

COURSE: Health	GRADE(S): 8 th Grade
UNIT: Nutrition	TIMEFRAME: 10 Lessons

NATIONAL STANDARDS:	
STANDARD 1:	Students will comprehend concepts related to health promotion and disease prevention to enhance health.
STANDARD 2:	Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.
STANDARD 3:	Students will demonstrate the ability to access valid information and products and services to enhance health.
STANDARD 7:	Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
STANDARD 8:	Students will demonstrate the ability to advocate for personal, family and community health.

STATE STANDARDS:	
10.1. Concepts of Health	
10.1.9.A.	Analyze factors that impact growth and development between adolescence and adulthood.
10.1.9.C.	Analyze factors that impact nutritional choices of adolescents.
10.1.9.E.	Analyze how personal choice, disease and genetics can impact health maintenance and disease prevention.
10.2. Healthful Living	
10.2.9.B.	Analyze the relationship between health-related information and adolescent consumer choices.
10.4. Physical Activity	
10.4.9.B.	Analyze the effects of regular participation in moderate to vigorous physical activities in relation to adolescent health improvement.
<i>Reading Assessment Anchors:</i>	
R8.A.2 Understand nonfiction appropriate to grade level.	
R8.A.2.1	Identify and apply the meaning of vocabulary in nonfiction.
R8.A.2.3	Make inferences, draw conclusions, and make generalizations based on text.
R8.A.2.4	Identify and explain main ideas and relevant details.
R8.B.1 Interpret, compare, describe, analyze, and evaluate components within and between text.	
R8B.3.1	Interpret, describe, and analyze the characteristics and uses of facts and opinions in non-fictional text.
R8.B.3.2	Distinguish between essential and nonessential information within or across text.

UNIT OBJECTIVES:	CONTENT:
Analyze nutrients and their importance to good health.	<p>I. Nutrients are the substances in food that your body needs to function properly to grow, to repair itself, and to supply you with energy.</p> <ul style="list-style-type: none"> - <u>Carbohydrates</u>: Are the starches and sugars found in food. They are the body's preferred source of energy, providing 4 calories per gram. When not used for energy, it is stored as body fat. (Should comprise 55 to 65% of

daily calories, mainly from complex.)

- o *Simple carbohydrates*, or sugars, are present naturally in fruits, some vegetables, and milk.
- o *Complex carbohydrates*, or starches, are found in great supply in rice, and other grains, seeds, nuts, legumes, and potatoes.

- Chemically more complex than simple carbohydrates. They are made of *many* sugars linked together.
- Fiber is a special form of complex carbohydrate found in the tough, stringy part of vegetables, fruits, and grains. It aids digestion, prevents constipation, controls diabetes and may reduce the risk of some cancers and heart disease.

- Proteins: Are nutrients that help build and maintain body tissues. (Muscle, bone, connective tissue, teeth, skin, blood, and vital organs all contain protein.) Provide four calories per gram. Unused protein calories are converted to fat for storage.

- o Amino acids are chains of building blocks that make up proteins. The body can make 11 out of 20 amino acids.
 - Essential amino acids are the 9 your body can't make. Must come from the foods you eat.
 - Complete proteins are foods that contain all the essential amino acids. These sources include animal products, including milk and many soybean products.
 - Incomplete proteins are foods that lack some of the essential amino acids. They are derived from the seeds of plants: legumes, nuts, whole grains, and the seeds themselves.

- Fats: Are essential for growth and healthy skin.

- o They carry vitamins A, D, E, and K into the blood. They add flavor to food and help satisfy hunger since they take longer to digest. Provide nine calories per gram of energy. Dietary guidelines recommend fat intake to no more than 30% of calories.
 - *Saturated fats* are animal fats and tropical oils. Usually solid or semi solid at room temperature. A high intake of saturated fats is

associated with an increased risk of heart disease.

- *Unsaturated fats* are most vegetable fats, including olive, canola, soybean, corn and cottonseed oils. They become liquids, or oils, at room temperature. They have been associated with reduced risk of heart disease.
- *Cholesterol* is a fat-like substance produced in the liver of all animals and found only in foods of animal origin. It is instrumental in the production of the sex hormones, of vitamin D and of the protective sheath around nerve fibers. Elevated blood cholesterol levels constitute a major risk factor for heart and other circulatory diseases. Limiting the consumption of dietary fat, especially saturated fat, may reduce the risk.

- *Vitamins*: Are compounds that help regulate, many vital body processes, including the digestion, absorption and metabolism of other nutrients. They are micronutrients, (needed in small amounts.) Of the 13 vitamins that play a key role in good nutrition, only one – vitamin D – is manufactured by the body. The rest must be derived from food.
 - o *Water-soluble vitamins* include vitamin C and the eight vitamins in the Vitamin B complex. They dissolve in water and pass easily into the bloodstream in the process of digestion. Excess amounts are excreted in urine. Not stored in the body, so they must be replenished.
 - o *Fat-soluble vitamins*: Are absorbed and transported by fat, they include Vitamins A,D, E, and K. They are stored in the body's fatty tissue, the liver, and the kidneys. Excess buildup can have a toxic or other damaging effect on the body.
- *Minerals*: Are inorganic substances that the body cannot manufacture but that act as catalysts, regulating many vital body processes. (Micronutrients.) Some minerals are needed in larger amounts than others.
 - o *Iron* is important during teen years when growth is rapid. Essential for the

hemoglobin in the blood, which carries oxygen throughout the body. Lack of iron, results in tiredness and little endurance. Found in meat, shellfish, legumes, peanuts, dried fruits, fortified breakfast cereal, enriched rice.

- o Calcium gives structure to bones and helps develop and maintain bone strength. It also aids muscle contraction, blood clotting and the proper functioning of the nervous system. Dairy products, some leafy green vegetables, and canned salmon are good sources. A lack of calcium in the teen years can lead to poor bone density and later in life to osteoporosis.
- o Three other important minerals belong to a group called electrolytes, (they become electrically charged when in solution, as they are in the body fluids.) Sodium and potassium help maintain the balance of fluid within body cells. Sodium and chloride are found in table salt. Bananas and orange juice are excellent sources of potassium.
- Water. Makes up the greatest percentage of the body. It is a regulator and is vital to every body function. The body uses about 10 cups a day, more, if you perspire.

II. Food in Your Life

- The nutrients in food affect how you look, feel, act, grow, and how well you function each day.
- Your eating habits stem from both a physical need for food and a psychological desire for food.
- The most basic reason for eating is physical.
 - o Hunger is a natural drive that protects you from starvation.
 - o When stomach is empty, its walls contract, stimulating nerve endings that signal your brain that you're hungry.
- Appetite is a desire, rather than a need, to eat. It is a learned response shaped by factors in your environment and by your emotions.
- There are a number of environmental factors that influence your food choices.
 - o Culture – foods associated with picnics, fairs, movies, games, holidays, ethnicity, religion, and teen eating practices.

Analyze healthy eating habits and strategies to manage your body weight.

- o Family and friends – at first you eat what your mom put down in front of you.
 - o Advertising
 - o Time and money – are the two top factors that influence food shopping decisions. Cost, convenience, and food safety come next.
 - o Your emotions
 - Choosing foods that taste good and provide nutrients without too much fat, cholesterol, and sodium, is one of the most healthful ways to reduce major risk factors for chronic diseases, including obesity, high blood pressure, and high blood cholesterol.
 - o Eating is linked to six out of ten leading causes of death in the U.S.
 - Many people are unable to distinguish between appetite and hunger.
- III. Weight problems can affect the quality of life.
- Obesity: Means excess body fat. Higher risk of health problems: hypertension, diabetes, high blood cholesterol, atherosclerosis, and some cancers. May affect self-esteem and social health.
 - o Body Mass Index – ratio of a person's height and weight. Calculate: <http://apps.nccd.cdc.gov/dnpabmi/Calculator.aspx>
 - o Having a BMI of 30 or above is classified as obese.
 - o Overweight – BMI of 25 to 29.9
 - Underweight: Is being 10% or more below normal weight. Have little body fat as an energy reserve, and less of the protective nutrients the body stores. More difficult to fight off infection and increases the risk of health problems when surgery is needed.
- IV. Managing Body Weight
- Smart weight loss strategies:
 - o Eat Fewer calories
 - o Eat *nutrient-dense* foods (High in nutrients relative to their caloric content)
 - o Burn more calories through exercise.
 - o Teens eat at least 2,400 to 2,600 calories daily to assure essential nutrient intake.
 - o Eat low-calorie foods.
 - Smart weight gain strategies:
 - o Eat more of the foods high in complex carbohydrates.
 - o Eat more frequently. Second helpings.

Analyze damages of "fad" diets.

Analyze and discuss media influence on body image.

- o Eat nutritious snacks, two or three hours before a meal.
- Benefits of physical activity contributing to weight management.
 - o Burns calories, promoting loss of body fat.
 - o Tones and builds muscles to give a firm, lean body shape.
 - o Helps promote a normal appetite response.
 - o Helps relieve stress that often leads to overeating and under eating.
 - o Helps increase metabolic rate.
 - o Increases self-esteem, helps keep your plan on track.
 - o Without exercise, the weight lost may be lean tissue as well as body fat.

V. Dangerous eating/weight control practices

- Total exclusion of a food group.
- Weight cycling (yo-yo dieting) is a cycle of losing and regaining weight. Fad diets cause lean body tissue loss along with body fat that is replaced with more body fat. Fat burns fewer calories than muscle so the person requires fewer and fewer calories to maintain weight.
- Fasting causes the body to use its own muscle tissue for energy.
- Liquid protein, (high protein, low carbs) have such serious side effects that the FDA requires a warning label.
- Diet pills, (amphetamines), control appetite but may cause side effects. May be addictive.
- Natural herbs (ma huang) may contain a form of ephedrine which has been linked with strokes and heart attacks.
- Anabolic steroids are chemicals similar to the hormone testosterone that are illegally consumed to increase muscle mass and performance. Consequences include increased risk of cancer, sterility, acne, unusual wt. gain or loss, sexual underdevelopment and dysfunction, violence, suicidal tendencies, depression.
- Food allergies

VI. Body Image

- Our personal view and interpretation of our body, including mental, emotional, historical and physical components.
- "A picture of the body seen through the mind's eye."
 - o Influences of Body Image
 - Culture

Explore causes and effects of eating disorders.

- Mass Media
- Advertising

- Distorted Body Image
 - Subjective concept of one's physical appearance based on self-observation and reactions of others.
- Signs and Symptoms of Distorted Body Image:
 - Spending a lot of time in front of the mirror, obsessing about specific body parts.
 - Weight oneself multiple times per day.
 - Hiding one's body with oversized clothing.
 - Refraining from enjoyable activities because one feels ashamed or self-conscious about one's body.
 - Talking about the flaws in one's body and minimizing other qualities such as intelligence, humor, creativity, athleticism
 - Obsessing about food, weight and level of fitness in private and in public

VII. Eating Disorders

- Anorexia Nervosa: Is a disorder in which the irrational fear of being obese results in severe weight loss from self-induced starvation. (Anorexia means "without appetite" Nervosa means "of nervous origin.")
 - A psychological disorder with emotional and physical consequences.
 - Relates directly to an individual's self-concept and coping abilities.
 - Outside pressures, high expectations, the need to achieve, and the need to be accepted help lead to this disorder.
 - These behaviors and emotions with exercising, emotional problems, unnatural interest in food, unrealistic or distorted sense of body image, and denial.
 - Males are at risk but mostly females in teens or twenties.
 - Health Effects:
 - Physical symptoms related to malnutrition and starvation include extreme:
 - weight loss

- constipation
- hormonal changes
- heart damage
- impaired immune function
- decreased heart rate
- cessation of menstruation (amenorrhea)

- *Bulimia Nervosa*: is a disorder in which cycles of overeating are followed by some form of purging or clearing of the digestive tract.

- Person often follows a restrictive diet, then binges, (eats large quantities of food), when hungry followed by self-induced vomiting, abuse of laxatives, or extreme exercise sessions.
- Associated with this behavior may be the misguided notion that once the perfect figure is attained, everything in life will be fine.
- Often secretive, but bulimic knows they have a problem.
- Leads to serious health problems, even death.
- Health Effects:
 - Vomiting and diarrhea can lead to dehydration, kidney damage, and irregular heartbeat.
 - Chronic vomiting erodes tooth enamel, causes tooth decay, and damages tissue of the stomach, esophagus, and mouth.
 - Laxative abuse interferes with digestion and absorption, causing nutrient deficiencies. May also lead to serious damage of blood composition.

- *Compulsive overeating*

- *Medical help and qualified counseling should be sought immediately.*

- Disorders are not a disease but symptoms of other problems.
- Recovery is a long process, but early diagnosis and care can improve chances.

- Helping a friend with an eating disorder:

- Listen
- Use active listening skills and encourage friend to share feelings.
- Do not counsel but encourage your friend to get help.

<p>List methods of healthy eating.</p>	<ul style="list-style-type: none"> - <u>Compulsive Exercise</u>: A constant preoccupation with exercise that is often associated with distorted eating habits. <ul style="list-style-type: none"> o Finding time at any cost to exercise. <ul style="list-style-type: none"> <u>Example</u>: Cutting school, taking time off of work. o Exercise is your social life. o Overly anxious, guilty and angry if unable to exercise. o Exercise is driven by desire to control your weight, shape and/or body composition. o Food choices based solely on exercise (punishment for unhealthy eating) o Exercise alone. o No rest days or time off even if injured or ill. o How you feel about yourself is based on how much exercise you get. o Exercise is never fun or pleasurable, and you are not satisfied with you successes. o <u>Health Effects</u>: <ul style="list-style-type: none"> ▪ Amenorrhea ▪ Osteoporosis ▪ Stress fractures ▪ Low estrogen level (loss of bone density) ▪ Low energy level ▪ Stress on heart ▪ Anxiety ▪ Depression <p><u>VIII. Tips for Healthy Eating</u>:</p> <ul style="list-style-type: none"> ✧ Don't skip meals, plan meals and snacks ahead of time. ✧ Learn about simple healthy ways to prepare foods. ✧ Sugar-avoid getting too much (try fiber rich foods examples: whole grains, vegetables, fruits). ✧ Be mindful when eating (slow down when you eat, it takes 20 minutes to feel full, listen to body, only eat when you are hungry). ✧ Avoid "diet thinking" (concentrate on eating healthy and keeping weight steady rather than weight loss).
<p>ACTIVITIES:</p> <p>Nutrient Lesson Introduction: Students will write</p>	<p>ASSESSMENTS:</p> <p>Analyze personal diet in relation to the RDA and</p>

<p>"carbohydrates", "proteins", and "fats" on a piece of paper. Under each nutrient, list as many foods as you can that are good sources of that nutrient. Review lists.</p> <p>On-Line analysis of the Food Guide Pyramid: Students will enter their personal information following the steps given to determine their individual consumption needs. www.pyramid.gov (Accessing Information & Analyzing Internal Influences)</p> <p>Create a media campaign; billboard, slogan, bumper sticker, commercial for healthful body image. (Advocacy)</p> <p>Write a letter to an editor of a teen magazine explaining why teens place too much emphasis on their appearance. (Advocacy)</p> <p>Small group activity that has students write 5-10 internal/external analysis based on positive comments given by other students.</p> <p>Poster or Collage of body images in the media. (Advocacy)</p> <p>Questionnaire on body image/eating disorders. (Analyzing Internal/External)</p> <p><i>Teacher directed differentiated instructional projects and activities are ongoing and based on student need.</i></p> <p>Reward</p> <p>RESOURCES:</p> <p>http://www.pyramid.gov/ (2006)</p> <p><i>Adolescence: Developing a Positive Body Image (2006)</i>, Dairy CA Retrieved on June 20, 2006: http://www.dairycouncilofca.org/edu/edu_prog_adol_body.htm</p> <p><i>Compulsive Exercise: Too Much of a Good Thing (2004)</i>, Eberle, S.E., Retrieved on June 20, 2006 from: http://www.nationaleatingdisorders.org/</p> <p><i>Compulsive Exercise (2006)</i>, Council of Nemours Foundation Retrieved on June 20, 2006 from: http://kidshealth.org/parent/emotions/behavior/</p>	<p>predict the immediate and long-term impact on their health.</p> <p>Partner analysis to determine nutrient consumption. Write a one page paper on their own decision making and goals for improving their own healthy eating.</p> <p>Design presentation on the damages of fad diets.</p> <p>In a journal entry students describe medias influence on body image.</p> <p>Teacher observation of student's ability to apply the media influence on body image.</p> <p>In a one page paper, describe the causes of eating disorders and their impact on overall health.</p> <p>Student's ability to synthesize information on healthy eating through a brochure.</p> <p>REMEDIATION:</p> <p>Counseling with the school nurse/guidance counselor about body shape and/or size.</p> <p>ENRICHMENT:</p> <p>Analyze factors that influence eating patterns.</p> <p>Interview students and teachers as too their food choices.</p> <p>Research advanced body weighing techniques.</p> <p>Interview a dietician on proper food choices for body types and weight goals</p> <p><i>Suggested Supplemental Reading:</i></p> <p>"Perfect", by Natasha Friend Milkweed Editions, 2004</p> <p>"We Are Beautiful: Teen Girls Shout Out About Inner Beauty and Self Confidence", by Woody Winfree, Source Books, Inc. 2006</p> <p>"All Made Up: A Girls Guide to Seeing Through Celebrity Hype and Celebrity Real Beauty", by Audrey D. Brashich, Walker and Co. 2006</p>
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[compulsive_exercise.html](#)

<http://medical-dictionary.thefreedictionary.com/Distorted+body+image>