play in the lives of youth by analyzing the nutrient value of beverages. By comparing the energy sources of carbohydrates, fat and protein, students will be able to "count their calories by the company they keep."

Objectives

Students will

- Understand that fat, protein and carbohydrates provide different amounts of calories.
- Analyze personal beverage choices for nutrients and calories.
- Use the Nutrition Information Panel on beverages to drink more beverages that are nutrient-rich.

Time:
2 - 45-minute class periods

Advanced Preparation

- Duplicate student materials: Think Your Drink, downloaded at: http://www.nutritionexplorations.org/pdf/educators/quick/think_your_drink_color.pdf and Think About Your Drink, found at end of this lesson.
- Label index cards with the letters F, P or C, having one card for each student.
- Collect clean empty beverage containers to include, but not limited to fat free milk, low fat chocolate milk, 100% orange juice, fruit punch, cola, diet cola, bottled water, sports drink.
Background Information*

The following information is based upon 2000 calories per day, according to the Dietary Guidelines for 2005. More calories are needed by active teens.

- Protein, fat and carbohydrates provide calories to carry out basic body functions, fuel the brain for learning, and supply energy for physical activity.
- At least 50% of the calories in a healthy diet are supplied by carbohydrates, with 80% of the carbohydrates of choice being complex carbohydrates.
- Sugar, a simpler form of carbohydrate, is identified on an ingredient label as glucose, fructose, lactose, sucrose or honey.
- Starch, a complex carbohydrate from plants, provides calories, minerals, vitamins, protein and fiber. Complex carbohydrate sources are all vegetables, cereal, rice, pasta, bread, nuts, seeds and legumes.
- One gram of carbohydrate has 4 calories.
- Children and adults need 130 calories each day from carbohydrates for brain function.
- At least 10% of calories from protein will supply the needed building blocks for cell growth and repair. Excess protein is used for energy, if needed, or is stored as fat. Excess protein does not build more muscle.
- One gram of protein provides 4 calories of energy.
- The Dietary Guidelines recommend keeping fat at 20-35% of calories and eating primarily polyunsaturated and monounsaturated sources. Every body needs some fat for cell function and energy and some fat in storage to protect body organs.
- One gram of fat provides 9 calories.
- The Nutrition Information Panel gives the total carbohydrate in a food or beverage. Some beverages have only added carbohydrate while others such as milk and fruit juice have naturally occurring carbohydrate. Milk has 12 grams of carbohydrate in the form of naturally occurring lactose.
- Added carbohydrate, in the form of sugar, is on the ingredient list. The ingredients are given in order of content from most to least.
- The Nutrition Information Panel guides people to improved food choices by providing the percentage of a nutrient. According to the Food and Drug Administration, a food with 10 – 19% of a nutrient is a good source, whereas 20% or more of a nutrient is an excellent source.
- Beverages and foods that provide calories without nutrients are “empty calorie” or low nutrient density choices.
• Seven out of ten teen boys and 9 out of ten teen girls do not get the calcium that they need for growth and development.
• To get the calcium recommendations, teens need to drink 3 servings of calcium-rich dairy foods every day.
• Some beverages are fortified with nutrient(s).
• Many beverages are formulated with added sugar.

*Background information from United States Department of Agriculture, Food and Nutrition Service. http://www.health.gov/dietaryguidelines

Lesson

Day 1
Have each student take an index card with one of the letters, F, P or C on it. Ask the students to hold up the card of one letter, followed by the rest. (Fat is the most "energetic as fat has 9 calories per gram where as protein and carbohydrate have 4 calories per gram.)
Ask:
• Which letter "looks" the most energetic?
• What is the basis of your opinion?
• How is energy measured?
• What is the source of energy?
• What can you tell me about calories? About carbohydrates? About protein? About fat?

Based upon student response, reinforce the accurate responses and correct the misinformation, using the background information provided with this lesson to develop the level of understanding needed to analyze beverages for nutrient density.

Have the students look at the beverage container Nutrient Information Panel to find calorie, carbohydrate, protein and fat information. Compare the information with the amounts of Vitamin A, Vitamin C, calcium and iron in the beverage.

Have students share their observations with the class.
Ask:
• Are there any examples of a beverage with 20% or more of a nutrient per serving?
• What is the nutrient?
• Why is calcium important to you at this time?
• Why is protein important to you?
• What role does fat play in your diet?
• Does the beverage with fat provide any other nutrients?
• Why is vitamin C important to you?
• Are there any examples of a beverage with 10 – 19% of a nutrient per serving?
• Are there any beverages without nutrients?
• Is the nutrient naturally found in the beverage or is it a fortified beverage? How can you tell?

Compare the student observations with the information on the handout, Think Your Drink.

Have the students look at the Ingredient section of the label and identify the components of the beverage, noting the first and second ingredient listed. Tell the students that milk has lactose, a naturally occurring sugar that provides 12 grams of carbohydrate per serving. One hundred percent fruit juice also has naturally occurring sugar in the form of fructose.

Identify the beverages with added sugar.

Have the students record the beverages that they drink in one day, using the chart, Think About Your Drink to analyze the health benefits from their beverage choices.

Day 2
Have the students discuss the results of the Think About Your Drink charts.
• What beverage is consumed the most?
• How many calories come from this beverage source?
• How many nutrients come from this beverage source?
• Where is this beverage mostly commonly consumed?
• What do you tend to drink at home? At school? Away from home at the movies or mall or restaurants?
• Are you drinking 3 servings or more of milk a day to get the calcium that you need?
• What influences the choices at these various locations?
• Does the package influence choice?
• Do the fast food restaurants offer nutritious beverages in appealing packaging such as 8-ounce plastic containers of milk?
• Does availability of different flavors influence your beverage choice?

Develop a chart with the student's recommendations for behaviors that would ensure three to four servings of milk a day. Hang the chart in the room and review it from time to time to help students improve and maintain their healthy beverage behaviors.

Summarize student responses to the quotation: Count the calories by the company they keep.

Midwest Dairy Council Spring 2006
Think About Your Drink

Using the record below, keep track of the beverages that you drink on an average day and where they are consumed.

<table>
<thead>
<tr>
<th>Beverage</th>
<th>Location</th>
<th>Amount</th>
<th>Calories</th>
<th>% of Calcium</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Total

- Total the number of calories from beverages and record.
- Total the % of calcium and record.

What conclusions do you make about your beverage choices? How does your place of activity influence your choices?

If improvement is needed, what changes could you make?

If your choices provide at least 100% of the calcium recommendation, how are you accomplishing it?

There is a quotation: *Count the calories by the company they keep.* How can you apply this quotation to your beverage choices?

Midwest Dairy Council Spring 2005
MyPyramid Food Intake Pattern Calorie Levels

MyPyramid assigns individuals to a calorie level based on their sex, age, and activity level.

The chart below identifies the calorie levels for males and females by age and activity level. Calorie levels are provided for each year of childhood, from 2-18 years, and for adults in 5-year increments.

<table>
<thead>
<tr>
<th>Activity level</th>
<th>MALES</th>
<th></th>
<th></th>
<th>FEMALES</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>AGE</td>
<td>Sedentary*</td>
<td>Mod. active*</td>
<td>Active*</td>
<td>AGE</td>
<td>Sedentary*</td>
<td>Mod. active*</td>
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<td>76 and up</td>
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</tr>
</tbody>
</table>

*Calorie levels are based on the Estimated Energy Requirements (EER) and activity levels from the Institute of Medicine Dietary Reference Intakes Macronutrients Report, 2002.

SEDENTARY = less than 30 minutes a day of moderate physical activity in addition to daily activities.

MOD. ACTIVE = at least 30 minutes up to 60 minutes a day of moderate physical activity in addition to daily activities.

ACTIVE = 60 or more minutes a day of moderate physical activity in addition to daily activities.

USDA
MyPyramid

Food Intake Patterns

The suggested amounts of food to consume from the basic food groups, subgroups, and oils to meet recommended nutrient intakes at 12 different calorie levels. Nutrient and energy contributions from each group are calculated according to the nutrient-dense forms of foods in each group (e.g., lean meats and fat-free milk). The table also shows the discretionary calorie allowance that can be accommodated within each calorie level, in addition to the suggested amounts of nutrient-dense forms of foods in each group.

<table>
<thead>
<tr>
<th>Daily Amount of Food From Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calorie Level</strong></td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
</tr>
<tr>
<td><strong>Vegetables</strong></td>
</tr>
<tr>
<td><strong>Grains</strong></td>
</tr>
<tr>
<td><strong>Meat and Beans</strong></td>
</tr>
<tr>
<td><strong>Milk</strong></td>
</tr>
<tr>
<td><strong>Oils</strong></td>
</tr>
<tr>
<td><strong>Discretionary calorie allowance</strong></td>
</tr>
</tbody>
</table>

1 Calorie Levels are set across a wide range to accommodate the needs of different individuals. The attached table “Estimated Daily Calorie Needs” can be used to help assign individuals to the food intake pattern at a particular calorie level.

2 Fruit Group includes all fresh, frozen, canned, and dried fruits and fruit juices. In general, 1 cup of fruit or 100% fruit juice, or 1/2 cup of dried fruit can be considered as 1 cup from the fruit group.

3 Vegetable Group includes all fresh, frozen, canned, and dried vegetables and vegetable juices. In general, 1 cup of raw or cooked vegetables or vegetable juice, or 2 cups of raw leafy greens can be considered as 1 cup from the vegetable group.

Vegetable Group Amounts are Per Week

<table>
<thead>
<tr>
<th>Calorie Level</th>
<th>1000</th>
<th>1200</th>
<th>1400</th>
<th>1600</th>
<th>1800</th>
<th>2000</th>
<th>2200</th>
<th>2400</th>
<th>2600</th>
<th>2800</th>
<th>3000</th>
<th>3200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark green veg.</td>
<td>1 c/wk</td>
<td>1.5 c/wk</td>
<td>1.5 c/wk</td>
<td>2 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
</tr>
<tr>
<td>Orange veg.</td>
<td>.5 c/wk</td>
<td>1 c/wk</td>
<td>1 c/wk</td>
<td>1.5 c/wk</td>
<td>2 c/wk</td>
<td>2 c/wk</td>
<td>2 c/wk</td>
<td>2 c/wk</td>
<td>2.5 c/wk</td>
<td>2.5 c/wk</td>
<td>2.5 c/wk</td>
<td>2.5 c/wk</td>
</tr>
<tr>
<td>Legumes</td>
<td>.5 c/wk</td>
<td>1 c/wk</td>
<td>1 c/wk</td>
<td>2.5 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3.5 c/wk</td>
<td>3.5 c/wk</td>
<td>3.5 c/wk</td>
<td>3.5 c/wk</td>
</tr>
<tr>
<td>Starchy veg.</td>
<td>1.5 c/wk</td>
<td>2.5 c/wk</td>
<td>2.5 c/wk</td>
<td>2.5 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>3 c/wk</td>
<td>6 c/wk</td>
<td>6 c/wk</td>
<td>7 c/wk</td>
<td>7 c/wk</td>
</tr>
<tr>
<td>Other veg.</td>
<td>3.5 c/wk</td>
<td>4.5 c/wk</td>
<td>4.5 c/wk</td>
<td>5.5 c/wk</td>
<td>6.5 c/wk</td>
<td>6.5 c/wk</td>
<td>7 c/wk</td>
<td>7 c/wk</td>
<td>8.5 c/wk</td>
<td>8.5 c/wk</td>
<td>10 c/wk</td>
<td>10 c/wk</td>
</tr>
</tbody>
</table>

4 Grains Group includes all foods made from wheat, rice, oats, cornmeal, barley, such as bread, pasta, oatmeal, breakfast cereals, tortillas, and grits. In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or 1/2 cup of cooked rice, pasta, or cooked cereal can be considered as 1 ounce equivalent from the grains group. At least half of all grains consumed should be whole grains.

Meat & Beans Group in general, 1 ounce of lean meat, poultry, or fish, 1 egg, 1 Tbsp. peanut butter, 1/4 cup cooked dry beans, or 1/2 ounce of nuts or seeds can be considered as 1 ounce equivalent from the meat and beans group.
6 Milk Group includes all fluid milk products and foods made from milk that retain their calcium content, such as yogurt and cheese. Foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not part of the group. Most milk group choices should be fat-free or low-fat. In general, 1 cup of milk or yogurt, 1 1/2 ounces of natural cheese, or 2 ounces of processed cheese can be considered as 1 cup from the milk group.

7 Oils include fats from many different plants and from fish that are liquid at room temperature, such as canola, corn, olive, soybean, and sunflower oil. Some foods are naturally high in oils, like nuts, olives, some fish, and avocados. Foods that are mainly oil include mayonnaise, certain salad dressings, and soft margarine.

8 Discretionary Calorie Allowance is the remaining amount of calories in a food intake pattern after accounting for the calories needed for all food groups—using forms of foods that are fat-free or low-fat and with no added sugars.

Estimated Daily Calorie Needs
To determine which food intake pattern to use for an individual, the following chart gives an estimate of individual calorie needs. The calorie range for each age/sex group is based on physical activity level, from sedentary to active.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Calorie Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>Sedentary</td>
</tr>
<tr>
<td>2–3 years</td>
<td>1,000</td>
</tr>
<tr>
<td>Females</td>
<td></td>
</tr>
<tr>
<td>4–8 years</td>
<td>1,200</td>
</tr>
<tr>
<td>9–13</td>
<td>1,600</td>
</tr>
<tr>
<td>14–18</td>
<td>1,800</td>
</tr>
<tr>
<td>19–30</td>
<td>2,000</td>
</tr>
<tr>
<td>31–50</td>
<td>1,800</td>
</tr>
<tr>
<td>51+</td>
<td>1,600</td>
</tr>
<tr>
<td>Males</td>
<td></td>
</tr>
<tr>
<td>4–8 years</td>
<td>1,400</td>
</tr>
<tr>
<td>9–13</td>
<td>1,800</td>
</tr>
<tr>
<td>14–18</td>
<td>2,200</td>
</tr>
<tr>
<td>19–30</td>
<td>2,400</td>
</tr>
<tr>
<td>31–50</td>
<td>2,200</td>
</tr>
<tr>
<td>51+</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Sedentary means a lifestyle that includes only the light physical activity associated with typical day-to-day life.

Active means a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life.
### Ninth Grade - Twelfth Grade

**Competencies:**

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M)

<table>
<thead>
<tr>
<th>Integrated Instruction</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1c.</td>
<td>Teacher will identify health problems (high blood pressure, cancer, diabetes, etc.) that may be caused from poor nutritional habits. <a href="http://www.cdc.org">www.cdc.org</a>.</td>
<td>Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Science: Life</td>
<td>2a.</td>
<td></td>
<td>Journal</td>
</tr>
<tr>
<td></td>
<td>3b.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>3h.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts:</td>
<td>4a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing,</td>
<td>6a.</td>
<td>Using a journal, students will record food intake and exercise habits to include time spent exercising for a seven day period. Upon completion of journal entries, students will reflect upon the foods consumed and amount of time spent exercising to determine if their habits are healthy or unhealthy based on CDC standards.</td>
<td></td>
</tr>
<tr>
<td>Listening,</td>
<td>6b.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaking</td>
<td>7b.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Enrichment/Acceleration:**

In small groups, students will contact the local health department to research a disease that is normally caused from poor nutritional habits. Students will ascertain the causes and effects of the disease. Students will present highlights of research to the class using a self-selected product.

**Remediation:**

Students will complete a nutritional newsletter that will inform parents and teachers of healthy habits that will increase their quality of life.
These low-calorie alternatives provide new ideas for old favorites. When making a food choice, remember to consider vitamins and minerals. Some foods provide most of their calories from sugar and fat but give you few, if any, vitamins and minerals.

This guide is not meant to be an exhaustive list. We stress reading labels to find out just how many calories are in the specific products you decide to buy.

<table>
<thead>
<tr>
<th>Higher-Fat Foods</th>
<th>Lower-Fat Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dairy Products</strong></td>
<td><strong>Dairy Products</strong></td>
</tr>
<tr>
<td>Evaporated whole milk</td>
<td>Evaporated fat-free (skim) or reduced-fat (2%) milk</td>
</tr>
<tr>
<td>Whole milk</td>
<td>Low-fat (1%), reduced-fat (2%), or fat-free (skim) milk</td>
</tr>
<tr>
<td>Ice cream</td>
<td>Sorbet, sherbert, low fat or fat-free frozen yogurt, or ice</td>
</tr>
<tr>
<td>Whipping cream</td>
<td>Imitation whipped cream (made with fat-free skim milk)</td>
</tr>
<tr>
<td>Sour cream</td>
<td>Plain low-fat yogurt</td>
</tr>
<tr>
<td>Cream cheese</td>
<td>Neufchatel or &quot;light&quot; cream cheese or fat-free cream cheese</td>
</tr>
<tr>
<td>Cheese (cheddar, Swiss, jack)</td>
<td>Reduced-calorie cheese, low-calorie processed cheeses, etc.</td>
</tr>
<tr>
<td>American cheese</td>
<td>Fat-free cheese</td>
</tr>
<tr>
<td>Regular (4%) cottage cheese</td>
<td>Fat-free American cheese or other types of fat-free cheeses</td>
</tr>
<tr>
<td>Whole milk mozzarella cheese</td>
<td>Low-fat (1%) or reduced-fat (2%) cottage cheese</td>
</tr>
<tr>
<td>Whole milk ricotta cheese</td>
<td>Part-skim milk, low-moisture mozzarella cheese</td>
</tr>
<tr>
<td>Coffee cream (1/2 and 1/2) or nondairy creamer (liquid, powder)</td>
<td>Part-skim milk ricotta cheese</td>
</tr>
<tr>
<td></td>
<td>Low-fat (1%) or reduced-fat (2%) milk or non-fat dry milk powder</td>
</tr>
</tbody>
</table>

| **Cereals, Grains, and Pastas** | **Cereals, Grains, and Pastas** |
| Ramen noodles | Rice or noodles (spaghetti, macaroni, etc.) |
| Pasta with white sauce (alfredo) | Pasta with red sauce (marinara) |
| Pasta with cheese sauce | Pasta with vegetables (primavera) |
| Granola | Bran flakes, crispy rice, etc. |
| | Cooked grits or oatmeal |
| | Reduced-fat granola |

| **Meat, Fish and Poultry** | **Meat, Fish and Poultry** |
| Coldcuts or lunch meats (bologna, salami, liverwurst, etc.) | Low-fat coldcuts (95 to 97% fat-free lunch meats, low-fat pressed meats) |
| Hot dogs (regular) | Lower-fat hot dogs |
| Bacon or sausage | Canadian bacon or lean ham |
| Regular ground beef | Extra lean ground beef, such as ground round or ground turkey (read labels) |
| Chicken or turkey with skin, duck, or goose | Chicken or turkey without skin (white meat) |
| Oil-packed tuna | Water-packed tuna (rinse to reduce sodium content) |


6/21/2005
<table>
<thead>
<tr>
<th>Low-Calorie, Lower-Fat Alternative Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meat</strong></td>
</tr>
<tr>
<td>- Beef (chuck, rib, brisket)</td>
</tr>
<tr>
<td>- Pork (spareribs, untrimmed loin)</td>
</tr>
<tr>
<td>- Frozen breaded fish or fried fish</td>
</tr>
<tr>
<td>(homemade or commercial)</td>
</tr>
<tr>
<td>- Whole eggs</td>
</tr>
<tr>
<td>- Frozen TV dinners</td>
</tr>
<tr>
<td>(containing more than 13 grams of fat</td>
</tr>
<tr>
<td>per serving)</td>
</tr>
<tr>
<td>- Chorizo sausage</td>
</tr>
<tr>
<td>- Beef (round, loin) (trimmed of</td>
</tr>
<tr>
<td>external fat) (choose select</td>
</tr>
<tr>
<td>cut)</td>
</tr>
<tr>
<td>- Pork tenderloin or trimmed, lean</td>
</tr>
<tr>
<td>smoked ham</td>
</tr>
<tr>
<td>- Fish or shellfish, unbreaded (fresh,</td>
</tr>
<tr>
<td>frozen, canned in water)</td>
</tr>
<tr>
<td>- Egg whites or egg substitutes</td>
</tr>
<tr>
<td>- Frozen TV dinners</td>
</tr>
<tr>
<td>(containing less than 13 grams of fat</td>
</tr>
<tr>
<td>per serving and lower in sodium)</td>
</tr>
<tr>
<td>- Turkey sausage, drained well (read</td>
</tr>
<tr>
<td>label)</td>
</tr>
<tr>
<td>- Vegetarian sausage (made with tofu)</td>
</tr>
</tbody>
</table>

| **Baked Goods**                          |
| - Croissants, brioches, etc.             |
| - Donuts, sweet rolls, muffins, scones,  |
|   or pastries                           |
| - Party crackers                         |
| - Cake (pound, chocolate, yellow)        |
| - Cookies                                |
| - Hard French rolls or soft brown 'n    |
|   serve rolls                           |
| - English muffins, bagels, reduced-fat  |
|   or fat-free muffins or scones          |
| - Low-fat crackers (choose lower in      |
|   sodium)                               |
| - Saltine or soda crackers (choose lower |
|   in sodium)                            |
| - Cake (angel food, white, gingerbread) |
| - Reduced-fat or fat-free cookies (      |
|   graham crackers, ginger snaps, fig    |
|   bars)                                 |
| - Puddings (made with skim milk)         |

| **Snacks and Sweets**                    |
| - Nuts                                   |
| - Ice cream, e.g., cones or bars         |
| - Custards or puddings (made with whole |
|   milk)                                 |
| - Popcorn (air-popped or light          |
|   microwave), fruits, vegetables        |
| - Frozen yogurt, frozen fruit or        |
|   chocolate pudding bars                |
| - Puddings (made with skim milk)         |

| **Fats, Oils, and Salad Dressings**      |
| - Regular margarine or butter            |
| - Regular mayonnaise                    |
| - Regular salad dressings               |
| - Butter or margarine on toast or       |
|   bread                                |
| - Oils, shortening, or lard             |
| - Light spread margarines, diet         |
|   margarine, or whipped butter, tub or  |
|   squeeze bottle                       |
| - Light or diet mayonnaise or mustard   |
| - Reduced-calorie or fat-free salad     |
|   dressings, lemon juice, or            |
|   plain, herb flavored, or wine vinegar|
| - Jelly, jam, or honey on bread or      |
|   toast                                |
| - Nonstick cooking spray for stir-frying|
|   or sautéing                          |
| - As a substitute for oil or butter,    |
|   use applesauce or prune               |
|   puree in baked goods                  |

| **Miscellaneous**                        |
| - Canned cream soups                    |
| - Canned beans and franks               |
| - Gravy (homemade with fat and/or milk) |
| - Fudge sauce                           |
| - Avocado on sandwiches                 |
| - Guacamole dip or refried beans with   |
|   lard                                  |
| - Canned broth-based soups              |
| - Canned baked beans in tomato sauce    |
| - Gravy mixes made with water or        |
|   homemade with the fat                 |
|   skimmed off and fat-free milk         |
| - Chocolate syrup                       |
| - Cucumber slices or lettuce leaves      |
| - Salsa                                 |


6/21/2005
The New Food Guide Pyramid

The food guide pyramid has been rebuilt! The biggest change is that the food groups are no longer horizontal blocks of the pyramid. Now, a rainbow of colored, vertical stripes represent the five food groups, as well as fats and oils. Here's what the colors stand for:

- orange - grains
- green - vegetables
- red - fruits
- blue - milk and dairy products
- purple - meat, beans, fish, and nuts
- yellow - oils

The U.S. Department of Agriculture (USDA) changed the pyramid because they wanted to do a better job of telling Americans how to be healthy. Notice the guy climbing the staircase up the side of the pyramid. That's a way of showing how important it is to exercise and be active. For a kid, that means playing a lot! The steps are also a way of saying that you can make changes little by little to be healthier. One step at a time, get it?

The Pyramid Speaks

Let's look at some of the other messages this new symbol is trying to send:

Eat a variety of foods. A balanced diet is one that includes all the food groups.

Eat less of some foods, and more of others. You can see that the bands for meat and protein (purple) and oils (yellow) are skinnier than the others. That's because you need less of those kinds of foods than you do of fruits, vegetables, grains, and dairy foods.

You also can see the bands start out wider and get thinner as they approach the top. That's designed to show you that not all foods are created equal, even within a healthy food group like fruit. For instance, apple pie might be in that thin part of the fruit band because it has a lot of added sugar and fat. A whole apple - crunch! - would be down in the wide part because you can eat more of those within a healthy diet.

Make it personal. Through the USDA's MyPyramid website, people can get personalized recommendations about the mix of foods they need to eat and how much they should be eating. The USDA has said that a kids' version of the pyramid will be available soon.

How Much Do I Need to Eat?

Everyone wants to know how much they should eat to stay healthy. It's a tricky question, though. It depends on your age, whether you're a girl or a boy, and how active you are. Kids who are more active burn more calories, so they need more calories. But we can give you some estimates for how much you need of each food group.

Grains

http://kidshealth.org/PageManager.jsp?dn=KidsHealth&lic=1&ps=307&cat_id=119&article... 7/5/2005
Grains are measured out in ounce equivalents. What the heck are they? Ounce equivalents are just another way of showing a serving size.

Here are ounce equivalents for common grain foods. An ounce equivalent equals:

1 piece of bread
1/2 cup of cooked cereal, like oatmeal
1/2 cup or rice or pasta
1 cup of cold cereal

4- to 8-year-olds need 4 to 5 ounce equivalents each day.
9- to 13-year-old girls need 5 ounce equivalents each day.
9- to 13-year-old boys need 6 ounce equivalents each day.

And one last thing about grains: Try to eat a lot of whole grains, such as 100% wheat bread, brown rice, and oatmeal.

**Vegetables**
Of course, you need your vegetables, especially those dark green and orange ones. But how much is enough? Vegetable servings are measured in cups.

4- to 8-year-olds need 1 1/2 cups of veggies each day.
9- to 13-year-old girls need 2 cups of veggies each day.
9- to 13-year-old boys need 2 1/2 cups of veggies each day.

**Fruits**
Sweet, juicy fruit is definitely part of a healthy diet. Here's how much you need:

4- to 8-year-olds need 1 cup to 1 1/2 cups of fruit each day.
9- to 13-year-old girls need 1 1/2 cups of fruit each day.
9- to 13-year-old boys need 1 1/2 cups of fruit each day.

**Milk and Other Calcium-Rich Foods**
Calcium builds strong bones to last a lifetime, so you need these foods in your diet.

4- to 8-year-olds need 1 cup to 2 cups of milk (or another calcium-rich food) each day.
9- to 13-year-old girls need 3 cups of milk (or another calcium-rich food) each day.
9- to 13-year-old boys need 3 cups of milk (or another calcium-rich food) each day.

If you want something other than milk, you can substitute yogurt, cheese, or calcium-fortified orange juice — just to name a few.

**Meats, Beans, Fish, and Nuts**
These foods contain iron and lots of other important nutrients. Like grains, these foods are measured in ounce equivalents.

An ounce equivalent of this group would be:

1 ounce of meat, poultry, or fish
1/4 cup cooked dry beans
1 egg
1 tablespoon of peanut butter
a small handful of nuts or seeds
4- to 8-year-olds need 3 to 4 ounce equivalents each day.
9- to 13-year-old girls need 5 ounce equivalents each day.
9- to 13-year-old boys need 5 ounce equivalents each day.

Whoa! That's a lot to swallow. The good news is that your mom, dad, and the other grownups in your life will help you eat what you need to stay healthy. There's more good news - you don't have to become a perfect eater overnight. Just remember those stairs climbing up the side of the new pyramid and take it one step at a time.

Reviewed by: Barbara P. Homeier, MD
Date reviewed: April 2005
### Weekly Food Diary

<table>
<thead>
<tr>
<th></th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner/Supper</th>
<th>Snacks</th>
<th>Exercise &amp; Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 4</strong></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Go Back

http://mofb.org/webquest/wq33c.htm

7/5/2005
<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner/Supper</th>
<th>Snacks</th>
<th>Exercise &amp; Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Go Back

http://mofb.org/webquest/wq33c.htm
### My Favorite Food List

<table>
<thead>
<tr>
<th>Foods I Like and Consume Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
</tr>
<tr>
<td>Vegetables</td>
</tr>
<tr>
<td>Milk</td>
</tr>
<tr>
<td>Meat &amp; Beans</td>
</tr>
<tr>
<td>Fruit</td>
</tr>
<tr>
<td>Oils</td>
</tr>
<tr>
<td>Other (Discretionary Calories)</td>
</tr>
</tbody>
</table>

Go Back

http://mofb.org/webquest/wq33e.htm

7/5/2005
### Ninth Grade - Twelfth Grade

**Competencies:**

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

4. Analyze the influence of culture, media, technology, and other factors on health. (H, CH, C, PH, M)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health (Ph, N, H, F, D)

<table>
<thead>
<tr>
<th>Integrated Instruction (with strands)</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3h.</td>
<td>Teacher will discuss the habits of healthy individuals, such as learning how to read food labels. Students will analyze how correctly and frequently reading food labels is conducive to making healthy choices. <a href="http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/Shop_1%C2%AA.htm">http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/Shop_1ª.htm</a> (handout available for nutritional label)</td>
<td>Teacher Observation Graded based on rubric for participation.</td>
</tr>
<tr>
<td>Language Arts: Listening, Viewing, Speaking</td>
<td>3i.</td>
<td>Teacher will display or distribute a nutritional facts label in order to generate a greater understanding of serving sizes and servings per container. Based on products brought for lunch or snack, students will compare and contrast nutritional products and unhealthy products by way of a journal entry.</td>
<td>Written product rubric. See appendix.</td>
</tr>
<tr>
<td>Science: Life</td>
<td>4b.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6b.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrichment/Acceleration:</td>
<td></td>
<td>In small groups, students will create a new food. Using the labels presented during whole group discussion as a guide, students will design a nutritional label for this product. Students will consider target marketing audience while designing the label.</td>
<td></td>
</tr>
<tr>
<td>Remediation: Students will use the following website to determine the number of servings consumed during one meal: <a href="http://www.dairycouncilofca.org/activities/quiz/acti_calc.asp">http://www.dairycouncilofca.org/activities/quiz/acti_calc.asp</a></td>
<td>Calcium Quiz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This exercise (see attachment) includes the number of servings they consumed per meal, such as from one 8 ounce serving of chocolate milk, 1 cup of broccoli, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher will reemphasize the importance of portion control and discuss the role that our environment plays in portion sizes. Students will visit <a href="http://hin.nhlbi.nih.gov/portion/keep.htm">http://hin.nhlbi.nih.gov/portion/keep.htm</a> to participate in an exercise on portion distortion.</td>
<td>Menu planner from web site.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Low-Calorie Shopping List

We live in a fast-moving world. To reduce the time you spend in the kitchen you can improve your organization by using a shopping list and keeping a well-stocked kitchen. Shop for quick, low-fat food items, and fill your kitchen cupboards with a supply of low-calorie basics.

Read labels as you shop. Pay attention to the serving size and the servings per container. All labels list total calories in a serving size of the product. Compare the total calories in the product you choose with others like it; choose the one that is lowest in calories. Below is a label that identifies important information.

**Nutrition Facts**

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>1 cup (228g)</th>
<th>Servings Per Container</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount Per Serving</td>
<td>Calories 250</td>
<td>Calories from Fat 110</td>
<td></td>
</tr>
<tr>
<td>Total Fat</td>
<td>12g</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>6g</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>30mg</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td>830mg</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>31g</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>5g</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Sugars</td>
<td>9g</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>5g</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

**Check for:**

- Serving size
- Number of servings
- Calories
- Total Fat in grams
- Saturated Fat in grams
- Cholesterol in milligrams
- Sodium in milligrams

Here, the label gives the amounts for the different nutrients in one serving. Use it to help you keep track of how many calories, fat, saturated fat, cholesterol, and sodium you are getting from different foods.

- The "% Daily Value" shows you how much of the recommended amounts the food provides in one serving, if you eat 2,000 calories a day. For example, one serving of this food gives you 18 percent of your total fat recommendation.

- Here you can see the recommended daily amount for each nutrient for two calorie levels. If you eat a 2,000 calorie diet, you should be eating less than 65 grams of fat and less than 20 grams of saturated fat. If you eat 2,500 calories a day, you should eat less than 80 grams of fat and 25 grams of saturated fat. Your daily amounts may vary higher or lower, depending on the calories you eat.

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6/21/2005
Think about what you ate yesterday at breakfast, lunch, dinner, and snacks. Click on each item that you ate in the List of Foods and enter the number of servings you had of that item. Please enter servings in decimals, e.g., 1 serving or 2.5 servings.

<table>
<thead>
<tr>
<th>Item</th>
<th>Serving Size</th>
<th>No. of Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfat or low-fat Yogurt</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Milk (whole, low-fat or nonfat)</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Milkshake (any flavor)</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Chocolate milk (whole, low-fat or nonfat)</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Cheese (Cheddar/Monterey Jack types)</td>
<td>1-1/2 oz.</td>
<td></td>
</tr>
<tr>
<td>Ricotta Cheese</td>
<td>1/8 cup</td>
<td></td>
</tr>
<tr>
<td>Feta Cheese</td>
<td>1/4 cup</td>
<td></td>
</tr>
<tr>
<td>Parmesan Cheese</td>
<td>1/8 cup</td>
<td></td>
</tr>
<tr>
<td>Tofu processed with calcium</td>
<td>1/8 cup</td>
<td></td>
</tr>
<tr>
<td>Cream soup</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Custard or flan</td>
<td>1/8 cup</td>
<td></td>
</tr>
<tr>
<td>Pudding</td>
<td>1/8 cup</td>
<td></td>
</tr>
<tr>
<td>Frozen yogurt</td>
<td>1/8 cup</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Serving Size</th>
<th>No. of Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cottage cheese</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Mustard greens</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Bok choy</td>
<td>1/2 cup (4 oz)</td>
<td></td>
</tr>
<tr>
<td>Canned fish with bones (salmon, mackerel)</td>
<td>2 oz.</td>
<td></td>
</tr>
<tr>
<td>Turnip greens</td>
<td>1/8 cup (4 oz)</td>
<td></td>
</tr>
<tr>
<td>Kale</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Ice milk (full fat, low-fat)</td>
<td>1/8 cup (4 oz)</td>
<td></td>
</tr>
<tr>
<td>Ice cream</td>
<td>1/8 cup (4 oz)</td>
<td></td>
</tr>
<tr>
<td>Almonds</td>
<td>1/8 cup (2 oz)</td>
<td></td>
</tr>
<tr>
<td>Hot chocolate (made with milk)</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Broccoli</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Beans or peas</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Corn tortillas</td>
<td>one tortilla</td>
<td></td>
</tr>
<tr>
<td>Cream cheese</td>
<td>1 Tablespoon</td>
<td></td>
</tr>
<tr>
<td>Sardines</td>
<td>one 3-inch sardine</td>
<td></td>
</tr>
</tbody>
</table>

**Calcium Fortified Foods**

<table>
<thead>
<tr>
<th>Item</th>
<th>Serving Size</th>
<th>No. of Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium-fortified soy beverage</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
<tr>
<td>Calcium-fortified orange juice</td>
<td>1 cup (8 oz)</td>
<td></td>
</tr>
</tbody>
</table>

http://www.dairycouncilofca.org/activities/quiz/acti_calc.asp
Calcium-fortified frozen waffles
Calcium-fortified cereal
Calcium-fortified energy bars

2 waffles
1 cup (8 oz)
1 bar
Keep an Eye on Portion Size

What is the difference between Portions and Servings?

A "portion" can be thought of as the amount of a specific food you choose to eat for dinner, snack, or other eating occasion. Portions, of course can be bigger or smaller than the recommended food servings.

A "serving" is a unit of measure used to describe the amount of food recommended from each food group. It is the amount of food listed on the Nutrition Facts panel on packaged food or the amount of food recommended in the Food Guide Pyramid and the Dietary Guidelines for Americans.

For example, 6-11 servings of whole grains are recommended daily. A recommended serving of whole grains would be 1 slice of bread or 1/2 cup of rice or pasta. (Download the Serving Size Card for more examples of recommended serving sizes.) People often confuse the recommendation to mean 6 to 11 portions with no regard to size. It is not 6 to 11 portions where one portion could mean a large bowl of pasta rather than 1/2 cup. Keep an eye on portion size to see how your portions compare with the recommended servings.

Check out the NHLBI menu planner and sample menus for weight loss to see examples of appropriate portions and serving size.

The sample menus help you create reduced calorie meal plans. These items use the servings recommended by the American Dietetic Association's (ADA) Food Exchange List. The servings recommended by the ADA exchange list may differ from the Nutrition Facts panel and the Dietary Guidelines For Americans. See the exchange list to give yourself more choices.

The menu planner helps you to create your own meals or add up your daily calorie intake.

http://hin.nhlbi.nih.gov/portion/keep.htm

6/21/2005
Ninth-Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (D, PH, M, S, N, C, H)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (S, D, N, M)

6. Demonstrate the ability to use goal-setting and decision-making skills to enhance health. (N, F, PH, H, D, M, S)

<table>
<thead>
<tr>
<th>Integrated instruction</th>
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<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1c.</td>
<td>Students will access the following website:</td>
<td>Rubric for essays</td>
</tr>
<tr>
<td>Math:</td>
<td>3h.</td>
<td><a href="http://www.ba.ars.usda.gov/cnrg/services/cnmapft.html">www.ba.ars.usda.gov/cnrg/services/cnmapft.html</a></td>
<td>Feedback after checking statistical comparisons</td>
</tr>
<tr>
<td>Data analysis, Number sense</td>
<td>6a.</td>
<td>After accessing the Action for Healthy Kids Community Mapping project, students will compare Mississippi dietary statistics to another state in the northern, eastern, western and southern regions of the United States.</td>
<td></td>
</tr>
<tr>
<td>Social Studies: Geography</td>
<td></td>
<td>Student wills make a comparison chart of three statistical facts for these four states. The student will write a brief essay on different factors that may influence the variability in statistics across states.</td>
<td></td>
</tr>
<tr>
<td>Language Arts: Viewing, Writing, Reading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrichment/Acceleration: Students will use the factors listed for the southern states to create a campaign encouraging peers to make healthy lifestyle choices.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remediation: Students will create a bar graph comparing the statistics of four states, one per region.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ninth Grade - Twelfth Grade

Competencies:

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

4. Analyze the influence of culture, media, technology, and other factors on health. (H, CH, C, PH, M)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (Ph, N, H, F, D)

7. Demonstrate the ability to advocate personal, family, and community health. (C, CH, F, S, D)

<table>
<thead>
<tr>
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<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1c. 3b. 3h. 3i. 4b. 6a. 7b.</td>
<td>Teacher will place the following writing prompt on the board. &quot;How do you describe healthy eating?&quot; Students will respond in their journal. Teacher will discuss with students the importance of eating healthy.</td>
<td>Teacher Observation graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Language Arts: Reading, Writing, Speaking, Listening, Viewing</td>
<td>Students will list at least five commercials or advertisements that promote an unhealthy lifestyle.</td>
<td>Written product rubric</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teacher will have students list at least five commercials or advertisements that promote a healthy lifestyle.</td>
<td>Visual product rubric</td>
<td></td>
</tr>
<tr>
<td>Remediation:</td>
<td><strong>Teacher observation based on rubric. See appendix.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Students will research different diseases (anorexia nervosa, cardiovascular diseases, etc.) that are the outcomes of unhealthy lifestyles.  
[www.americanheartassociation.com](http://www.americanheartassociation.com)  
[www.anred.com/health.html](http://www.anred.com/health.html)  
[www.cdc.org](http://www.cdc.org) | |

<table>
<thead>
<tr>
<th>Enrichment/Acceleration:</th>
<th><strong>Grade based on rubric for group work or presentation. See appendix.</strong></th>
</tr>
</thead>
</table>
| In groups, students will create a short skit designed to convince classmates why it is important to partake in a healthy lifestyle.  
**OR**  
Students will create a bumper sticker promoting a healthy lifestyle designed to increase the awareness of a better quality of life. | |

| Bumper sticker graded using on visual product rubric. | |
What does healthy eating look like?

If we were to believe advertising and commercials, we would think healthy, normal eating is either constant dieting or regular consumption of high-sugar, high-fat fast foods and snacks. Neither is true. Long-term caloric restriction can lead to an eating disorder, and a steady diet of sugary and fatty foods, especially in the absence of physical activity, can produce overweight, obesity, and the health problems associated with those conditions.

Some people have eaten in a disordered way for so long that they have forgotten what normal, healthy eating is. Basically, it is respecting your body so that you eat when you are hungry, and you eat what you are hungry for, and you stop eating when you are satisfied. This means that you do not use food to try to meet needs other than nourishment; for example, eating a box of donuts because you are lonely (or anxious, or angry, or bored, or sad). It also means never refusing to eat something your body is really hungry for just to make a statement of your strength, or will power or "goodness" or specialness. If you do, you make that forbidden food an object of obsession, and chances are you will binge on it later — one chocolate truffle now, or a whole box later.

And lastly, eating normally means paying attention to your body so you will recognize when it is hungry for simple things like green beans and whole wheat bread, not just the sweet and fatty foods you routinely deny it.

But it's a big step from chronic restriction or frequent diet-binge-purge cycles to rule-free spontaneous eating. Most people need a few guidelines to provide reassurance when they begin the transition. The following suggestions are based on current recommendations made by scientists at the U.S. Department of Agriculture. Best wishes as you begin to incorporate them into your life, one or two at a time so you don't feel overwhelmed and panicky.

Food choices and calories

- Sufficient food and calories to achieve and maintain a medically healthy weight, neither overweight nor underweight. A sedentary woman might maintain healthy weight on 1800 calories per day while a very active woman might require 2800 calories per day. Male caloric requirements are correspondingly higher. (Note: Some people with anorexia nervosa think they

http://www.anred.com/hltheat.html
can be healthy eating as little as 800-900 calories per day or even less. That is simply not true. Children age one to two years require on average about 950 calories per day. Older, bigger people require far more as outlined above.)

- **Fruits and vegetables.** The goal is nine servings a day (2 cups of fruit and 2-1/2 cups of veggies). Choose dark green and orange items often, plus beans, other starchy vegetables and root vegetables for a wide selection of vitamins, minerals, anti-oxidants, and micro nutrients. Choose whole fruits over juice. It contains healthy fiber and micro nutrients not found in juice, which can be high in sugar. Don’t panic. Serving sizes for fruits and veggies are small, just half a cup.

- **Whole grains.** The goal is three or more servings of whole wheat, brown rice, or other unprocessed grains such as old-fashioned oatmeal. Serving size is only 1 ounce, which is a single slice of bread or 1/2 cup of cooked cereal.

- **Dairy foods.** The goal is three cups of fat-free or low-fat milk per day or equivalent amounts of yoghurt, cheese, etc. Dairy foods provide calcium and protein, both of which are needed for healthy muscles and bones. Avoid whole-fat dairy selections. Low-fat items are nutritious without the saturated fat. Recommended daily allowances: at least 1200 mg. per day of calcium for women who menstruate and 1500 mg. per day for those who don’t. Men also need calcium for strong bones. If you are afraid of the calories in dairy products, research (American Journal of Clinical Nutrition, 2003) suggests that calcium also helps control blood pressure and may aid in the breakdown of body fat and cause fat cells to make less fat.

- **Keep cholesterol consumption down.** That means eating fewer animal foods and more fruits, vegetables, and whole grains (cereals, bread, pasta, etc.)

- **Meat, fish, poultry, and other protein.** The goal is only 6-7 ounces per day, or about two Servings, each the size of the palm of your hand. Choose low fat items such as chicken breast over fatty red meat. One exception: fatty fish such as salmon and tuna contain Omega-3 fatty acids that protect the heart and cardiovascular system against damage. The goal is two servings of fish a week.

- **Limit intake of sugar, salt, and alcohol,** which carry health risks if consumed in excess. Watch out for "high-fructose corn syrup" in processed foods and soft drinks. It is another type of sugar. Soft drinks are notoriously high in sugar. So is alcohol in addition to being an intoxicant. If you drink, do so in moderation, which is defined as no more than one five-ounce glass of wine, OR one 12-ounce can of beer, OR one ounce of distilled spirits per day for women. Because of differences in physiology, moderate alcohol usage for men is defined as two servings per day.

- **Healthy fat.** Don't eliminate all fat from your diet. Some is necessary for life and health. Just make sure that most of it is unsaturated or mono saturated,
such as that found in fish, nuts, and vegetable oils. Olive and canola oils are particularly healthful.

- **Unhealthy fat.** The saturated fat found in regular ice cream, red meat, whole-fat dairy foods (4% milk, cream, butter), and processed foods should be limited to 10 percent or less of your daily fat intake. Some saturated fat is necessary, but very little. Especially unhealthy are trans fats, which increase heart disease risk. Check labels and avoid anything with coconut oil, palm oil and "hydrogenated vegetable oil." The foods most often containing trans fats are snack foods, packaged baked goods (cookies, darn it!), and stick margarine.

- **Salt and potassium.** For the sake of your heart, especially in later life, it's a good idea to limit salt intake to 1500-2000 milligrams per day. Read labels and don't add extra salt at table. Canned soup, frozen dinners, and snack foods such as chips are big sources of excess salt. Everyone needs potassium, and purgers must be especially careful to get enough. Good sources are bananas, oranges, raisins, apricots, avocados, dates, and cantaloupe.

- **What about a vitamin pill?** There is no scientific evidence at this point that justifies taking mega doses of any vitamin or mineral. In fact, you can hurt yourself by overdoing supplements. That having been said, one multi vitamin and mineral pill per day may be a good idea, especially if your diet is lacking in some areas. Please check with your physician to make sure it's appropriate for you. Everyone is different.

- **Note:** After age 50, calorie requirements go down, about 10-20% lower than the values in the chart below. During childhood and adolescence, however, more calories and more protein are required to add muscle mass to the developing body. Pregnant women and nursing moms need more healthy calories as well.

**Additional recommendations**

- **Eat a variety** of nutrient-rich food and beverages from the basic food groups (proteins, fats, and carbohydrates). Eating only a few "safe" foods day after day will deprive you of vitamins, minerals and micro nutrients contained in greater or lesser amounts in a wide range of foods.

- **To lose weight** (when appropriate), reduce portion sizes but still eat a variety of foods. To gain weight, increase portion sizes and enjoy a variety of different foods. If the idea of weight gain panics you, make the increases slowly, and if you get stuck, ask a dietitian (RD) to help you make a meal plan tailored for your specific needs.

- **Choose healthy carbohydrates** over refined carbs. For example, eat lots of whole grains, fruits, vegetables, beans, oatmeal, brown rice, etc. and stay away from white bread, white rice, snack-pack treats, regular soft drinks, processed starchy, sugary, and fatty foods, etc. Use refined carbs as

http://www.anred.com/hltheat.html
Counting calories

Don't obsess by counting every calorie, but be aware that your body's energy requirements are higher than what is provided by many diets. Use the following as a guideline. (From the University of California Wellness Letter, October 2002)

<table>
<thead>
<tr>
<th>Activity level</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very light</td>
<td>1,910</td>
<td>2,465</td>
</tr>
<tr>
<td>Light</td>
<td>2,225</td>
<td>3,020</td>
</tr>
<tr>
<td>Moderate</td>
<td>2,350</td>
<td>3,260</td>
</tr>
<tr>
<td>Heavy</td>
<td>2,800</td>
<td>3,975</td>
</tr>
</tbody>
</table>

Healthy lifestyle choices

- **At least eight hours of sleep every night,** more if you need it. Sleep deprivation seems to impair the way the human body uses insulin, which can lead to overweight and possible problems with blood sugar.

- **Thirty to sixty minutes of physical activity every day.** It does not have to be done all at one time, and routine activities such as climbing stairs and yard maintenance count.

- **No smoking, ever,** and if you use alcohol, no more than two standard servings per day for males and one standard serving per day for females.

- **A nutritious breakfast every morning.** Ninety-six percent of everyone who loses weight and keeps it off eats breakfast every day, according to Ann Yelmokas McDermot, a nutrition scientist at Tufts University (USDA Nutrition Research Center)

- **Plus all the things your mother probably has nagged you about:** Wear your seat belt when in a car. No unprotected sex unless you are in a strictly monogamous relationship. Insist on counseling or leave relationships if you are physically, sexually, or emotionally abused. If you are dependent on alcohol or other drugs, get treatment and get clean. Many people with eating disorders are also chemically dependent.

In summary

- **For long-term health,** eat minimal amounts of animal fats, trans fats, sugar, and junk food.

- **Choose lean protein and dairy:** chicken breast, turkey breast (remove the skin), fish, and low- or non-fat dairy products over red meat and high-fat dairy foods.

http://www.anred.com/hltheat.html
• Choose lots of brightly colored fruits and veggies: broccoli, beets, cantaloupe, oranges, green peppers, red and yellow peppers, carrots, yams, and so forth. If it's brightly colored and in the produce department, chances are it's very good for you.

• Eat moderate portions. When eating out, mark a healthy-sized portion and put it on a separate plate. Leave the rest on the table or take it home for a second meal tomorrow.

• Stay active and exercise regularly. Sixty minutes a day is ideal, but everything (even climbing stairs and walking to school or work) counts.

• Above all, NEVER deny yourself a reasonable portion of something you really want. If you do, you set yourself up to binge on it later.

Postscript

• Some people, especially in the beginning of recovery, find a structured meal plan more useful than the general guidelines we give above. If you are one of these people, we recommend you consider the DASH Diet (Dietary Approaches to Stop Hypertension). This meal plan was designed to lower high blood pressure, but it contains the elements of healthy eating: low in total fat, saturated fat, and cholesterol, and rich in fruits, vegetables, whole grains, and low fat dairy products.

• Download or order the DASH Diet at the National Heart, Lung, and Blood Institute's Web site. Single copies are free. If you already have low blood pressure, please check with your physician before you begin this diet plan.

• The USDA has just (spring of 2005) updated its food pyramid. This much expanded version lets you customize a food plan for your age, sex, and activity level. To do that, and get more good information about nutrition, visit the USDA's website.

Eating disorders are powerful foes. They can destroy something as basic as the ability to feed oneself, something babies to do learn in the first year of life. Getting back on track can be a struggle. If you can't make the above information work for you, ask your physician for a referral to a registered dietitian (R.D.) who can help you design a healthy meal plan and then provide support you as you learn to implement that plan.

Please Note: ANRED information is not a substitute for medical or psychological evaluation and treatment. For help with the physical and emotional problems associated with eating disorders, talk to your physician and a mental health professional.

http://www.anred.com/nltheat.html

6/21/2005
Ninth Grade – Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (N, PH, D)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (N, PH, F, M, H, D)

7. Demonstrate the ability to advocate for personal, family, and community health. (C, CH, F, S, D)

<table>
<thead>
<tr>
<th>Integrated Instruction (with strands)</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1c.</td>
<td>Teacher will present lesson on choosing whole grains (attached). The lesson explains the health benefits of fiber, and the identification of whole grain products.</td>
<td>Teacher observation graded based on rubric. See attached.</td>
</tr>
<tr>
<td>Science: Life</td>
<td>6a.</td>
<td>Students will discuss the incidence of heart disease and colon cancer in their families and role of fiber in decreasing the risks of these diseases.</td>
<td>Teacher observation</td>
</tr>
<tr>
<td>Language Arts:</td>
<td>7b.</td>
<td>Students will read the labels of whole-grain products and their refined counterparts and discuss the criteria for choosing whole-grains.</td>
<td>Recipe graded based on ingredients list &amp; fiber content.</td>
</tr>
<tr>
<td>Listening, Reading</td>
<td></td>
<td>Students will research the internet, cookbooks, and family sources to identify recipes that are rich in whole grains. The students will compile a “Whole Grains Recipe Booklet” to share with their families.</td>
<td></td>
</tr>
<tr>
<td>Social Studies: Economics</td>
<td></td>
<td>Enrichment/Acceleration: In small groups, students will create a marketing campaign designed to influence teenagers to consume more whole grains.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remediation: Students will compare and contrast three similar products made with whole grain with three products made with refined flour products in terms of nutritional value and cost.</td>
<td></td>
</tr>
</tbody>
</table>
Choosing Whole Grains

Objective:
At the end of this lesson, the student will be able to explain the health benefits of including fiber in the diet and to identify foods that are rich in whole grains.

Materials:
Nutrition Facts Labels:
- whole wheat bread (100% whole wheat on the label)
- refined bread product
- bran cereal (more than 4 grams fiber)
- breakfast cereal (less than 4 grams fiber)
- brown rice
- white rice

Lesson:
The new Dietary Guidelines and MyPyramid recommend that you make half of your grains whole. This means that you should strive to eat at least 3 oz of whole-grain cereals, breads, crackers, rice, or pasta every day.

Whole grain products provide more nutrients and fiber than their refined versions. There are two categories of fiber with unique health benefits: soluble and insoluble.

Soluble refers to the ability of fiber to dissolve in water. Soluble fiber absorbs water, swells, and slows the passage of digestive matter. This type of fiber helps you to feel fuller after a meal and may help with weight management by curbing your appetite.

Soluble fiber (found in oats, oat bran, brown rice, other grains, fruits, vegetables and dried beans and peas [legumes]) can help lower cholesterol levels. The health benefit of lower cholesterol levels is that it reduces the risk of heart disease.

Insoluble fiber cannot dissolve as well in water. This type of fiber increases and softens stools and increases the passage of digestive matter. Insoluble
fiber (found in wheat bran, corn bran, whole wheat breads and cereals, fruits, and vegetables) promotes regularity. The health benefit of regular bowel movements is that it decreases risk for colon cancer. Trying to get more soluble and insoluble fiber in your diet may seem like too much to think about. Don’t sweat it; many foods contain both types of fiber. If you eat a variety of fiber-rich foods, you will get the health benefits from both types of fiber.

When you decide that you want to increase the fiber in your diet, remember to do so gradually. Your gastrointestinal (GI) tract will need time to adjust. Begin with 20 grams of fiber each day for a week or so, and then add 5 grams per day each week thereafter until you reach the fiber recommendations that are appropriate for you. Go to MyPyramid.gov to figure an amount that is right for you. It is also important to drink plenty of fluids as you add fiber to your diet. You will need this extra fluid for the fiber to dissolve in your GI tract. The extra fluid will keep you from becoming dehydrated and keep things moving along.

Use the nutrition facts labels listed above to illustrate the following points about increasing fiber in the diet by choosing whole grains:

- Read the nutrition label on grain products. Foods that are good sources of fiber will have at least 2.5 grams per serving. Foods that are high in fiber will have 5 grams per serving.
- To choose whole grain breads, look for whole wheat or whole grains as the first ingredient on the ingredient list. A product that states 100% whole wheat (or 100% whole grain) will be a good choice as well. If you see enriched flour on the list of ingredients, then the bread is not a whole grain product.
- To choose cereals that are rich in fiber, look for those that provide 4 grams of fiber per serving or more.
- Choose brown rice over enriched white rice and try grains that are new to you like barley, bulgur wheat, couscous. These are fiber-rich whole grains.

**Evaluation:**
Immediately after the lesson the students will discuss the incidence of heart disease and colon cancer in their families and the significance of the lesson in reducing their risks of these diseases.
Students will demonstrate the retention of their knowledge of whole grains by finding recipes that include whole grains. One week after this lesson, each student will hand in one recipe that they have printed from the computer, photocopied, or neatly written from internet sources, cookbooks, or family recipes. Recipes that provide nutrition facts are highly encouraged, as are recipes that have been tested with favorable results. The instructor will evaluate the recipes and assign the compilation of the appropriate recipes into a packet so that each student will have a "Whole Grains Recipe Booklet" for their family.

References:


This lesson was developed by Rebecca Kelly, PhD, RD, LD. Assistant Professor of Culinary Arts at Mississippi University for Women. July 26, 2005.
Ninth Grade - Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PB, F, D)

6. Demonstrate the ability to use goal-setting and decision making skills to enhance health. (N, PH, DA, F, D)

7. Demonstrate the ability to advocate personal, family, and community health. (C, CH, F, S, D)

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<th>Suggested Assessment Methods</th>
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</thead>
<tbody>
<tr>
<td>Health Science</td>
<td>1c.</td>
<td>Teacher will discuss with students the importance of calcium and the role it plays in the body. Students will compare foods that are high in calcium to those that are low in calcium. <a href="http://www.dairycouncilofca.org/edu/edu_prog_evo_bone5.htm">http://www.dairycouncilofca.org/edu/edu_prog_evo_bone5.htm</a></td>
<td>Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Art</td>
<td>3h.</td>
<td>Students will complete exercise to determine the number of servings they consumed of High Calcium foods and Medium Calcium foods.</td>
<td>Calcium activity</td>
</tr>
<tr>
<td>Language Arts</td>
<td>6a.</td>
<td>Teacher will discuss with students bone building exercises and students will complete a quiz to determine bone building exercises. Quiz found at: <a href="http://www.dairycouncilofca.org/edu/edu_prog_evo_bone5.htm">http://www.dairycouncilofca.org/edu/edu_prog_evo_bone5.htm</a></td>
<td>Quiz</td>
</tr>
<tr>
<td></td>
<td>7a.</td>
<td>Students will develop an ad campaign to promote the consumption of high calcium foods along with bone building exercises, for example, “Got Milk” Campaign.</td>
<td>Ad Campaign</td>
</tr>
</tbody>
</table>
Help For Brittle Bones

If you have been diagnosed with osteoporosis, or have suffered a bone fracture from minimal trauma, there are steps you can take to decrease the progression of the condition. In addition to getting regular physical activity that places a load on the skeleton and consuming adequate amounts of calcium and vitamin D through proper nutrition, your health care provider may prescribe calcium and vitamin D supplements along with FDA approved medications to slow bone loss.

There are special movement considerations you can take, such as avoiding forward bending and twisting, to minimize your risk of spinal fractures. Fall prevention techniques and hip protectors can be used to reduce your risk of hip fracture. Reviewing your medical conditions and prescription medications with your health care provider will help determine if they are contributing to an additional loss of bone, or an increased risk of falls.

The disfigurement that results from numerous osteoporosis-related fractures can cause pain, social isolation and depression, all affecting the quality of life. Some support groups are available in Maryland and others, including online support groups, can be formed with help from the National Osteoporosis Foundation.

stronerbones.org is maintained and funded by the Maryland Department of Health & Mental Hygiene
Last Modified 08/03/2004 02:12:14 PM

http://www.strongerbones.org/helpbones.html
Assess Bone Strength

There are a variety of ways to determine the development of osteoporosis. The simplest measure is to monitor height loss over time. Although you will lose some height from the compression of the discs in between your vertebrae as you get older, height loss of 1 1/2 inches or more is not a normal consequence of aging and may indicate osteoporosis.

Certain factors are associated with an increased risk of developing osteoporosis. There are some risk factors that you can modify:

- Physical inactivity
- Poor nutrition resulting in inadequate calcium and vitamin D intake
- Low levels of estrogen in women and testosterone in men
- Cigarette smoking
- Excessive alcohol intake
- Long term use of certain medications

and other risk factors that you cannot change:

- Advanced age (65+)
- Female gender
- Family history of osteoporosis
- Family history of fracture and personal history of fracture as an adult
- Ethnicity - Caucasians and Asians are at greatest risk (other ethnicities have a lower, but significant risk)
- Thin/Small Frame

The more risk factors you have, the more important it is for you to build bone mass and reduce bone loss to prevent the low trauma fractures that result from osteoporosis. Find out your risk by taking a quiz and checking on how many fitness risk factors you have for hip fractures. Learn about bone density testing, a painless test used to diagnose low bone mass and osteoporosis.
Bone is continuously being broken down and rebuilt throughout life. After the skeleton reaches maturity around age 30, bone loss begins to exceed bone formation at a rate of about 1% per year. Women experience a more rapid decline in bone mass (3-5% per year) during the first 5 - 7 years of menopause when the protective effect that estrogen had on their skeleton is lost.

To reduce bone loss, it is important to engage in regular physical activity that places a load on the skeleton and consume adequate amounts of calcium and vitamin D through proper nutrition. Health care providers often recommend calcium supplementation to reduce bone loss when dietary intake is low. By avoiding certain lifestyle behaviors such as cigarette smoking and excessive alcohol intake, accelerated bone loss can be avoided.

Medications used for some chronic conditions and certain medical conditions cause bone to be lost more rapidly than normal. There are FDA approved medications to reduce bone loss that are prescribed when physical activity, proper nutrition, calcium supplementation and lifestyle modifications are not enough to reduce the risk, or severity of low bone mass and osteoporosis.

http://www.strongerbones.org/reduceloss.html
Build Bone Mass

Bone is one of the body's most active tissues. During a process called remodeling, bone is continuously being broken down and rebuilt. As children grow into adulthood, the building of new bone outpaces the breakdown of old bone so that the skeleton becomes larger, heavier and denser.

Around age 30 bone loss begins to exceed bone formation. When not enough bone is formed during youth, or too much bone is removed, or a combination of both occurs a condition called osteoporosis results. Osteoporosis ("porous bones") develops without symptoms and causes bones to break more easily from very little trauma.

Bone mass attained early in life is a very important determinant of lifelong skeletal health. The bone formed during youth is like having a bone bank account that you will draw off of for the rest of your adult life. Optimal bone health requires:

- Regular physical activity that places a load on the skeleton
- Adequate calcium and vitamin D intake through proper nutrition
- Normal hormone levels that impact bone mass
- Healthy lifestyle behaviors - nonsmoking, little alcohol

http://www.strongerbones.org/buildbone.html
Take A Closer Look...

Do You Get Enough Bone Building Calcium?

Storing enough calcium in your bones NOW will make them stronger and help prevent the bone-thinning disease osteoporosis LATER. To store enough, you need to eat enough bone-building calcium, at least 4 servings every day.

Look at your food record on page 14. Compare the foods you ate to the list of High-Calcium and Medium-Calcium foods below.

Did you eat any High-Calcium foods? On your food record, circle the High-Calcium foods.

High Calcium Foods

<table>
<thead>
<tr>
<th>Milk &amp; Milk Products</th>
<th>Meat, Beans &amp; Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup milk, yogurt, pudding</td>
<td>sardines with bones (6)</td>
</tr>
<tr>
<td>1 ½ oz. cheese</td>
<td></td>
</tr>
</tbody>
</table>

- nonfat or lowfat milk
- lowfat chocolate milk
- nonfat or lowfat yogurt
- lowfat cheese or mozzarella (1 ½ cube)
- whole milk
- milkshake
- hot chocolate
- pudding
- custard or flan
- regular cheese (1 ½ cube)

How many servings of High-Calcium foods did you eat? _____

Medium-Calcium Foods

<table>
<thead>
<tr>
<th>Milk &amp; Milk Products</th>
<th>Meats, Beans &amp; Nuts</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Breads, Cereals &amp; Grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ cup</td>
<td></td>
<td></td>
<td></td>
<td>com tortillas (2)</td>
</tr>
</tbody>
</table>

- nonfat or lowfat cottage cheese
- cream soup

- dried beans or peas (1 cup)
- refried beans (1 cup)
- bok choy (1/2 cup)
- broccoli (1 cup)
- kale (1 cup)
- figs (5)

http://www.dairycouncilofca.org/edu/edu_prog.eye_bone5.htm

7/24/2005
| ice milk or frozen yogurt ice cream | canned fish, with bones (salmon, mackerel) (2 oz.) tofu processed with calcium (¼ cup) almonds (¼ cup) | mustard greens (1 cup) turnip greens (½ cup) |

How many servings of Medium-Calcium foods did you eat? ____

It takes 3 Medium-Calcium Foods to equal 1 High-Calcium food. You need to divide your total number of Medium-Calcium food servings by 3 (example: 3 servings of broccoli equals 1 serving of lowfat milk).

Once you have divided your total Medium-Calcium servings by 3, add this number to the number of High-Calcium servings to get your Total Calcium Servings.

Total = ________ Did you get a total of at least 4? ____ Yes ____ No

If no, try to eat AT LEAST 2 servings of High-Calcium foods everyday. Additional servings of Medium-Calcium foods will help you reach your goal.

Look at your options on pages 10-11. Do you need to include more options for bone-building calcium?

Think about some of the times and places where it will be easiest to include these foods.

Some examples might be:
- have lowfat milk instead of soda with lunch
- fix broccoli or greens for dinner
- add cheese to my bean burrito at lunch

Two things I can do to include more calcium:

________________________

________________________

Do You Get Enough Bone-Building Activity?

To build strong bones, you've got to do activities that put weight on your bones for at least 20 minutes a day. Remember, all activity that you do is important! You need a total of at least 60 minutes of moderate-hard activity every day, which should include at least 20 minutes of bone-building activity.
Bone-building activity moves your skeleton against gravity with force and impact. Bone-building activities are better for building bones than weight-supported activities like swimming or cycling.

True or False: The following activities are bone-building

1. Swimming True False
2. Sit-Ups True False
3. Rollerblading True False
4. Skateboarding True False
5. Ice Skating True False
6. Bicycling True False

Now that we know a little more about bone-building activity, take a closer look at your activity record on page 12.

Compare the activities you did to the list of bone-building activities below. On your activity record on page 12, circle the activities that are bone-building activities.

Bone-Building Activity

<table>
<thead>
<tr>
<th>Walking</th>
<th>Basketball</th>
<th>Others:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jogging</td>
<td>Volleyball</td>
<td></td>
</tr>
<tr>
<td>Aerobics</td>
<td>Field Hockey</td>
<td></td>
</tr>
<tr>
<td>Dancing</td>
<td>Football</td>
<td></td>
</tr>
<tr>
<td>Gymnastics</td>
<td>Soccer</td>
<td></td>
</tr>
<tr>
<td>Tennis</td>
<td>Racquetball</td>
<td></td>
</tr>
<tr>
<td>Push-Ups</td>
<td>Weight-lifting</td>
<td></td>
</tr>
</tbody>
</table>

Do you get at least 20 minutes of bone-building activity everyday?

___ Yes ___ No

If no, take a closer look at your plan on page 13.
If you need to include more options for bone-building activity, think about what you can do before, during and after school... and don't forget the weekends!

Two things I can do to include more bone-building activity:

__________________________________________________________________________

Return to Exercise Your Options for Stronger Bones

http://www.dairycouncilofca.org/edu/edu_prog_eyo_bone5.htm 7/24/2005
Ninth Grade - Twelfth Grade

Competencies:
1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

4. Analyze the influence of culture, media, technology and other factors on health. (C, CH, PH)

7. Demonstrate the ability to advocate personal, family, and community health. (C, CH, F, S, D)

<table>
<thead>
<tr>
<th>Integrated Instruction</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1c.</td>
<td>Teacher will prompt students with the written question: “What do individuals do in their quest for the perfect body?” Students will compare and contrast different types of eating disorders and the results of continuous unhealthy eating habits (weight gain, anorexia nervosa, bulimia, binge eating, yo-yo dieting, etc)</td>
<td>Journaling Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Science</td>
<td>3h.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>3i.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language Arts</td>
<td>4a.</td>
<td><a href="http://www.dairycouncilofca.org/edu_prog_body4.htm">www.dairycouncilofca.org/edu_prog_body4.htm</a> <a href="http://www.cdc.org">www.cdc.org</a> Students will research to determine the risk factors of eating disorders and the identifiable symptoms of the disorders.</td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td>7a.</td>
<td>Students will create a brochure, poster, or skit to educate others of eating disorders and the consequences of these diseases. Students will include a section notifying others of opportunities for help and treatment. Students will compose a research paper detailing different eating disorders, where how our culture promotes unhealthy eating habits through advertisement, media, etc.</td>
<td>Brochure, poster, or skit graded by rubric. See appendix.</td>
</tr>
</tbody>
</table>

53
Out of Order: When Food Becomes More Than Something to Eat

American society seems to be obsessed with appearance — and particularly with body shape and size. It's hard not to be with what we see everyday. TV programs feature good-looking, lean females and males. High-fashion models — tall, skinny, and beautiful — are plastered in every magazine we look at. Sports figures, who are often thought of as role models and stars, are often extremely muscular and well-proportioned. And then there are the advertisements, which tell us that we can have the "perfect" body if we just "use this, drink this, eat this, read this, buy this, send for this..."

This image of the "perfect" body ignores the fact that human beings come in a wide variety of sizes and shapes. It ignores the fact that gaining weight and changing body shape are normal and healthy for pre-teens and teens. Yet the images on television, in movies and in magazines can lead young people to believe that any body size or shape that is "less-than-ideal" is unacceptable.

This obsession with the ideal body sometimes motivates young people to take drastic steps; they overly restrict their calorie intake; they vomit or abuse laxatives; they exercise obsessively — all to the point where they damage their health. Many researchers believe that as a result of striving to attain society's ideals, some young people develop eating disorders.

Anorexia Nervosa

People with the eating disorder called anorexia nervosa severely limit their food intake. People with this eating disorder say they feel fat, even if they weigh much less than is normal or healthy. The picture of themselves they see in the mirror is often very different from what the rest of the world sees. Anorectics are obsessed with food, weight, and body image. They often count calories, and weigh themselves many times a day, and exercise excessively. They feel uncomfortable after eating even the smallest meals.

Anorectics are literally starving themselves — sometimes, to death. During periods of extreme weight loss, the body responds by slowing down certain body functions (e.g., body temperature falls, blood pressure drops). Changes occur in the skin, hair, and nails. Extreme losses of body fat make sitting or lying down uncomfortable, so resting and sleeping are difficult.

Bulimia

People with the eating disorder called bulimia alternate between eating larger amounts of food than is "normal" (e.g. an entire chocolate cake) then...
trying to get rid of the food by vomiting or using laxatives. Between these "binges" bulimics may eat normally.

Like anorexia nervosa, bulimia is also characterized by an obsession with weight and body image. Bulimics may not look excessively overweight or underweight but they are harming their bodies. Repeated vomiting damages the stomach and can erode the teeth. It can upset the body's chemical balance which can lead to fatigue or heart irregularities.

Causes and Cures

The reasons for these life-threatening eating disorders are not completely clear. It seems that many young people with these disorders think: "If I am thin, I will be happy, popular, and successful." Thus they may go on strict diets to help them feel in control of something in their lives.

We know that obesity, being extremely overweight, is not healthy; but neither is being too thin. And thinness and weight loss are not the solutions for other problems in life.

Most people find it difficult to stop their anorectic or bulimic behavior without professional help. Getting that help is important because if untreated, the disorders can lead to serious health problems and even to death. If you have a friend you think might have an eating disorder, encourage them to get help.


Each of us is unique yet there is a feeling in our society that a "perfect" body image" really does exist.

- Why do you think that occurs?
- How could the search for an "ideal body image" lead to an eating disorder?
Ninth Grade – Twelfth Grade

Competencies:

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (N, PH, DA, F, M, H, S, D)

7. Demonstrate the ability to advocate for personal, family, and community health. (C, CH, F, S, D)

<table>
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<tr>
<th>Integrated Instruction</th>
<th>Grade/Competency/Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Science Language Arts Computer</td>
<td>6a. 7a.</td>
<td>Teacher will present lesson on multivitamin/mineral supplements (attached). The lesson explains situations where supplements are needed, criteria for choosing a supplement, and cautions about supplements. Students will determine whether they need to consider taking a supplement by completing the “Do You Need A Multivitamin/Mineral Supplement?” quiz. (<a href="http://www.eatright.org/Public/NutritionInformation/92_11825.cfm">http://www.eatright.org/Public/NutritionInformation/92_11825.cfm</a>) Students will read the label on a bottle of multivitamin/mineral supplement and discuss the criteria for choosing a supplement. Students will test the absorbability of a multivitamin/mineral supplement. Students will write a short essay that discusses whether or not they need to take a supplement, cites the points of the lesson to support their assessment, and explains how to choose a supplement.</td>
<td>Teacher observation graded based on rubric. See attached. Teacher observation Teacher observation Essay graded on content, organization, grammar, and punctuation.</td>
</tr>
</tbody>
</table>
Multivitamin/Mineral Supplements

Objective:
At the end of this lesson, the student will be able to determine whether he or she needs to take a multivitamin/mineral supplement and to describe how to choose a supplement.

Tools:
Bottle of generic multivitamin/mineral supplement
Clear plastic cup
Household vinegar
Handout: Multivitamin/Mineral Supplement Facts
Handout: Do You Need a Multivitamin/Mineral Supplement?
(http://www.eatrigh.org/Public/NutritionInformation/92_11835.cfm)

Lesson:
The best way to get the vitamins and minerals you need each day is from the foods you eat. In addition to vitamins and minerals, foods provide energy and other substances that are beneficial to health. It is not possible to pack these beneficial substances from foods into supplements.

There are some cases, however, when taking a supplement will be a good idea. And, it won't hurt most people to take a multivitamin/mineral supplement that supplies 100 percent of the Recommended Dietary Allowances (RDAs).

Discuss the reasons supplements may be needed using the “Multivitamin/Mineral Supplement Facts” Handout:
- If you skip meals, are on a fad diet, or eat fewer than the minimum servings from each of the food groups recommended for you by MyPyramid, you might benefit from a multivitamin/mineral supplement.
- If you are a vegan, that is you eat absolutely no meat, dairy, or other animal products, you might benefit from vitamin B₁₂ and/or calcium supplements.
- If you avoid specific types of food because of food allergies, food intolerances, or dislikes, you might benefit from supplements of specific nutrients these foods provide.
If you are a woman who capable of becoming pregnant, you will benefit from a folate supplement. (In fact, it is a good idea for women who may become pregnant to take a multivitamin/mineral with 100% of the RDA for folate. This will protect against having a baby with neural tube defects.)

Continue using the handout. Also, use the multivitamin/mineral supplement, cup, & vinegar to explain and demonstrate the following:

- It is important to choose a supplement that is of good quality, but it is not necessary to buy an expensive brand.
- When choosing a multivitamin/mineral supplement read the label to make sure it supplies 50-150% of the Daily Values for each nutrient.
- Look for USP on the label. This is considered a seal of approval for supplements. USP (U.S. Pharmacopeia) is a nonprofit testing organization that tests vitamin and mineral supplements for strength, quality, purity, and dissolution. It has been operating since 1820.
- To test the absorbability of a supplement, place it in a container (cup) and cover it with household vinegar. Stir the solution every few minutes, if desired. The pill should disintegrate, and may completely dissolve, within one hour. If it does not disintegrate in the vinegar, it may not disintegrate in the stomach, meaning it will pass through undigested. (This test is only a rough approximation of what happens in the stomach.)

Continue using the handout to discuss cautions about supplements:

- Think about supplements as though they are medicine. It is important not to take too many supplements. It is easier to ingest toxic amounts of nutrients from supplements than it is from food, and taking too many high-dose supplements can cause the nutrients to interfere with one another.
- Taking supplements can give people a false sense of security. They may think that the supplements will cover their nutrient needs and that they do not have to make good food choices. In addition, they may think that supplements will cure their medical illnesses.
- You do not need to take supplements because the food supply is inadequate; the soil in which food is grown and the food supply provide adequate nutrients. Supplements will not provide energy, enhance athletic performance, build lean tissue, reduce stress, or prevent diseases.
Evaluation:
After the lesson, the students will complete the quiz “Do You Need a Multivitamin/ Mineral Supplement?” Students will write a short essay that (1) discusses whether or not they think they need to take a supplement, (2) cites their quiz results and lesson discussion to support their assessment, and (3) explains how to choose a supplement.

References:
American Dietetic Association - Do You Need a Multivitamin/Mineral Supplement?
http://www.eatright.org/Public/NutritionInformation/92_11835.cfm


This lesson was developed by Rebecca Kelly, PhD, RD, LD. Assistant Professor of Culinary Arts at Mississippi University for Women. July 26, 2005.

Who Are The People That Need Supplements?
- People who do not eat enough (< 1200 calories/day) need a multivitamin/mineral supplement
- People who eat all-plant diets (vegans) need vitamin B12 and calcium
- People with lactose intolerance, milk allergies, or not enough dairy need calcium
- People with known nutrient deficiencies need those specific nutrients
- Infants need iron & fluoride
- Women of capable of becoming pregnant need folate
- Women who bleed excessively during menstruation need iron
- Pregnant women need iron
- Elderly people need vitamin D

How To Choose Supplements
- First, improve the diet by making more nutritious food choices
- If nutrients needs cannot be met from the diet, take a
multivitamin/mineral supplement with 50-150% of the Daily Values for each nutrient
- Look for USP, which means US Pharmacopeia, on the label
- USP sets standards for quality, strength, and purity
- A supplement should completely disintegrate within 30-45 minutes
- Local or store brands may be just as good as nationally advertised brands.

Reasons People Need To Be Careful About Supplements
- Risk of toxicity
  - It is easier to get too much of a nutrient from supplements compared to nutrients in food
  - Flavored chewable supplements entice children to eat supplements like candy
- People may think a supplement will treat their illnesses instead of getting medical help
- People eat poor diets because they believe supplements will cover their nutrient needs
- Nutrients in pure concentrated forms are more likely to interfere with absorption of other nutrients compared to nutrients in foods

Claims About Supplements That Are Not True
- The food supply and soil in which food is grown do not contain enough nutrients
- Supplements can provide energy
- Supplements can enhance athletic performance or build lean tissue
- Supplements will help one to cope with stress
- Supplements can prevent, treat, or cure conditions ranging from the common cold to cancer
Ninth Grade-Twelfth Grade

Competencies:
1. Comprehend concepts related to health promotion and disease prevention. *(M, PH, D)*

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. *(CH, PH, F, D)*

4. Analyze the influence of culture, media, technology, and other factor on health. *(C, CH, P)*

7. Demonstrate the ability to advocate personal, family, and community health. *(C, CH, F, S, D)*

<table>
<thead>
<tr>
<th>Integrated Instruction</th>
<th>Grade/ Competency/ Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1c</td>
<td>Students will analyze the information indicated in the case study about folic acid from Texas.</td>
<td>Teacher observation. Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td></td>
<td>3b</td>
<td><a href="http://www.cdc.gov/nccdphp/folicacid/exci">http://www.cdc.gov/nccdphp/folicacid/exci</a> te/default.htm</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>4a</td>
<td>Students will identify the short and long term effects of consuming folic acid during pregnancy. Teacher will review how to conduct a debate. Teacher will divide students into two groups. One side will advocate consuming folic acid during pregnancy. The other team will attempt to refute the points presented.</td>
<td>Oral participation. Graded based on rubric.</td>
</tr>
<tr>
<td>Arts:</td>
<td>4b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading,</td>
<td>6d</td>
<td></td>
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<tr>
<td>Writing,</td>
<td>6f</td>
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<tr>
<td>Speaking,</td>
<td>7a</td>
<td></td>
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<tr>
<td>Listening</td>
<td>7b</td>
<td></td>
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<tr>
<td>Science: Life Science</td>
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</tbody>
</table>

**Enrichment:** Students will collaborate with computer or media arts teacher to create a video that emphasizes the importance of proper prenatal care to include the consumption of folic acid.

**Remediation:** Students will create an advocacy brochure discussing the potentially poor quality of life that children with birth defects stemming from inadequate prenatal care experience.
Ninth Grade - Twelfth Grade

Competencies:

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (PH, N, H, F, D)

7. Demonstrate the ability to advocate personal, family, and community health. (C, PH, F, H, S)

<table>
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</thead>
<tbody>
<tr>
<td>Health</td>
<td>5c.</td>
<td>Students will compare and contrast the effects that alcohol has on the body using a Venn diagram.</td>
<td>Teacher Observation: Graded based on rubric. See appendix.</td>
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<td></td>
<td>5d.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>6g.</td>
<td>Students will analyze multiple ways that peer pressure relates to driving while under the influence. Teacher will list responses on the board.</td>
<td></td>
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<tr>
<td></td>
<td>7a.</td>
<td>Teacher will display statistics of fatalities in automobile crashes involving at least one intoxicated driver or nonoccupant. See attachment. <a href="http://www.library.thinkquest.org/23713/problem/thievictiris.html">www.library.thinkquest.org/23713/problem/thievictiris.html</a></td>
<td></td>
</tr>
<tr>
<td>Science: Life</td>
<td></td>
<td>Students will complete a quiz on drinking and driving.</td>
<td>Drinking and Driving Quiz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remediation: Students will compile a written report addressing positive ways to handle peer pressure related to drugs and alcohol.</td>
<td>Written Report Graded based on Rubric. See appendix.</td>
</tr>
</tbody>
</table>
Underage drinking is a large part of the drunk driving dilemma. Teenagers' tendency to drink alcohol despite laws prohibiting sale of alcohol to minors, combined with their relative lack of experience at driving produces a dangerous combination. Drunk driving is the leading cause of death among teenagers.

Why do teenagers drink? There are many answers to this question, none of which are the "right" answer. One should remember that teenage life is one of the most stressful periods of life. There are changes going on around the teenager at every turn. They begin to hold more and more responsibilities. A lot is expected of them. All this stress, when taken into account with lack of experience, and often a lack of education, can lead to poor decisions.

Peer pressure. Everyone has heard this term. Many have heard it so often, they think it is just an overused buzzword. But you never really think much of the term until a drink is thrust into your hand at a party by your best friend. Sure, you think you can say no. Have you tried it? At a weekend drug retreat, the teenaged participants were asked to individually look into the eyes and say "no" to every other person in the group. It seemed silly, but many simply could not reject their peers. It was difficult for them to get the word out of their throat. Some even broke down crying before the end of the exercise. Peer pressure seems like a silly thing to many, but it should be taken with all seriousness. To find out how to use peer pressure in a positive way, see Chapter 4.

There are many other reasons that teens drink alcohol, though. For some, the sheer fact that drinking is illegal makes them do it. Some are influenced by role models through their parents, their friends, or movie and television characters. Some thinks it make them more attractive, popular, or funny. Some do it to relieve stress, anxiety, loneliness, rejection, depression, or any other of the strong emotions which often dominate teenage life.

And, some teenagers are actually addicted to alcohol. Alcohol addiction is not instantaneous, it takes time to build up the tolerance, and eventually, the dependance on the drug. However, that time is significantly less for teenagers and children than it is for adults. For teenagers, it can take as little as one to two years to become dependent on alcohol. Alcoholism takes the alcoholic's control away. The alcoholic can no longer control how much he or she drinks, or what he or she does while drinking. The alcoholism takes over the person.

Teen drinking is a serious problem, and it must be addressed. Many programs have been put into action to help stop this problem, and they are somewhat effective -- the number of alcohol-related fatalities has been declining... slowly.
Drunk driving affects more than just the people driving drunk. Tragically, it is often innocent pedestrians or sober drivers who die while the drunk driver lives on. The victims of drunk driving are the drivers, their passengers, pedestrians, and other drivers and motorists.

**Intoxicated Drivers:** just over half of the Americans killed in alcohol related crashes were the intoxicated drivers themselves, or sometimes other drunk drivers. Vision blurry, judgement seriously compromised, and attention dangerously low, these drivers are not competent to drive. They may do alright in a situation that is almost second-nature to them, such as driving in their own neighborhood, but an unexpected situation which involves the driver's judgement is often fatal. To learn about alcohol’s effects on driving, see Chapter 3.

**Nonintoxicated Drivers:** these innocent drivers were unable to evade the erratic, unpredictable driving of drunk drivers. For instance, a drunk driver may be driving on the wrong side of the road going around a turn or on the crest of a hill, where a sober driver on the right side of the road would not be able to get out of the way in time. To learn about how to identify and defend yourself against possible drunk drivers, see Chapter 4.

**Passengers:** about twenty percent of the Americans killed in crashes involving alcohol were the unfortunate passengers of drunk drivers. You should never get in a car with somebody who has been drinking. Sober passengers killed in crashes where the driver was intoxicated were in the wrong seat. Unfortunately, due to lack of foresight and knowledge, many people, sober or not, end up in the passenger seat. To learn more about keeping yourself out of these situations, see Chapter 4.

**Nonoccupants:** pedestrians, cyclists, and other nonoccupants, make up for another seventeen percent of the people killed in alcohol-related crashes. However, statistics show that if the nonoccupant is intoxicated, there is a much greater chance of injury.

<table>
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<tr>
<th>Types of Fatalities in Fatal Crashes Involving at Least One Intoxicated Driver or Nonoccupant, 1997.</th>
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</thead>
<tbody>
<tr>
<td>Type of Fatality</td>
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<tr>
<td>Intoxicated Drivers</td>
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<tr>
<td>Nonintoxicated Drivers</td>
</tr>
<tr>
<td>Passengers</td>
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<tr>
<td>Intoxicated Nonoccupants</td>
</tr>
<tr>
<td>Nonintoxicated Nonoccupants</td>
</tr>
<tr>
<td>Total Fatalities</td>
</tr>
</tbody>
</table>
This site deals with a certain perpetrator -- the driver who endangers his or her passengers, his or her self, and surrounding pedestrians by driving under the influence of alcohol or other drugs.

Drunk drivers are not just alcoholics who have nothing better to do than hang out at bars. They are all kinds of people with all kinds of jobs from all kinds of backgrounds and from all kinds of places.

However, there is one kind of person who tends to drink and drive more than any other. These people are males between the ages of 16 and 24. These people typically are frequent and heavy drinkers. Those still in school are academically average. They are often involved in sports and social activities.

That is not to say that only the above type of person is likely to get in a car drunk. In the following chapters, you will see just how easy it is for anyone to find themselves in a potentially dangerous drunk driving situation.
We now know that there is a problem with drunk driving. In order to find out what can be done to stop this problem, we must identify the cause of the problem. People are driving drunk. Why?

Alcohol-induced loss of judgement: After three or four drinks, a drinker's good judgement is undermined by alcohol. After drinking, it will often fail to cross the mind of the drinker that getting in a car while in his or her current condition could be fatal. Also, alcohol often has the consequence of boosting confidence. A controlled demonstration was done at the University of Kentucky by an organization known as BACCHUS, in which campus leaders drove a simple course on the parking lot laid out with cones to represent pedestrians. At half-hour intervals, the leaders drank another drink and drove the course again. In less than two hours, the leaders were boasting about their performance -- but several cones lay knocked down.

Lack of planning: Since alcohol can impair judgement, it is essential to plan in advance for any consumption. If you are going someplace to drink, you must consider how you are going to get back. If you don't make a plan in advance, you may not be sober enough when the party is over to make a safe decision on how to get home. This is the primary reason many people end up driving drunk. They hadn't planned on getting drunk, they failed to arrange a ride, they didn't plan on calling a taxi. The right thing to do is to always make sure that you know how you are going to get home if you plan on drinking, and if you don't plan on drinking, to actually refrain from drinking. With simple, proper planning, drunk driving is easily avoided.

Rationalization: "My home is only a few minutes away. What could happen?" This thought crosses the minds of drunk drivers all too often. Especially when judgement is compromised by alcohol, people will rationalize, until the idea of driving while drunk doesn't seem that bad after all. "I've driven home before drunk, I can do it again." If you have driven once while drunk, you should consider yourself lucky to be alive to remember it. Doing it twice is pushing that luck. This kind of thinking is either recklessness or stupidity. Once somebody has driven drunk once, it seems many get a false sense of security. This ties in closely with:

Overconfidence: "I drive better while drunk!" Also closely related to the effects on the brain by alcohol, overconfidence is created when one has already driven drunk and survived it. Many seem to think that their driving skills are enhanced by alcohol (see the BACCHUS demonstration described above).

Lack of education: A frightening number of people are unaware of the effects that drinking can have on driving skills. Because both drinking and driving separately are such normal parts of many people's lives, they do not think to draw a connection between the two. This seems painfully ignorant to us, but it happens. However, since education on drunk driving has increased in recent years, the focus on driving under the influence of alcohol has overshadowed the real issue, driving under the influence of drugs. While most know that driving drunk is risky, the issue has been overlooked that driving under the influence of any drug can be very risky. And this means any drug -- from decongestants to marijuana. Serious drug users tend to be even more intoxicated than drunk people, so one must not overlook the risks of driving under the influence of drugs. But the most overlooked of all is over the counter drugs (OTCs). To see just how dangerous these can be, go to chapter 2.
Pressure: What teenager would not have second thoughts about calling home to say that he or she has been drinking alcohol -- illegally -- and now needs a ride home? Who wants to put their friends through the inconvenience of letting them stay the night because they got too drunk? The decisions to do these things are difficult, but they can mean the difference between life or death. Any parent would rather pick up their child drunk at a party than dead at a morgue. Any host would gladly see a guest off sober in the morning than drunk and dangerous at night.

All these reasons are closely related, and they all make it easy to find yourself driving drunk. But with just a little planning, and knowledge of the situation, you could save your life, or somebody else's.
Drunk and drugged driving affects

- a. Alcoholics
- b. Teenagers
- c. Everybody

2. Even if you are not driving drunk, you can be involved in an alcohol-related accident.

- True
- False

3. Why is driving under the influence of alcohol and other drugs such a large problem?

- Lack of education
- Both drinking and driving are almost second-nature to some
- A and B

4. About how many American lives are lost annually to drunk driving?

- 1,700
- 17,000
- 170,000

5. About how many Americans are injured every year by drunk driving?

- 3,000
- 30,000
- 300,000

6. The person most often killed in an alcohol-related crash is the

- Drunk driver
- Passenger
- Sober driver
7. Which age group is most likely to drive drunk?

- a. teens, 16-20
- b. young adults, 21-34
- c. adults, 35+

8. For all people ages 5 through 27, what is the leading cause of death?

- a. alcohol-related crashes
- b. gun-related violence
- c. car accidents

9. The alcohol involvement in crashes increases during the night.

- True
- False

10. Peer pressure plays a key role in a teenager’s decision to drink alcohol or use drugs.

- True
- False
Alcohol and Public Health

Alcohol Statistics

Alcohol-Attributable Deaths and Years of Potential Life Lost due to Alcohol

- Alcohol-Related Disease Impact Software (ARDI)

Alcohol Fact Sheet

- General Alcohol Information

National Surveys that Collect Information about Alcohol Consumption

- CDC-Sponsored Surveys
  - Behavioral Risk Factor Surveillance System
    http://www.cdc.gov/brfss/
  - Youth Risk Behavior Survey
    http://www.cdc.gov/HealthyYouth/yrbs/
  - Pregnancy Risk Assessment Monitoring System
    http://www.cdc.gov/reproductivehealth/srv_prams.htm
  - National Health Interview Survey
    http://www.cdc.gov/nchs/nhis.htm

- Other National Surveys
  - National Survey on Drug Use and Health (formerly the National Household Survey on Drug Abuse)
    http://www.oas.samhsa.gov/nhsda.htm
  - National Longitudinal Epidemiologic Survey on Alcohol, etc (NLESA Web Site)
    http://www.pop.psu.edu/data-archive/daman/nlaes.htm*
  - Monitoring the Future Survey
    http://www.monitoringthefuture.org/*
  - National Alcohol Survey
    http://www.arg.org/studies.html*

Links to Alcohol-Related Public Health Objectives and Indicators

- Healthy People 2010 Objective
- Chronic Disease Indicators
  http://edl.hmc.psu.edu/

* Links to non-Federal organizations are provided solely as a service to our users. Links do not constitute an endorsement of any organization by CDC or the Federal Government, and none should be inferred. The CDC is not responsible for the content of the individual organization Web pages found at this link.

http://www.cdc.gov/alcohol/statistics.htm
General Alcohol Information

One or more documents on this Web page is available in Portable Document Format (PDF). You will need Acrobat Reader (a free application) to view and print these documents.

Measures of Alcohol Consumption and Alcohol-Related Health Effects from Excessive Consumption

Current Drinking

- Current drinkers are those who consume alcohol-containing beverages.
- In 2002, 54.9% of U.S. adults (18 years and older) reported drinking at least one drink in the past month. The prevalence of past-month alcohol consumption was higher for men (62.4%) than for women (47.9%) (SAMSHA, NSDUH, 2002).

Binge Drinking

- Binge drinking is generally defined as having 5 or more drinks on one occasion, meaning in a row or within a short period of time (Naimi, 2003). However, among women, binge drinking is often defined as having 4 or more drinks on one occasion (NIAAA, 2004) (Wechsler, 1998). This lower cut-point is used for women because women are generally of smaller stature than men, and absorb and metabolize alcohol differently than men.
- About 1 in 3 adult drinkers in the United States report past-month binge drinking, and this ratio has changed very little since the mid-1980s (Serdula, 2004).
- In 2001, there were approximately 1.5 billion episodes of binge drinking in the U.S. Binge drinking rates were highest among those aged 18 to 25 years; however, 70% of binge drinking episodes occurred among those aged 26 years and older (Naimi, 2003).
- Binge drinkers were 14 times more likely to report alcohol-impaired driving than non-binge drinkers (Naimi, 2003).
• Binge drinking is associated with a number of adverse health effects, including unintentional injuries (e.g., motor vehicle crashes, falls, burns, drownings, and hypothermia); violence (homicide, suicide, child abuse, domestic violence); sudden infant death syndrome; alcohol poisoning; hypertension; myocardial infarction; gastritis; pancreatitis; sexually transmitted diseases; meningitis; and poor control of diabetes (Naimi, 2003).

Heavy Drinking

• Heavy drinking is consuming alcohol in excess of 1 drink per day on average for women and greater than 2 drinks per day on average for men (NIAAA, 2004).

• In 2002, 5.9% of U.S. adults reported heavy drinking in the past 30 days; the prevalence of heavy drinking was greater for men (7.1%) than for women (4.5%) (CDC, BRFSS, 2002).

• Heavy drinking is associated with a number of chronic health conditions, including chronic liver disease and cirrhosis, gastrointestinal cancers, heart disease, stroke, pancreatitis, depression, and a variety of social problems (Naimi, 2003).

Alcohol Dependence

A person is defined as being dependent on alcohol if he or she reports three or more of the following symptoms in the past year (DSM-IV, 1994).

• Tolerance (e.g., needing more alcohol to become intoxicated).
• Withdrawal
• Alcohol use for longer periods than intended.
• Desire and/or unsuccessful efforts to cut down or control alcohol use.
• Considerable time spent obtaining or using alcohol, or recovering from its effects.
• Important social, work, or recreational activities given up because of use.
• Continued use of alcohol despite knowledge of problems caused by or aggravated by use.

In 2002, 3.7% of past-year drinkers were alcohol-dependent (SAMSHA, NSDUH, 2002).

Underage Drinking

• As of 1998, all states prohibit the purchase of alcohol by youth under the age of 21 years. Consequently, underage drinking is defined as consuming alcohol prior to the minimum legal drinking age of 21 years.
- In 2003, 44.9% of 9th through 12th graders reported drinking alcohol on one or more of the past 30 days; prevalence of current drinking was higher for females (45.8%) than among males (43.8%) (CDC, YRBS, 2003).

- In 2003, 28.3% of 9th through 12th graders reported binge drinking (having five or more drinks of alcohol in a row or within a couple of hours) at least once during the past 30 days. The prevalence of binge drinking was higher for males (29%) than among females (27.5%) (CDC, YRBS, 2003).

- Alcohol use is a leading risk factor in the three leading causes of death among youth: unintentional injuries (including motor vehicle crashes and drownings); suicides; and homicides. Other adverse consequences of underage drinking include risky sexual behavior and poor school performance (CDC, YRBS, 2001).

- Zero tolerance laws, which make it illegal for youth under age 21 years to drive with any measurable amount of alcohol in their system (i.e., with a blood alcohol concentration (BAC) ≥0.02 g/dL), have reduced traffic fatalities among 18 to 20 year olds by 13% and saved an estimated 21,887 lives from 1975 through 2002 (NHTSA, 1997).

Alcohol Use and Women's Health

- For women of childbearing age, the consequences of excessive alcohol consumption, particularly binge drinking, includes unintentional injuries, domestic violence, risky sexual behavior and sexually transmitted diseases, unintended pregnancy, and alcohol-exposed pregnancies.

- In 2001, 11.8% of women aged 18 to 44 years reported consuming alcohol within the past month, and 11% reported binge drinking (5 or more drinks on any one occasion) (Naimi, 2003).

- Women with unintended pregnancies were 60% more likely to binge drink during the three months before conception than women with intended pregnancies (Naimi, 2003).

Alcohol-Impaired Driving

- In 2002, 2.2% of U.S. adults reported alcohol-impaired driving in the past 30 days (CDC, BRFSS, 2003).

- In 1993, there were approximately 123 million episodes of alcohol-impaired driving in the United States. (Liu, 1997).

- In 2001, there were approximately 1.4 million arrests for driving under the influence of alcohol or narcotics. This is
an arrest rate of 1 of every 137 licensed drivers in the United States. (NHTSA, 2003).

Alcohol-Related Health Effects from Excessive Alcohol Consumption

Total Deaths due to Alcohol

- In 2000, there were approximately 85,000 deaths attributable to either excessive or risky drinking in the U.S., making alcohol the third leading actual cause of death (Mokdad, 2004).

- Alcohol-related deaths in the United States vary considerably by state, and are directly related to the amount of alcohol consumed and the pattern of alcohol use.

Alcohol Motor Vehicle Crash Deaths

- In 2002, 17,419 people in the United States died in alcohol-related motor vehicle crashes, accounting for 41% of all traffic-related deaths (NHTSA, 2003).

- In 1995, 36% of all crash fatalities among youth aged 15 to 20 years were alcohol-related (Samber, 1997; NHTSA, 1997).

- From 1997 through 2002, 2,355 children died in alcohol-related motor vehicle crashes; 1,588 (68%) of these children were riding with a drinking driver (CDC, MMWR, 2004).

Alcohol and Unintentional Injuries

- Alcohol-related unintentional injuries and deaths include motor vehicle crashes, drownings, falls, hypothermia, burns, suicides, and homicides.

- Approximately 31.1% of those who die from unintentional, non-traffic injuries in the United States have a blood alcohol concentration of 0.10 g/dL or greater (Smith, 1999).

- Patients treated in an emergency department (ED) for an unintentional injury are 13.5 times more likely to have consumed 5 or more alcohol-containing beverages within 6 hours of their injury compared to age and sex matched community controls (Vinson, 2003).

Alcohol and Violence
• In 1997, about 40% of all crimes (violent and non-violent) were committed under the influence of alcohol (Bureau of Justice Statistics, 1998).

• In 1997, 40% of convicted rape and sexual assault offenders said that they were drinking at the time of their crime (Greenfield, 2000).

• Approximately 72% of rapes reported on college campuses occur when victims are so intoxicated they are unable to consent or refuse (Wecshler, 2004).

• Two-thirds of victims of intimate partner violence reported that alcohol was involved in the incident (Bureau of Justice Statistics, 1998).

• Nearly one-half of the cases of child abuse and neglect are associated with parental alcohol or drug abuse (Grant, 2000).

• Approximately 23% of suicide deaths are attributable to alcohol (Smith, 1999).

Alcohol and Pregnancy

• Adverse health effects that are associated with alcohol-exposed pregnancies include miscarriage, premature delivery, low birth weight, sudden infant death syndrome, and prenatal alcohol-related conditions (e.g., fetal alcohol syndrome and alcohol-related neurodevelopmental disorders).

• In 1999, 12.8% of women aged 18 to 44 years reported any alcohol use (at least one drink) during pregnancy, and 2.7% reported binge drinking (5 or more drinks on any one occasion) (MMWR, 2002).

• Alcohol-related neurodevelopmental disorder and alcohol-related birth defects are believed to occur approximately three times as often as Fetal Alcohol Syndrome (FAS) (CDC, NCBDD/FAS, 2004).

• Fetal Alcohol Syndrome is one of the leading causes of mental retardation, and is directly attributable to drinking during pregnancy. FAS is characterized by growth retardation, facial abnormalities, and central nervous system dysfunction (i.e., learning disabilities and lower IQ), as well as behavioral problems.

• The incidence of FAS in the United States ranges from 0.2 to 1.5 per 1,000 live births http://www.cdc.gov/ncbdd/fas (CDC, NCBDD/FAS, 2004).

• Any maternal alcohol use in the periconceptional period (i.e., during the three months before pregnancy or during
the first trimester) is associated with a six-fold increased risk of SIDS (Iyasu, 2002).

- Binge drinking (five or more drinks at a time) during a mother's first trimester of pregnancy is associated with an eight-fold increase in the odds that the infant will die of SIDS (Iyasu, 2002).

Alcohol and Sexually Transmitted Disease

- Alcohol use by young adults is associated with earlier initiation of sexual activity, unprotected sexual intercourse, multiple partners and an increased risk for sexually transmitted diseases.

- Among teens aged 14 to 18, 20% of those who reported drinking before age 14 also reported being sexually active compared to 7% of those who did not report drinking before this age (The National Center on Addiction and Substance Abuse, 1999).

- In 1998, an estimated 400,000 college students between the ages of 18 and 24 had unprotected sex after drinking, and an estimated 100,000 had sex when they were so intoxicated they were unable to consent (Hingson, 2002).

- Among adults aged 18 to 30, binge drinkers were twice as likely as those who did not binge drink to have had two or more sex partners (Leigh, 1994).

- People who abuse alcohol are more likely to engage in risky behaviors, such as having unprotected sex, having more sex partners, and using intravenous drugs. In a single act of unprotected sex with an infected partner, a teenage woman has a 1% risk of acquiring HIV, a 30% risk of getting genital herpes, and a 50% chance of contracting gonorrhea (Alan Guttmacher Institute, 1994).

Hepatitis C and Chronic Liver Disease

- Alcohol consumption can exacerbate the HCV infection and accelerate disease progression to cirrhosis. Alcohol may also exacerbate the side effects of antiviral treatment for HCV infection, impairing the body’s response to the virus (Larrea, 1998).

- In 2003, there were 12,207 deaths from alcohol-related chronic liver disease (CLD). Approximately 75% of those deaths occurred among men (CDC, NCHS, 2003).

- Approximately 40% of the deaths from unspecified liver disease in the United States are attributable to heavy alcohol consumption (Parrish, 1993).

Alcohol and Cancer
Alcohol-related cancers include oral-pharyngeal, esophagus (squamous cell type), prostate, liver, and breast. In general, the risk of cancer increases with increasing amounts of alcohol.

- Excessive drinkers are 3 times more likely to develop liver cancer than non-drinkers (English & Holman, 1995).

- Excessive drinkers are 4 times more likely to develop esophageal cancer than non-drinkers (English & Holman, 1995).

- Oral cancers are six times more common in heavy alcohol users than in non-alcohol users (American Cancer Society, 2002).

- Compared to non-drinkers, women who consume an average of 1 alcoholic drink per day increase their risk of breast cancer by approximately 7%. Women who consume an average of 2 to 5 drinks per day increase their risk of developing breast cancer by approximately 50% compared to that of non-drinkers (American Cancer Society, 2002).

Effective Prevention Strategies for Alcohol-Related Health Problems

Alcohol Taxes

- A 10% increase on the tax for alcohol containing beverages could reduce the number of binge drinking episodes per month by 8% (Sloan, 1995).

- For every 1% increase in the price of beer, the traffic fatality rate declines by 0.9% (Ruhm, 1996).

- A 25% increase in the 1992 federal beer tax would have reduced work-loss days from non-fatal workplace accidents by 4.6 million and lost productivity by $491 million (Oshfeldt, 1997).

- Raising state beer tax from 10¢ per case to $1 per case would increase the probability of graduating from college by 6.3% (Cook, 1993).

Minimum Legal Drinking Age Laws

- All states and the District of Columbia have enforced 21-year-old minimum drinking age laws. In 2002, an estimated 917 lives saved in traffic crashes as a result of the age 21 minimum drinking age laws (NHTSA, 2002).

- Increasing the minimum drinking age from 18 to 21 has reduced both drinking and traffic crashes among youth by
10 to 15% (O'Malley & Wagenaar, 1991).

**Comprehensive Community Programs**

- Comprehensive community-based programs have reduced past month alcohol consumption among underage youth by 7% (Wagenaar, 2000).

**Intervention Training Programs for Servers**

- Server training programs have reduced alcohol sales by 11.5% and sales to pseudo-intoxicated buyers by 45% (Toomey, 2001).
- Server training programs have reduced single vehicle nighttime injury crashes by 23% (Holder, 1994).

**Screening and Brief Intervention**

- Brief physician advice to reduce alcohol consumption has reduced the number of binge drinking episodes in the past 30 days more than 40% (Fleming, 1997).

**References**


7. Centers for Disease Control and Prevention (CDC). Behavioral Risk Fact
Ninth Grade - Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (PH, N, H, F, D)

7. Demonstrate the ability to advocate personal, family, and community health. (C, PH, F, H, S)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>P.E. Health</td>
<td>6 3b. 6a. 7 1f. 3a. 3b.</td>
<td>Teacher will discuss the consequences of using tobacco, alcohol, and other drugs. Upon completion of thorough discussion, students will participate in step aerobics activity found at: <a href="http://dave.esc4.net/lessons/search/detail.aspx?pageIndex=4&amp;lessonID=438">http://dave.esc4.net/lessons/search/detail.aspx?pageIndex=4&amp;lessonID=438</a> Once completed, students will participate in “The Brain and Addiction” quiz.</td>
<td>Teacher Observation Graded by rubric. See appendix.</td>
</tr>
<tr>
<td>Music Health Language Arts</td>
<td>6 3b. 7c. 7 1f. 3a. 3b.</td>
<td>Students will create an anti-drug song or poem that will strengthen their commitment to be drug free. Students will perform their skit for parents and other classmates.</td>
<td>Song/Poem</td>
</tr>
</tbody>
</table>

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Creating Anti-Drug Poetry or Songs

Standards & Subjects
- Language Arts
- Music
- Health

Learning Objectives
- Positive Consequences
- Negative Consequences
- Resistance Skills
- Normative Education

Service Learning Opportunity
Present Anti-drug Songs/Poems to Others

Activity Overview
The purpose of this activity is to enhance students' commitments to remain drug-free. By creating anti-drug poetry or songs, students will strengthen their drug-free commitment and communicate an anti-drug message to others.

Teacher Resources
- Facts About Inhalants
- Inhalant Tips for Teachers
- Facts About Marijuana
- "Anti-drug Approaches" Transparency
- Anti-drug Ads for Teens

Student Resources
- Lowdown About Marijuana
- Lowdown About Inhalants
- Examples of Anti-drug Poems

Grade Level: Middle School, ages 11-14
Time Required to Complete Activities: 45-90 minutes, 1-2 class periods

Note: This activity is not part of an anti-drug education curriculum. It is a stand-alone activity that teachers can follow as written or tailor to best meet their needs.

http://www.theantidrug.com/teachersguide/activities antidrugpoetry.asp
Teacher Directions

1. Introduce the activity by discussing with students that as teenagers, they may encounter situations where they feel pressured to do things that may be harmful to them, such as smoke marijuana, huff inhalants, or use other drugs. Most youth their age do not use drugs. The purpose of this activity is to enable each student to express his or her decision to live drug-free by writing a poem or song with an anti-drug message.
   - In Music class: Have students focus only on creating an anti-drug song, and work in small groups.
   - In Language Arts class: Have students focus only on creating anti-drug poetry, and work individually.
   - In Health class: Students decide to create either an anti-drug song or poem.

2. Briefly review the dangers of inhalant and marijuana use by asking students what they already know about the harmful effects. Use the teacher fact sheets, Facts About Inhalants, Inhalant Tips for Teachers, and Facts About Marijuana to clarify any misconceptions or questions students may have. Note: Focus on short-term health and behavioral consequences and social consequences, which are more meaningful to teens than long-term consequences. Examples include: getting thrown off the team or losing the respect of friends.

3. Divide students into small groups of three to four students each. (Students creating poetry should work individually.) Explain to students that they will be creating an anti-drug song/poem for either inhalants or marijuana.

4. Songs/poems will need to include information from at least one of four different approaches. Display the "Anti-Drug Approaches" Transparency and discuss each approach with students. Have students brainstorm examples of each approach. Examples for each approach may include:
   a. Negative Consequences-Drugs can mess up your life in ways you never imagined. They can make you lose control and harm your relationships with family and friends. They can cause damage to your physical health.
   b. Positive Consequences-Not using drugs gives you the power to shape your identity, reach goals, and earn the respect of peers and family.
   c. Resistance Skills-Refusing to do drugs doesn't make you foolish or "uncool."
   d. Normative Message-Being drug free is cool. Most of the people you admire don't do drugs.

BEGIN CLASS TWO (or continue if you have time).

5. Explain criteria and guidelines to students (to be determined by the teacher). Some suggestions follow.
- SONGS: Have students select a music genre and write a song (or lyrics for an existing tune) that is appropriate for that style. For example, allow students to select from pop, country, or rap music.
- POETRY: Assign or have students choose what type of poem to write. Some choices are:
  - Acrostic—a series of written lines in which the first or last letters form a word or phrase
  - Cinquain—the structure may follow a 2, 4, 6, 8, 2 syllable pattern or may follow a simpler form using words per line in a 1, 2, 3, 4, 1 pattern.
  - Concrete—the poem forms a shape or, more specifically, the shape of what you are writing about.
  - Haiku—a Japanese poem written with 3 lines of 5, 7, and 5 syllables each.
  - Free Verse—phrases and verses of poetry that do not necessarily rhyme.
  - Limerick—a type of humorous verse of 5 lines in which the 1st, 2nd, and 5th lines rhyme with each other and the 3rd and 4th lines (which are shorter) also rhyme with each other.
  - Tanke—this poem is similar to Haiku but with a structure that follows a 5, 7, 5, 7 syllable pattern.
  - Rhyming—a poem that rhymes (lines 1 and 2, 3 and 4, etc. or every other line).
  - Senses—each of the five senses (i.e., taste, sight, hearing, smell, and touch) is used in relation to the subject matter.

6. Allow time for students to write their anti-drug song/poem. Monitor student progress and offer assistance as necessary. If students need to research background information, student resources are available on www.freervbe.com, including the student drug fact sheets, Lowdown About Marijuana and Lowdown About Inhalants. Show students two examples of Anti-drug Poems and talk about the approaches and style that are used in each.

7. Have groups/students present their completed anti-drug songs/poems to the rest of the class. Debrief after each presentation to discuss the style (of the song/poem) and anti-drug approach(es) used, and any comments or suggestions observers may have. For fun, have students vote on their favorite two presentations.

8. Display poems around the school and/or have students present their songs to other classes.

9. Summarize by asking each student to share one thing he/she remembers from the presentations about inhalants or marijuana.

Service Learning Opportunity
Present Anti-drug Songs/Poems to Others

For a service learning activity, have students present their anti-drug songs/poems to others. Students could go to other classes, broadcast them over the speaker during daily announcements, or present them during parent programs held in the evenings to even further communicate an anti-drug message.

Extension/Adaptation Ideas

- Students could design a group name or CD jacket for their work.
- Art could teach calligraphy to enhance students' poetry.
- Have students conduct a Poetry Slam.
Lesson Plan Detail

"SMOKING AEROBICS"

LESSON OVERVIEW
This lesson will show how smoking tobacco affects a person's everyday physical activity.

OBJECTIVE
A. Learn Essential Information
1. Analyze the effects of tobacco, alcohol and other drugs on an individual, including:
   a. physiological effects
2. Describe the potential consequences of using tobacco, alcohol and other drugs, including:
   a. health consequences
d. social consequences

ACTIVITIES-STRATEGIES
I. Step Aerobics: Do a ten minute step aerobic routine with the students. Any routine will do, as long as it is rigorous and gets their heart rate up.
II. Show the students how to check their heart rate by feeling pulse points and counting. Ask them to record on their worksheet what their heart rate is.
III. Have the students fill out the first two questions on the worksheet, which are provided next.
IV. Discuss their answers.
V. Each student needs a straw and a step. They will do the same exact aerobic routine from the beginning of class. The difference is they will be using straws to breath in and out. The straws represent how a smoker feels when doing physical activity.
VI. Have the students check their heart rate again to see if there is a difference compared to the first time.
VII. Finish worksheets by answering question three and four which are provided next.

Write two feeling words about the way you felt doing the exercises while breathing through a straw.

How can smoking affect your two favorite physical activities you wrote down in question two?

VII. Discuss the various answers from the class.
Quiz: The Brain and Addiction

These materials are produced by the National Institute on Drug Abuse, National Institutes of Health. They are in the public domain and may be reproduced without permission. Citation of the source is appreciated.

Instructions: After reviewing Facts on Drugs: The Brain and Addiction on the NIDA for Teens website (http://teens.drugabuse.gov/), take this short quiz to test your knowledge.

1. The human brain weighs about as much as a ________.
   a) donut
   b) twelve-pack of Coke®
   c) Chihuahua (the Taco Bell® dog)

2. Neurons in the brain communicate with each other by ________.
   a) passing axons
   b) releasing chemicals
   c) instant messaging

3. When you do something you enjoy, like watch a good movie, your ________ system "rewards" you.
   a) limbic
   b) digestive
   c) nervous

4. When someone uses drugs repeatedly, their brain is ________.
   a) trained to crave the drug
   b) smaller than before
   c) not changed
5. After a prolonged period of drug abuse, the brain___________.
   a) needs less drug to get the same effect
   b) needs more drug to get the same effect
   c) experiences increasing amounts of dopamine

6. The brain’s limbic system is also known as the _________.
   a) thinking center
   b) reward system
   c) comfort system

7. Brain cells or neurons turn electrical impulses into _________.
   a) chemical signals
   b) movement
   c) axons

8. Drugs work in the brain because they have similar _________.
   a) electrical charges as brain cells
   b) size and shape as natural brain chemicals
   c) nerve cells as the brain

9. Drugs of abuse create intense feelings because they _________.
   a) depress the nervous system
   b) shut off receptors in the occipital lobe
   c) cause a flood of dopamine in the limbic system

10. Drug abusers develop “tolerance” for drugs, meaning they need _________.
    a) more drug to get the same effect
    b) less drug to get the same effect
    c) different drugs to get the same effect
Answer Key: The Brain and Addiction Quiz

1. C: The human brain weighs about three pounds, about the size of a Chihuahua. A donut only weighs a few ounces and a twelve-pack of Coke® weighs nine pounds.

2. B: The transfer of a message from one neuron to another occurs by releasing chemicals called neurotransmitters into the spaces called synapses between the neurons. The axon is the long threadlike fiber that transmits the message.

3. A: The “reward” system of the brain is called the limbic system. It rewards you by releasing a brain chemical called dopamine, which produces feelings of pleasure.

4. A: The brain is wired to remember feelings of pleasure, including those produced by drugs unnaturally. The brain then strives to repeat those feelings, which the drug user feels/experiences as a craving for the drug.

5. B: At first, drug use may cause floods of dopamine. But prolonged drug abuse causes the brain's dopamine levels to decrease. That means the brain will need more of the drug just to get the dopamine levels back to normal and even more to produce the high that it craves.

6. B: Scientists call the limbic system the reward system because it regulates feelings of pleasure. This region is activated by pleasurable activities such as hanging out with friends. The limbic system is also activated by drugs of abuse.

7. A: A message travels down a neuron as an electrical impulse. To pass the message to another neuron, the electrical impulse triggers the
chemical signals called neurotransmitters, which flow into the synapse (the gap between the two neurons) and trigger an electrical impulse in the next neuron. Axons are the branches of a neuron that release the neurotransmitter.

8. B: Drugs “fool” the brain because they are similar in size and shape as the natural brain chemicals called neurotransmitters.

9. C: Drugs of abuse cause dopamine, the neurotransmitter that produces feelings of pleasure, to be released by the brain’s limbic system.

10. A: Drug tolerance makes people need more and more of the same drug to get the same effect because over time, drugs will cause the brain to produce less dopamine, the neurotransmitter that produces feelings of pleasure. Drug abusers need more of the drug than before to reach the same level of dopamine in order to get the same “high.”
Ninth Grade - Twelfth Grade

Competencies:

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health. (N, PH, DA, F, M, H, S, D)

7. Demonstrate the ability to advocate for personal, family and community health. (C, CH, F, S, D)

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<tbody>
<tr>
<td>Health</td>
<td>5a.</td>
<td>Students will discuss decision making and the importance of making good choices.</td>
<td>Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td></td>
<td>5b.</td>
<td></td>
<td>Easy-Difficult Worksheet</td>
</tr>
<tr>
<td>Language</td>
<td>5c.</td>
<td></td>
<td>Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Arts:</td>
<td>5d.</td>
<td></td>
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<tr>
<td>Listening, Speaking, Writing</td>
<td>6e.</td>
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<td></td>
<td>6f.</td>
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<td></td>
<td>7a.</td>
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Enrichment/Acceleration:
Students will complete Decision Scenarios to reinforce their understanding of making good decisions. See attachment.

Remediation: Students will create a self-selected product depicting the “Six Steps in Making the Best Decisions.”
Day 3: Decision Making

Materials needed:
- Flip chart or white board
- Paper
- Markers
- Copies of Easy-Difficult, pg. 21
- Copies of Decision-Making Scenarios, pg. 23
- Copies of 6 Steps for Decisions, pg. 22

Directions

Part 1: Who Influences Your Decisions?

- Distribute copies of the Easy-Difficult worksheet.
- Have students talk about some decisions they have made that day or week (i.e. what to wear to school, to study or talk on the phone the night before a test, a friend wants to copy your homework, tell your parent(s)/guardian(s) the truth).
- Have them categorize the decisions under easy or difficult.
- Ask if they had help or assistance while making any of their decisions and write down their responses (i.e. family, friends, church, TV, teacher, counselor).
- Say: This reflects your personal value system and shows who influences your life and decisions.

Source: Anspaugh, David J., Teaching Today's Health, p 343.

Part 2: Making a Decision

- Say: Making decisions is a part of every day life; we can have success in relationships, academic work, career choices and sports if we make the right decision.
- Distribute copies of the “Six Steps” worksheet.
- Read the following decision-making steps and have the student write them down on the “Six Steps” worksheet:
  1. Decide what the situation is that requires a decision.
  2. Decide what alternative decisions could be made.
  3. Decide if this is a “want” or a “need” situation and think about if you “want” or “need” to make this decision now, or if it could be made later.
  4. Gather accurate information about each decision to be made.
  5. Decide what the long-term and short-term effects (consequences) of each decision are.
  6. Make the best decision based on the information gathered.
- Divide the students into groups of three or four. Give each group a scenario listed on the scenario worksheet. Feel free to make up your own scenarios, if you choose.
- While the groups are working through the steps, walk around and assist the groups, if needed.
- Reinforce to the students that these skills are necessary to make healthy decisions in life.

Decisions, Decisions

<table>
<thead>
<tr>
<th>EASY</th>
<th>DIFFICULT</th>
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</table>
6 Steps to Making Good Decisions

1.

2.

3.

4.

5.

6.
Decision Scenarios

1. You have a decision to make: Whether to go out with friends the night before you have to be at work early the next morning or stay at home and get rest.

2. You have a decision to make: Save money for college by putting all your extra money in a savings account or buy video games, shoes, clothes, etc.

3. You have a decision to make: Choose between a good paying job doing hard labor or work at a cool place where everybody hangs out, that pays half of what the other pays.

4. You have a decision to make: Sneaking out to a party where other kids are going to be (possibly cute college boys or older girls). You cannot tell your parents, so you have to make up a story. Or you could tell your parents the truth about where you’re going and who’s going to be there….and prepare for the lecture.

5. You have a decision to make: Hanging out at a friend’s house where parents will not be home for a few days. You know they will have alcohol and maybe marijuana there. Do you go or do you find something else to do?
## Ninth Grade - Twelfth Grade

### Competencies:

2. Demonstrate the ability to obtain valid health information. (CH, PH, C)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (S, D, PH, N,M, DA)

4. Analyze the influence of culture, media, technology and other factors on health. (C, CH, PH)

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<td>Health</td>
<td>2b.</td>
<td>Students will compile a list of healthcare professions. Teacher will write students responses on the board. Students will discuss the possibilities of these professions being career opportunities for them. Teacher will have guest speakers visit classroom to discuss different careers options.</td>
<td>Teacher Observation See Rubric for observation in appendix</td>
</tr>
<tr>
<td>Language Arts:</td>
<td>3j.</td>
<td>Students will evaluate the pros and cons of each profession by way of research. In researching the selection the selection, students will determine the primary goal of the profession and the amount of education required for the profession and personality qualities necessary for this profession.</td>
<td>Teacher Observation</td>
</tr>
<tr>
<td>Reading, Writing, Viewing</td>
<td>4a.</td>
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<td>Upon completion of all research, students will present the highlights of their findings through a self selected product. Enrichment/Acceleration: Students will select one career of interest. Students will job shadow a person currently working in the field of choice to determine whether the career is feasible in the future.</td>
<td>Presentation Graded by presentation rubric. See appendix</td>
</tr>
</tbody>
</table>
Remediation: Students will use the internet to research the top ten careers in healthcare. Students will identify the average salary, the amount of education and/or training required, and statistics on employee turnover within this field.

Rubric for Report

| Students incorporated a detailed account of the primary goals of this career in the report. | __________ /25 points |
| Students identified the personal qualities that are necessary for this career in the report. | __________ /25 points |
| Students included the education required for this career in the report. | __________ /25 points |
| Format (Intro, conclusion, etc.) /grammatically correct | __________ 25 points |
| Total Points | __________ /100 points |
### Ninth Grade - Twelfth Grade

**Competencies:**

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

4. Analyze the influence of culture, media, technology, and other factors on health. (C, CH, P)

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<tr>
<td>Health</td>
<td>1c.</td>
<td>Teacher will discuss factors contributing to the spread of infectious diseases. Students will determine reasons that some countries experience outbreaks of particular infectious diseases.</td>
<td>Teacher Observation Graded based on rubric, see appendix.</td>
</tr>
<tr>
<td>Science: Life</td>
<td>1d.</td>
<td></td>
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<tr>
<td>Language Arts:</td>
<td>3a.</td>
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<tr>
<td>Reading, Writing, Listening, Speaking, Viewing</td>
<td>3c.</td>
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<tr>
<td>Social Studies: Geography</td>
<td>3f.</td>
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<td>3k.</td>
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<td>4a.</td>
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<td></td>
<td>4b.</td>
<td>Students will read and analyze key points of the article “Health Workers Race to Block Deadly Virus in Angolan Town” located online at <a href="http://nytimes.com/learning/teachers/featured_articles/20050412tuesday.html">http://nytimes.com/learning/teachers/featured_articles/20050412tuesday.html</a></td>
<td>Quiz on Article</td>
</tr>
</tbody>
</table>
Teacher will divide students into research groups. Students will investigate a country that has experienced an outbreak of an infectious disease.

Students will write a report detailing the causes, effects and possible solutions of the outbreak. Students will present findings to the class.

Enrichment/Acceleration: Students will interview an employee of the local health department to determine the most common infectious diseases in the local community. Students will present findings to the class.

Remediation: Students will use the school library to research the causes of infectious diseases. Students will also determine methods of preventing the spread of infectious diseases. Students will demonstrate (appropriate) preventive methods to the class.

Written Report and Class Presentation graded based on rubric. See appendix.
Tuesday, April 12, 2005

Deadly Diseases
Understanding Contributing Factors in the Spread of Infectious Diseases

Author(s)
Bridget Anderson, The Bank Street College of Education in New York City

Grades: 6-8, 9-12
Subjects: Geography, Health, Science, Social Studies
Interdisciplinary Connections

Overview of Lesson Plan: In this lesson, students consider the social, political, environmental, economic, medical and other considerations for why particular countries experience outbreaks of certain infectious diseases.

Review the Academic Content Standards related to this lesson.

Suggested Time Allowance: 1 hour

Objectives:

Students will:
1. Consider factors that make a particular region susceptible to the spread of an infectious disease.
2. Learn about a recent outbreak of Marburg virus in Africa by reading and discussing the article "Health Workers Race to Block Deadly Virus in Angolan Town."
3. In groups, research key aspects of a particular country and factors related to outbreaks.
4. Individually, reflect on similarities and differences between disease outbreaks in different countries and predict whether or not the Marburg disease would spread effectively in the United States.

Resources / Materials:
- student journals

- pens/pencils
- paper
- classroom board
- copies of the article “Health Workers Race to Block Deadly Virus in Angolan Town,” found online at http://www.nytimes.com/learning/teachers/featured_articles/20050412tuesday.html (one per student)
- resources about geography and infectious diseases (computers with Internet access, almanacs, atlases, library resources, encyclopedias, etc.)

Activities / Procedures:
1. WARM-UP/DO NOW: Upon entering class, students respond to the following prompt in their journals (written on the board prior to class): “You hear about an outbreak of an infectious disease on an international news report, but you missed hearing the location of the outbreak. Many people are ill or dying, and you want to know where this disease is occurring. List at least five factors which might help you determine whether an infectious disease might take root and spread in a particular country. One example is insect populations - if an insect is the carrier of the disease, any environmental conditions which affect the insect’s lifespan will be important.” After a few minutes, allow students to share their responses. Then discuss the following as a class: Where do you often hear about outbreaks of disease that occur internationally? What outbreaks have occurred in North America (West Nile, flu), Europe (bubonic plague, mad cow), Asia (SARS, avian flu), and Africa (Ebola, HIV)? What environmental, social, political, economic and medical considerations made or make it possible for these diseases to infect large segments of the population in these countries?

2. As a class, read and discuss the article “Health Workers Race to Block Deadly Virus in Angolan Town” (http://www.nytimes.com/learning/teachers/featured_articles/20050412tuesday.html) focusing on the following questions:
   a. What disease claimed Larrinda Pinto’s life?
   b. What and where was Mrs. Pinto’s employment prior to her death?
   c. What have the mobile teams of health workers in Angola been doing?
   d. Where in Angola has the spread of Marburg virus been centered?
   e. Where was her death noted, and by whom?
   f. What was the mission of the workers in white protective suits when they entered Mrs. Pinto’s house?
   g. What did these workers promise to do for the rest of Mrs. Pinto’s family?
   h. What three adjectives are used in the article to describe the workers’ efforts?
   i. How many lives had been claimed by the Marburg virus, by the writing of this article?
   j. To what other disease is Marburg related?
   k. What do health officials fear about the spread of Marburg?
   l. Is there an effective treatment for the disease?
   m. Where were the first cases of the virus identified in Angola for this outbreak?
n. How did Mrs. Pinto’s family violate the warnings from the government, and why did they do it, according to the article?

o. How is the virus spread?

p. Why did Mrs. Pinto’s husband not take her to the isolation unit at Uige’s regional hospital?

q. How does Dr. Nestor Ndayimirije compare the current situation with that in past weeks?

r. How will Mrs. Pinto’s family remember her?

s. What questions linger with Mr. Pinto after his tragic loss?

t. How long with the epidemic last, according to Dr. Ndayimirije?

u. What is the disease named after?

v. When was the first Marburg case in Uige? That suggests the epidemic will last how long?

3. Explain to students that they will, in groups, be researching a particular country which has experienced infectious disease outbreaks. They will be looking at factors specific to the country and to the disease that made (or make) it possible for it to thrive in that area. Divide the students into small groups of 2-3 students. Assign to each group a country from the Web site of the World Health Organization that has had at least several incidences of disease outbreak since 2000 (http://www.who.int/csr/don/archive/country/en/). The teacher may choose to focus on a specific continent, like Africa, or have groups select different countries and regions to create a global picture. Each group should follow the following three-step process (copied into a handout for easier student access):

PART ONE: COUNTRY MAP
Each group first draws a detailed map of their selected country, with labeled boundaries and borders, topographical features (rivers, lakes, mountains), capital, region names, at least ten other towns or cities, and its neighboring countries. In addition, research and write at least five facts about the country, including information about the country’s political, economic, social and/or environmental status. As you are conducting your research, look for information about the country that make it more or less susceptible to outbreaks of infectious disease, such as droughts, temperature, rainfall, other climatic factors, wars and conflicts, number of births, population growth rates, infant mortality rates, etc. You may wish to use the CIA World Fact Book at http://www.cia.gov/cia/publications/factbook/ for information.

PART TWO: DISEASE IDENTIFICATION
Then, using the information from the World Health Organization Web site, each group creates a key and labeling system for the map that indicates where, when and of what type particular disease outbreaks occurred in that country. After researching the diseases (two or three), write a 5-sentence factual description about it, including its symptoms, phases and routes of infection. The description should also summarize important details about the outbreak episode and include death or victim counts, length of outbreak, and local and international responses to the situation.
PART THREE: ENVIRONMENTAL FACTORS

Finally, using the information from Parts One and Two as well as other available resources, groups must come up with a concluding paragraph which answers the question from the Warm-Up: “What factors determined why these infectious diseases were able to take root and spread in this particular country?”

Once groups have finished with the three parts, each should present to another group who researched a country in a similar geographic location. Students should take notes on similarities and differences between their two countries and outbreak records for use in the homework assignment.

4. WRAP-UP/HOMEWORK: Individually, students reflect on the three countries they learned about in class: the epidemic of Marburg disease in Angola, as reported in the New York Times article; the country they researched; and the country another group presented to them. Students answer the following question: “Create a ‘Similarities and Differences’ table about the three countries you learned about that compares at least five aspects about them, such as type of disease outbreak, geographic location, number of victims, local or international response, aggravating conditions, environmental factors, etc. Then, in a one-page essay, reflect on whether or not you believe the Marburg virus could become epidemic in the United States, and why or why not. Be sure to reference specific points from your research and the New York Times article as a basis for comparison and extension to your prediction.” In a future class, students may share their tables and essays with their peers.

Further Questions for Discussion:
- What makes a disease “infectious”? Are all diseases infectious?
- What are the different types of routes of infection?
- What are the differences among a cure, a treatment and a vaccine?
- Who discovered the Marburg disease?

Evaluation / Assessment:
Students will be evaluated based on initial journal responses, thoughtful participation in class discussions, cooperation in small groups, research and creation of map and country disease profile, and reflection table and essay on the likelihood of the Marburg virus spreading in the United States.

Vocabulary:
frantic, scour, clad, festooned, disinfect, swift, effective, pediatric, ward, incessant, burial, bodily, stray, spittle, isolation, epidemiologist, epidemic, devoted, sympathetic, vaccine, precautions, query, infected

Extension Activities:
1. Create a job description for an epidemiologist. What types of events or cases might such a scientist look at? Is this profession mostly biology, mathematics or medicine, or more than just these fields? What types of information might an epidemiologist working in a large city be interested in? What types of information might an epidemiologist
working in a small city or suburb be interested in? Where would she or he collect this information? If possible, interview an epidemiologist in your community about epidemics and outbreaks of disease. Come up with 10 questions you would like to ask them, including questions about the Marburg outbreak specifically, outbreaks in general and the role of an epidemiologist in your community. Write an article for the school newspaper.

2. Create a communications and public relations plan for your community in the case of an outbreak of a deadly disease. For example, what should the hierarchy of command be in communicating updates and other information about the outbreak (i.e. who should be in charge of making decisions on what the public should know, and who should be in charge of carrying out the communications effort, etc.)? What form(s) of communication should be used (flyers, phone calls, television reports, radio reports, Web site updates, etc.)? What exactly should be communicated and how? If possible, compare your plan with publicly available emergency plans for your community. What are the similarities and differences between the two plans?

3. Use the World Health Organization Web site to find information about outbreaks by year (http://www.who.int/csr/don/archive/year/en/). Choose a three-year period and map the different outbreaks that have occurred in the world. Be sure to label each type of outbreak (each different disease) distinctly so you can look for patterns. Are there “hotspots” where outbreaks tend to occur more often? Are there places where outbreaks are less common?

4. Explore different cultural traditions for caring for the deceased. How are dead bodies prepared and handled? Are people buried, cremated, etc.? What is the significance of any ceremonies or rituals? Choose a cultural/ethnic/tribal group and create an oral presentation or demonstration of its traditions related to death.

5. Create a one-page profile of the Marburg virus based on information you can find from the Centers for Disease Control, World Health Organization and other Web sites. Create a list of questions that you still have about the virus, or about conflicting information that is not clear or not yet known.

**Interdisciplinary Connections:**

Global Studies - Write a poem about the globalization of disease from the perspective of the disease itself. How does a disease that is native to one area of the world get to other regions of the world? How would you characterize a “super-spreader” – someone who travels to many different countries (for work or pleasure) and unknowingly carries virus particles with him or her?

Economics/Technology - What medical technologies are needed to detect viruses and to test samples for virus infections? Research descriptions and prices in a medical supply catalog available online.
How much do these technologies cost? If you were to equip a clinic with the materials and tools it needed to diagnose Marburg-type viruses and treat/care for infected persons, what would be the ideal clinic setting? What would be the price tag for this ideal wish list? Alternatively, what equipment would you minimally need, and how much would it cost? Imagine you are in a country with limited financial resources and supplies for treating outbreaks of disease. Create a strategy for how clinics could collaborate, and divide resources to get the most coverage for the resources available.

Teaching with The Times - For the period of a month, scour the newspaper on issues and news related to Angola and neighboring countries. Add this new information to your reflection about how certain factors help or hinder the spread of an infectious disease in this country. What developments are occurring in Angola specifically and in Africa generally? To order The New York Times for your classroom, click here.

**Other Information on the Web**
The Centers for Disease Control’s special Web site devoted to the Marburg disease (http://www.cdc.gov/ncidod/dvrd/spb/mnpages/dispages/marburg.htm) includes information for travelers and health professionals, as well as other reports on similar diseases.

The World Health Organization provides detailed information about outbreaks by year and country of viral hemorrhagic fevers, like Ebola and Marburg, on its Web site (http://www.who.int/topics/haemorrhagic_fevers_viral/en/).

**Academic Content Standards:**

**K-12** This lesson plan may be used to address the academic standards listed below. These standards are drawn from *Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education: 3rd and 4th Editions* and have been provided courtesy of the Mid-continent Research for Education and Learning in Aurora, Colorado.

**Grades 6-8**
Science Standard 6- Knows the general structure and functions of cells in organisms. Benchmark: Knows that disease in organisms can be caused by intrinsic failures of the system or infection by other organisms
Health Standard 8- Knows essential concepts about the prevention and control of disease. Benchmarks: Understands how lifestyle, pathogens, family history, and other risk factors are related to the cause or prevention of disease and other health problems; Knows communicable, chronic, and degenerative disease processes and the differences between them

Language Arts Standard 1- Demonstrates competence in the general skills and strategies of the writing process. Benchmarks: Uses style and structure appropriate for specific audiences and purposes; Writes expository compositions
Language Arts Standard 7- Demonstrates competence in the general skills and strategies for reading a variety of informational texts. Benchmarks: Applies reading skills and strategies to a variety of informational texts; Summarizes and paraphrases complex, explicit hierarchic structures in informational texts; Uses new information to adjust and extend personal knowledge base; Seeks peer help to understand information; Draws conclusions and makes inferences based on explicit and implicit information in texts; Differentiates between fact and opinion in informational texts

Grades 9-12
Health Standard 8- Knows essential concepts about the prevention and control of disease. Benchmarks: Understands how the immune system functions to prevent or combat disease; Understands the social, economic, and political effects of disease on individuals, families, and communities

Language Arts Standard 1- Demonstrates competence in the general skills and strategies of the writing process. Benchmarks: Writes compositions that are focused for different audiences; Writes compositions that fulfill different purposes; Writes expository compositions

Language Arts Standard 7- Demonstrates competence in the general skills and strategies for reading a variety of informational texts. Benchmarks: Applies reading skills and strategies to a variety of informational texts; Summarizes and paraphrases complex, implicit hierarchic structures in informational texts, including the relationships among the concepts and details in those structures; Uses discussions with peers as a way of understanding information

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Ninth Grade - Twelfth Grade

Competencies:

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M).

6. Demonstrate the ability to use goal setting and decision making skills to enhance health (Ph, N, H, F, D)

<table>
<thead>
<tr>
<th>Integrated Instruction</th>
<th>Grade/ Competency /Objective</th>
<th>Suggested Teaching Strategies</th>
<th>Suggested Assessment Methods</th>
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<tbody>
<tr>
<td>Health</td>
<td>5c.</td>
<td>Teacher will discuss relationships and problem solving with students. Students will brainstorm different means of problem solving. Students will define relationships and devise different problem solving strategies.</td>
<td>Teacher Observation Graded based on rubric.</td>
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<tr>
<td>Language Arts: Speaking, Listening, Viewing</td>
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<tr>
<td>Social Studies: Civics</td>
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Enrichment:

http://www.learning-for-life.org/lfl/programs/samples/7th.pdf
Students will complete Problem Ownership Activity Sheet (See Attached) in order to distinguish who is responsible for the problem. In pairs, students will analyze what could have been done differently to solve each problem.
| Remediation: In pairs, students will complete the Problem Interference work sheet. Students will describe real life situations and explain how and why interference can become part of the problem. Students will brainstorm ways to positively resolve difficult problems. | Problem Interference Work Sheet |
Building Relationships Focus:
1. Developing knowledge and understanding of human relationships
2. Understanding skills involved in problem solving and the intricacies of relating to others through the problem-solving process
3. Examining the specific components of healthy human relationships

Related Standards: English/Language Arts, Social Studies

Lesson Objectives:
The students will:
1. Understand skills involved in problem solving and the intricacies of relating to others through the problem-solving process.
2. Distinguish the parties responsible for problems.
3. Recognize personal ownership of problems when appropriate.
4. Analyze techniques for solving various problems, including determining when it is not appropriate to interfere in others' or external problems.

Materials: Copies of “Problem Ownership” and “Problem Interference” handouts

Procedures
Tell students that a principal skill in problem solving is being able to recognize to whom or what a problem “belongs.” Many times we worry about something that is beyond our control, whether the problem is someone else’s or caused by external factors. It’s important to recognize who or what “owns” a problem, because then we know when we can and should do something to resolve the problem and when we have to let go of the problem and not worry about it. If we get involved in trying to solve problems that don’t really concern us, we can cause interference and sometimes make the problem worse.

Activity 1: Give each student a copy of the “Problem Ownership” worksheet to be completed individually in class. When the students are finished, have them exchange papers and grade them in class. As you go over each problem, generate class discussion by asking the students what could be done to solve each problem and who is responsible for doing the solving.

Activity 2: Distribute a copy of the “Problem Interference” handout to each student. Have students choose a partner to work with on the handout, discussing each problem and the interference that took place. Students are permitted to create examples of problems and instances of interference if they experience difficulty remembering actual examples. When all students are finished with the worksheet, ask volunteers to share their answers with the class.
Reflection: Transitioning from the discussion generated from students voluntarily sharing personal problem-solving experiences, ask the class the following questions: What did we learn today about problem ownership and interference? How are these ideas related to problem solving in general? How does problem ownership and interference affect our relationships with others? What are some things we can remember to do so that we "own" the problems that are ours and avoid interfering in problems that are external or "belong" to other people?

Assessment: Collect the worksheets and record a grade for accuracy and completeness, as well as for class discussion participation.
### ACTIVITY 1

**Problem Ownership**

For each of the following problems, decide whether the problem is yours, the other person's, or external.

<table>
<thead>
<tr>
<th>Mine</th>
<th>Other's</th>
<th>External</th>
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- Your best friend says he or she is bored with school.
- A friend has borrowed your favorite shirt and keeps forgetting to return it.
- Scientists are predicting a major earthquake in California in the next 50 years.
- A friend comes over to visit while you're trying to finish tomorrow's homework assignment.
- You didn't understand today's math lesson, and there's going to be a quiz tomorrow.
- Your friend's dog escapes his leash and runs away while you're walking him.
- The air conditioner in your house doesn't work, and tomorrow's temperature is predicted to be higher than 100 degrees.
- Your best friend has just been dumped by his/her girlfriend/boyfriend.
- Your brother is always getting mad and throwing things when he doesn't get his way.
- Your best friend accidentally broke his mother's favorite vase.
- You forgot to water the neighbor's plants while he was out of town, even though you'd agreed to do so.
ACTIVITY 2

Problem Interference

List three real-life problems: one should be yours, one should be someone else's, and one should be an external problem. Describe how individuals who didn't "own" the problem became involved, or "interfered," and what the result was. If you can't think of real-life situations, you may create examples.

My problem:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Interference:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Other's problem:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Interference:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

External problem:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Interference:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Ninth Grade - Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health (Ph, N, H, F, D)

7. Demonstrate the ability to advocate for personal, family, and community health. (C, CH, F, S, D)

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<tbody>
<tr>
<td>Health</td>
<td>1c.</td>
<td>Teacher will begin class with a discussion of HIV and other STD's. Teacher will reinforce how quickly the disease(s) can spread via a game. <a href="http://www.advoOatesforyouth.org/lessonplans/hivtransmission.htm">http://www.advoOatesforyouth.org/lessonplans/hivtransmission.htm</a></td>
<td>Participation rubric. See appendix.</td>
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<tr>
<td>Science: Life</td>
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HIV Transmission Game

Purpose: To increase awareness of how quickly HIV and other STDs can be spread and how they can be stopped and to illustrate effects of peer pressure

Materials: Hershey's Hugs & Kisses, Hershey's Almond Kisses, index cards, pens/pencils, and a small brown paper bag for each TAP member

Time: 30 minutes

Planning notes:

- In each participant's bag (except one) place a mixture of approximately 10 to 12 Hugs & Kisses and one marked or unmarked index card. In one participant's bag put 10 to 12 Almond Kisses (instead of Hugs & Kisses) and an unmarked index card. Put a star (*) on the bottom of the bag with Almond Kisses.

- Mark the bottom corner of two index cards with a small "C." Place each card in a different bag with Hugs & Kisses.

- Mark two other index cards with a small "1C." Place each card in a different bag with Hugs & Kisses.

- Write on a fifth index card: Do not participate. When asked, tell anyone who wants to exchange candy, 'I do not want to exchange hugs and kisses.' Place the card in a bag with Hugs & Kisses and put an "A" on the bottom of the bag.

- Write on two separate index cards: Do not participate with anyone other than your partner. When asked, tell anyone (other than your partner) who wants to exchange candy, 'I do not want to exchange hugs and kisses with anyone other than my partner.' Place each card in a different bag with Hugs & Kisses and put an "M" on the bottom of each bag. Give these two bags to the two participants who are willing to sit in the front of room.

- Do not place any of the seven, marked cards in with the bag with Almond Kisses.

Procedure:

1. Ask for two participants who are willing to be partners and to sit in the front of the room throughout the entire exercise. Give each of these two participants a bag marked with an "M."

2. Hand out the other bags to the remaining participants. Explain that each participant is
receiving a bag with Hershey’s Kisses and an index card. Ask each participant to pull the card out of his/her bag and follow the instructions on it (if there are any) and to keep secret any instructions on his/her card.

3. Tell the participants that they are to exchange candy and that they should write on their index cards the name of everyone with whom they exchange candy.

4. Give participants about five minutes to exchange candy and to write down names. Then, have everyone return to his/her seat.

5. Find out who got the most signatures.

6. Ask the one person whose bag has a star (*) on the bottom to stand up. Explain that this was the person who started out with Almond Kisses and that, for the purposes of this exercise, the Almond Kisses represent HIV infection.

7. Then, ask anyone who has an Almond Kiss in his or her bag to stand up. Explain that, because they exchanged Hugs & Kisses for Almond Kisses, they, too, have are infected with HIV.

8. Ask everyone who is still seated to check their index cards for the name of anyone who is standing. Ask participants to stand up if they see the name of someone who is standing on their index cards. Continue to ask participants to stand until everyone except the three participants with the "M" and the "A" on the bottom of their bags are standing.

9. Ask the participants with "C" written on their cards to sit down. Explain that the "C" means they always used condoms or clean needles and protected themselves from HIV infection. They are not infected with HIV.

10. Ask the people with "IC" written on their cards to sit down. Then, ask them to stand right back up. Explain that these people used condoms and/or clean needles each time, but they used them incorrectly. They are infected with HIV.

11. Explain to the participants that this activity contains an error because someone might have received an Almond Kiss (HIV infection) and then given it away again. By contrast, you cannot give away HIV. Once you have it, you can share it with others; but, you can never get rid of it yourself.

12. Remind participants that this is a game. No one can become infected with HIV because he/she eats a particular kind of food nor by sharing or exchanging food.

Discussion Questions:

1. Did anyone notice anyone who did not stand up? Introduce the "abstinent" participant and the "monogamous" partners. Ask them how they felt not playing. How did the others feel when these people refused to exchange candy with them?

2. Why is it difficult not to participate when everyone else is participating?

3. How did the person with the Almond Kisses (HIV infection) feel?

4. The one person whose bag had a star did not know he/she was "infected" with HIV. How could we have known ahead of time?

What is chlamydia?

Chlamydia is a common sexually transmitted disease (STD) caused by the bacterium, *Chlamydia trachomatis*, which can damage a woman's reproductive organs. Even though symptoms of chlamydia are usually mild or absent, serious complications that cause irreversible damage, including infertility, can occur "silently" before a woman ever recognizes a problem. Chlamydia also can cause discharge from the penis of an infected man.

How common is chlamydia?

Chlamydia is the most frequently reported bacterial sexually transmitted disease in the United States. In 2002, 834,555 chlamydial infections were reported to CDC from 50 states and the District of Columbia. Under-reporting is substantial because most people with chlamydia are not aware of their infections and do not seek testing. Also, testing is not often done if patients are treated for their symptoms. An estimated 2.8 million Americans are infected with chlamydia each year. Women are frequently re-infected if their sex partners are not treated.

What are the symptoms of chlamydia?

Chlamydia is known as a "silent" disease because about three-quarters of infected women and about half of infected men have no symptoms. If symptoms do occur, they usually appear within 1 to 3 weeks after exposure.

In women, the bacteria initially infect the cervix and the urethra (urine canal). Women who have symptoms might have an abnormal vaginal discharge or a burning sensation when urinating. When the infection spreads from the cervix to the fallopian tubes (tubes that carry eggs from the ovaries to the uterus), some women still have no signs or symptoms; others have lower abdominal pain, low back pain, nausea, fever, pain during intercourse, or bleeding between menstrual periods. Chlamydial infection of the cervix can spread to the rectum.

Men with signs or symptoms might have a discharge from their penis or a burning sensation when urinating. Men might also have burning and itching around the opening of the penis. Pain and swelling in the testicles are uncommon.

Men or women who have receptive anal intercourse may acquire chlamydial infection in the rectum, which can cause rectal pain, discharge, or bleeding. Chlamydia can also be found in the throats of women and men having oral sex with an infected partner.

How does chlamydia affect a pregnant woman and her baby?

In pregnant women, there is some evidence that untreated chlamydial infections can lead to premature delivery. Babies who are born to infected mothers can get chlamydial infections in their eyes and respiratory tracts. Chlamydia is a leading cause of early infant pneumonia and conjunctivitis (pink eye) in newborns.

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How do people get chlamydia?

Chlamydia can be transmitted during vaginal, anal, or oral sex. Chlamydia can also be passed from an infected mother to her baby during vaginal childbirth.

Any sexually active person can be infected with chlamydia. The greater the number of sex partners, the greater the risk of infection. Because the cervix (opening to the uterus) of teenage girls and young women is not fully matured, they are at particularly high risk for infection if sexually active. Since chlamydia can be transmitted by oral or anal sex, men who exclusively use men are also at risk for chlamydial infection.

What complications can result from untreated chlamydia?

If untreated, chlamydial infections can progress to serious reproductive and other health problems with both short-term and long-term consequences. Like the disease itself, the damage that chlamydia causes is often "silent."

In women, untreated infection can spread into the uterus or fallopian tubes and cause pelvic inflammatory disease (PID). This happens in up to 40 percent of women with untreated chlamydia. PID can cause permanent damage to the fallopian tubes, uterus, and surrounding tissues. The damage can lead to chronic pelvic pain, infertility, and potentially fatal ectopic pregnancy (pregnancy outside the uterus). Women infected with chlamydia are up to five times more likely to become infected with HIV, if exposed.

To help prevent the serious consequences of chlamydia, screening at least annually for chlamydia is recommended for all sexually active women age 25 years and younger. An annual screening test also is recommended for older women with risk factors for chlamydia (a new sex partner or multiple sex partners). All pregnant women should have a screening test for chlamydia.

Complications among men are rare. Infection sometimes spreads to the epididymis (a tube that carries sperm from the testes), causing pain, fever, and, rarely, sterility. Rarely, genital chlamydial infection can cause arthritis that can be accompanied by skin lesions and inflammation of the eye and urethra (Reiter's syndrome).

How is chlamydia diagnosed?

There are laboratory tests to diagnose chlamydia. Some can be performed on urine, other tests require that a specimen be collected from a site such as the penis or cervix.
Ninth Grade - Twelfth Grade

Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (C, PH, CH, H)

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (M, PH, D, S, D)

6. Demonstrate the ability to use goal setting and decision making skills to enhance health (Ph, N, H, F, D)

<table>
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<tr>
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<tr>
<td>Health</td>
<td>1c.</td>
<td>Students will brainstorm reasons that young adults engage in unprotected sex (fear of talking about it with partner, poor planning, and use of drugs or alcohol). Teachers will inform students of statistics that prove that young adults are at a greater risk for developing STD's. <a href="http://school.discovery.com/lessonplans/programs/deadlyDesires/">http://school.discovery.com/lessonplans/programs/deadlyDesires/</a></td>
<td>Teacher Observation</td>
</tr>
<tr>
<td>Science: Life</td>
<td>5a.</td>
<td>Students will create a brochure warning students about the dangers of engaging in unprotected sex. &lt;www.cdc.org&gt;</td>
<td>Brochure--Rubric will be used for grading; see</td>
</tr>
<tr>
<td></td>
<td>6f.</td>
<td>Enrichment/Acceleration: Students will contact the local health department to determine the most common STDS in the local area. Remediation: Students will choose one STD to research. Students will identify methods of transmission, preventative measures, and whether the disease or infection is curable. Students will present the information using technology, such as Power Point.</td>
<td></td>
</tr>
</tbody>
</table>
Lesson Plans Library

Reality Matters
Deadly Desires

Grade level: 6-12
Subject: Health
Duration: Three class periods

Lesson Plan Sections

Objectives | Materials | Procedures | Extensions | Evaluation | Vocabulary | Academic Standards | Credit

Objectives

Students will:
- review statistics about teens and sexuality,
- learn about the prevalence of sexually transmitted diseases (STDs), and
- research and write an informational brochure on STDs.

Materials

- Computer with Internet access
- Print and online resources about STDs
- What are some reasons teens may engage in unprotected sex? (poor planning, use of drugs or alcohol, fear of talking about it with partner)

Procedures

1. The statistics say that teens are at great risk for developing STDs. Review some of these statistics with the class.
   - Forty-five percent of teens have had sex.
   - Of those teens who are sexually active, 30 percent have without a condom.
   - One in four sexually active teens will contract at least one HIV each year, and three out of every five of these cases were

http://school.discovery.com/lessonplans/programs/deadlyDesires/
During the teen years,
- Seventy-five percent of women and half the men diagnosed with chlamydia experience no symptoms.
- Between 60 and 80 percent of people wish they'd waited to have sex.

2. The statistics also show that most students don't understand STDs and don't understand S to prevent their spread. To address this, they will research and create a brochure about STDs. You can divide the class into groups of 6 to work on a single brochure. Urge students to be creative in the design and to use computer graphics programs to make the brochure short and easy to read, but also informative. The brochure should cover:
- What STDs are and how they are transmitted,
- Descriptions of some of the most common STDs including the dangers,
- How STDs are treated, and
- What to do to prevent transmission of STDs.

3. Students should use print and online resources to produce their brochures. The following are helpful. Note: You may wish to preview the sexually transmitted diseases that may not be appropriate for younger students.
- American Social Health Association's iwannaknow.org
http://www.iwannaknow.org
- Go Ask Alice's Sexual Health from Columbia University
http://www.goaskalice.columbia.edu/Cat7.html
- Kaiser Family Foundation's National Survey of Adolescents: Young Adults: Sexual Health Knowledge, Attitudes and Experience
http://www.kff.org/youthhivstds/3218-index.cfm
- KidsHealth: Sexually Transmitted Diseases (STDs)
- Planned Parenthood's TeenWIRE
http://www.teenwire.com/
- Scarletteen.com's Infection Section
http://www.scarletteen.com/infection/articles.html
- Sex, Etc.: Sexually Transmitted Infections
http://www.sxetc.org/topics/default.asp?pid=1336&tid=

4. After the brochures are complete, have each group present its product to the group. Let everyone vote for the best-designed brochure, and the winner. You can give prizes or rewards to the winners. You might also consider printing up the brochures to distribute to other classes in the school.

Extensions

- For a focused study of the AIDS epidemic, visit the New York Times Learning Network page "So Little Time: Investigating the Shortage of AIDS in Health:
activity, students take a quiz to separate myth from fact about transmission, research the spread of AIDS in the world, and create a timeline of the disease's advance.

- **Crossroads**
  (http://www.pbs.org/pov/pov2001/5girls/crossroadsgame/index.html) an online decision-making game that accompanies information activities connected with the PBS P.O.V. program "5 Girls." All girls, the scenarios presented in the game are appropriate for all teens. The questions and site content aren't about teen sexuality, but it is one area of focus. The site offers resources at http://www.pbs.org/pov/pov2001/5girls.

- As pointed out in the video, most students believe "everyone" has sex, when in reality, less than half are. The pressure to do what everyone else is doing can be strong, so it's important for teens to be aware of knowledge and conviction to help them make the right choices. Students explore how they feel about the subject, they can go to an excellent Planned Parenthood page "How Do You Know When It's Time for Sex" at http://www.plannedparenthood.org/teens/ready4sex. Students can read some background and take a brief questionnaire to help them evaluate their feelings.

**Evaluation**

Use the following three-point rubric to evaluate students' work during the lesson.

- **Three points:** Students were highly engaged in class discussion, conducted thorough research, and produced a creative and informative brochure.
- **Two points:** Students participated in class discussions, conducted adequate research, and produced an informative brochure.
- **One point:** Students participated minimally in class discussion, conducted minimal research, and produced a simplistic brochure.

**Vocabulary**

**Chlamydia**

*Definition:* Bacterial STD exhibiting few symptoms that may lead to infertility if left untreated.

*Context:* Chlamydia is the most common STD among teens.

**Genital Herpes**

*Definition:* Also known as herpes simplex virus 2, a viral STD that can affect the genitals.

*Context:* There is no cure for genital herpes, and it can be passed to others even when no sores or symptoms are present.

**Genital Warts**

*Definition:* STD caused by human papillomavirus that causes warts on the skin.
genitals
*Context:* If left untreated, genital warts may cause cervical cancer in women.

**gonorrhea**
*Definition:* Bacterial STD that may cause a discharge in men and symptoms in women
*Context:* Serious problems such as widespread infection and infertility from untreated gonorrhea.

**HIV/AIDS**
*Definition:* HIV (humane immunodeficiency virus) is the virus that causes acquired immunodeficiency syndrome. AIDS is a disease in which the immune system becomes unable to fight off infections.
*Context:* HIV is the sexually transmitted virus that can cause AIDS, an incurable disease.

**STD**
*Definition:* Sexually transmitted disease
*Context:* Practicing safe-sex techniques such as using a condom can prevent STDs.

**syphilis**
*Definition:* Bacterial STD that begins with genital sores and progresses through four increasingly dangerous stages
*Context:* Untreated syphilis can stay in the body for years and may damage or severe birth defects if passed from mother to child.

**Academic Standards**

The National Science Education Standards provide guidelines for teaching science as well as a coherent vision of what it means to be scientifically literate for students in grades K-12. To view the standards, visit [http://book](http://book)

This lesson plan addresses the following national standards:
- Science as Inquiry: Abilities necessary to do scientific inquiry
- Life Science: Structure and function in living systems; Reproduction and heredity
- Science in Personal and Social Perspectives: Personal health; Family benefits

**Credit**

Rhonda Lucas Donald, curriculum writer, editor, and consultant
Competencies:

1. Comprehend concepts related to health promotion and disease prevention. (M, PH, D)

3. Demonstrate the ability to practice health enhancing behaviors and reduce health risks. (CH, PH, F, D)

5. Demonstrate the ability to use interpersonal communication skills to enhance health. (F, H, M)

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<td>Health</td>
<td>1a. 3b.</td>
<td>Teacher will briefly discuss with students the meaning of stress and the impact it can have on the body.</td>
<td>Teacher Observation Graded based on rubric. See appendix.</td>
</tr>
<tr>
<td>Science:</td>
<td>5b. 5c.</td>
<td>Students will brainstorm the causes of stress and identify positive ways in which they can handle stress.</td>
<td></td>
</tr>
<tr>
<td>Life</td>
<td></td>
<td>Teacher will write students' positive responses to handling stress on the board, while emphasizing the powerful feelings that stress can cause if managed inappropriately.</td>
<td></td>
</tr>
<tr>
<td>Language Arts: Speaking, Listening, Writing</td>
<td></td>
<td>Enrichment/Acceleration: In groups four to six, students will participate in a “Gallery Walk” See attachment. <a href="http://www.educationworld.com/a_tsl/archives/02-1/lesson045.shtml">http://www.educationworld.com/a_tsl/archives/02-1/lesson045.shtml</a></td>
<td></td>
</tr>
<tr>
<td>Remediation:</td>
<td></td>
<td>Students will research ways of managing stress and write a report detailing which stress management techniques (exercise, journaling) they feel would work best for them and why.</td>
<td>Written product rubric. See appendix.</td>
</tr>
</tbody>
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Striking Out Stress: A "Gallery Walk" Activity

Subjects

- Health
- Mental Health
- Our Bodies

Grades

- 6-8
- 9-12

Brief Description

This lesson teaches about stress and how to cope with its effects.

Objectives

Students

- identify situations that cause feelings of stress.
- determine and discuss positive/healthy ways to cope with stressful situations.

Keywords

stress, holidays, body, psychology, guidance, mental, health, cope, coping

Materials Needed

- 6 sheets of poster board (or chart paper)
- 6 crayons or magic markers
- adhesive tape
- CD or audio tape player and a selection of lively music
- chalk

Lesson Plan

Discuss with students the definition of stress. Write students thoughts on a chalkboard or chart as they express them. After a brief period of sharing, review with students the ideas they have offered.

Emphasize that stress can cause powerful feelings, as well as biological changes in the body. Allow students to brainstorm some feelings and biological changes that stress can cause. Write their responses on a board or chart.