Health & Fitness: *Discussion Guide*

Overview

Every year or so, it seems a new diet plan explodes onto the scene. Yet, when it comes to nutrition-based eating guidelines, the changes are slower in the making. Examine long-standing principles and the latest research with this discussion guide and its related videos and activities.

Students will begin by comparing the original USDA Food Guide Pyramid with the revised pyramid released in 2005. Then, they'll investigate the benefits of the Mediterranean Diet and of physical activity. The guide ends with a look at how exercise affects metabolism, making muscles more efficient.

Classroom Activities

1. Show the "What to Eat: Fish, Meat, and Vegetables" segment from the *Nutrition and Digestive Health: Eating for Your Future* program.
    - **Discussion:** What eating guidelines does the segment recommend? *(Choose freshly cooked food because you can control the ingredients and will digest fewer additives and preservatives. Make sure your diet is balanced, such as what's recommended by the Food Guide Pyramid. Be sure that your diet also involves variety and moderation.)*
    - **Graphic Organizer–Part 1:** Begin by showing students the clipart image of the original USDA Food Guide Pyramid and asking them to describe the balance it illustrates. Explain that the pyramid was replaced by a new symbol in April 2005, MyPyramid. Have students research the new symbol and create a Venn diagram that illustrates the similarities and differences between the two pyramids and the food guidance systems they recommend. The following Web sites are good starting points:
        - http://kidshealth.org/kid/stay_healthy/food/pyramid.html
        - http://www.mypyramid.gov/
    - **Computer Game:** Individually or in groups, have students play the MyPyramid Blast Off Game, which challenges them to "fuel their rocket with food and physical activity" and tracks how their choices align with the new food guidance system (http://www.mypyramid.gov/kids/kids_game.html#).

2. Show the "Fat and Diet Plans: Providing Taste with Nutrition" segment from the *Nutrition and Digestive Health: Eating for Your Future* program. (Access to *unitedstreaming* is required.)

   - **Discussion:** What foods are emphasized in the Mediterranean Diet? *(plenty of fresh fruits and vegetables, whole grains, an emphasis on fish and poultry rather than red meat, heart-healthy fats, and good sources of calcium)* What do studies suggest about this diet? *(People who follow it have a lower risk of heart disease and colon cancer, and they also seem to live longer.)* What are the three types of fatty acids? *(saturated, monounsaturated, polyunsaturated)*
   - **Graphic Organizer–Part 2:** Have students expand their Venn diagram from the earlier activity to include the Mediterranean Diet Pyramid, which is shown at http://www.oldwayspt.org/pyramids/med/p_med.html. As a class discuss the three pyramids. What elements do all three food guidance systems share? What are the most significant differences among the pyramids? Which set of nutritional guidelines do students' current diets most closely match? Which food pyramid do they believe is the most healthful?
   - **Science Investigation:** Olive oil is at the core of the Mediterranean diet—and may be the key to its success. Have students learn more about a recent study that suggests that phenolic compounds might be largely responsible for olive oil's heart-healthy benefits. The following Web sites are good places to start:
     - http://www.webmd.com/content/Article/115/111589.htm
     - http://www.sciencedaily.com/releases/2005/11/051109092521.htm
     - http://www.eurekalert.org/pub_releases/2005-11/acoc-pcm110805.php

3. Show the "The Connection Between Nutrition and Health" segment from *Life Science: Health* program. (Access to *unitedstreaming* is required.)

   - **Discussion:** What are the keys to staying healthy? *(A nutritious diet and moderate exercise)* What does Roy Walford mean when he says most Americans' diets are just terrible. *(Americans on average consume many more calories than their bodies require.)* What did his Biosphere Project find? *(That the decline in immune system response and function that normally happens with age is delayed in those people who eat a calorie-restricted diet.)*
   - **Health Investigation:** In the video, students hear that "research has shown that exercise can help relieve stress in addition to its other benefits." Ask the class to brainstorm some additional benefits exercise provides, noting students' ideas on the board. Divide the class into nine groups, one to investigate and report on the nine benefits of physical activity provided on the MyPyramid site (http://www.mypyramid.gov/).
     - Improves self-esteem and feelings of well-being
     - Increases fitness level
     - Helps build and maintain bones, muscles, and joints
     - Builds endurance and muscle strength

- Enhances flexibility and posture
- Helps manage weight
- Lowers risk of heart disease, colon cancer, and type 2 diabetes
- Helps control blood pressure
- Reduces feelings of depression and anxiety

4. Show the "How Exercise Affects Metabolism" segment from the *Body Story: Metabolism* program. (Access to *unitedstreaming* is required.)
   - **Discussion:** What happens in George's body after his bout of exercise? *(Throughout George's muscle fiber, new blood vessels start growing, increasing supplies of energy-rich fat. And deep within the muscle cells, his mitochondria start to divide, doubling the energy they can generate.)* What happens to George's muscles as he continues to work out? *(His muscles become more efficient, and the more fat they burn, the more energy he has.)*
   - **Writing Activity:** The video segment ends with the following statement "Fat is always just a few mouthfuls away." Have students write a one-page essay in which they explain in their own words what this means.
   - **Calculating BMR:** Tell students that their body expends energy no matter what they're doing. The number of calories their body would burn if they stayed in bed all day is their Basal Metabolic Rate—calories burned while at rest. Ask students to estimate the BMR of an American male of average height, 5-foot, 10-inches, who weighs 175 pounds and is 18-years-old. *(1920.1)* Do they think a female of the same height, weight, and age would have the same BMR? *(No, hers would be 1652.5)* Send students to the following site, here they can calculate their BMR:
     - http://health.discovery.com/tools/calculators/basal/basal.html

Academic Standards

National Academy of Sciences
The National Academy of Sciences provides guidelines for teaching science in grades K–12 to promote scientific literacy. To view the standards, visit this Web site: http://books.nap.edu/html/nses/html/overview.html#content.

This discussion guide addresses the following national standards:

- Science in Personal and Social Perspectives (K–4): Personal Health
- Science in Personal and Social Perspectives (5–8): Personal Health; Risks and benefits
- Science in Personal and Social Perspectives (9–12): Population and community health

Mid-continent Research for Education and Learning (McREL)
McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K–12 Education addresses 14 content areas. To view the standards and benchmarks, visit http://www.mcrel.org/compendium/browse.asp.

This lesson plan addresses the following national standards:

Health

- Understands essential concepts about nutrition and diet
- Knows how to maintain and promote personal health

Language Arts

- Writing: Uses grammatical and mechanical conventions in written compositions; Gathers and uses information for research purposes
- Viewing: Uses viewing skills and strategies to understand and interpret visual media