Teaching Nutrition through Math, Science, Language Arts and Health Enhancement

Eat Smart Be Smart

Be Heart Smart

- **Grade Level:** Fourth **Lesson Time:** 50 Minutes
- **Integrated Core Subjects:** Science and Health Enhancement
- **Montana Content Standard:** Science 3: Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.
- **Montana Content Standard:** Health Enhancement 7: Students demonstrate health-enhancing behaviors.
- **Objectives:** Students will understand the parts of the heart muscle and function of each one; define circulatory system and review how the blood flows through the body; and recognize the ways to keep the heart healthy through making healthy choices and being physically active.

Lesson/Activity

1. Ask the students to point to where their heart is located. Remind them that the heart is a pump made of muscle and is made up of different parts that have different functions. Ask students to compare the differences between the heart and other muscles in their body. The heart works by itself, and you cannot control it. A muscle that you cannot control is called an involuntary muscle.
2. Have students demonstrate that the heart is an involuntary muscle by doing the following:
   A) Ask students to stand up and use their arm muscle to reach over their heads.
   B) Ask students to use their leg and foot muscles to hop on one foot and then the other.
   C) Have them use their muscles to run in place.
   Point out they have also been using their heart muscle during these steps but they can't control their heart beat. The heart muscle must be involuntary, because it has to work all the time (even when we're sleeping) to pump blood (which carries oxygen) around the body.
3. Watch the short movie on the heart to learn its parts and the functions of the different parts. Click on the Heart, and then the movie link. This movie reviews the circulatory system and how it supplies our bodies with a continual flow of oxygen-rich blood.
4. An easy way to explain to the students about circulation is to make the comparison between blood and a train. Blood is like a train in that it carries oxygen and nutrients to the different parts of the body and then takes the waste (carbon dioxide) away. Like train tracks, your veins and arteries are the paths along which your blood moves. Your heart, lungs and body are like the train stations—where your blood is coming and going. The whole process of moving blood through your body is circulation.
5. After the movie, have a class discussion of the heart function based on the following questions: What is the main function of the heart? What is circulation and how would you define it? How does our body receive blood?

Materials Needed

- A copy of Keeping My Heart Healthy work sheet for each student.
- Teacher reference: A copy of the Label the Heart's Parts and Follow the Blood work sheets; answer sheet for Label the Hearts Parts and Keeping My Heart Healthy.
- Kid's Health Web site: http://kidshealth.org/classroom/index.jsp?Grade=pk&Section=body
- Movie on the Heart: http://kidshealth.org/kid/htbw/htbw_main_page.html then click on the Heart, movie links

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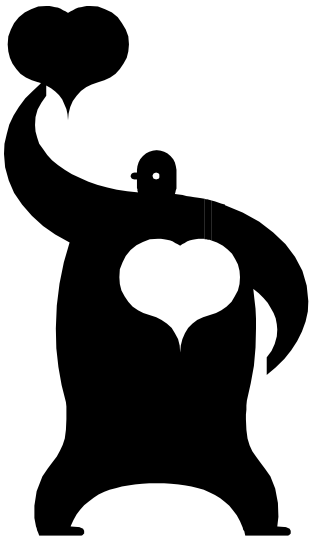
6. Review the parts of the heart and the functions of each by projecting the Label the Heart's Parts on to the board. If time permits, project the Follow the Blood Handout on the board and ask the kids to help you trace the circulation of the blood through the heart.
7. Ask the students to name some steps to keep the heart healthy. Examples include exercising each day, limiting high fat (and high sodium) foods and selecting foods that are high in fiber.
8. Ask the students to name physical activities that they enjoy that work the heart. Ask them how they know the heart is beating faster. Answer: taking their pulse. Distribute the Keeping My Heart Healthy work sheet. Have the students (while sitting in their desks) take their pulse for 6 seconds and multiply that number by 10 to obtain their heart rate per minute. Then ask them to stand up and run in place for one minute, then take their pulse again. Which number is higher? Is there a difference between the student's heart rates?
9. Ask the students to complete the Keeping My Heart Healthy work sheet. Go over answers in class (see answer key) Conclude the lesson by reminding the students that by making healthy food choices and keeping physically active we can keep our hearts healthy and strong.



Outcome Goals

- Students will be able to explain what the heart is and its importance.
- Students will identify heart healthy foods to enjoy each day.

Extending the Lesson

- Obtain menus from restaurants (including fast food establishments) and have the students work in pairs to plan a heart healthy meal from the menus. Have them explain the reason they chose the items and ask them to review the menus for appeal (variety of colors, texture and food groups). Have them present their menus to the class or create a poster displaying their heart healthy menus.

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Acknowledgments/Adapted From

American Heart Association, How Does Blood Circulate lesson; Kids Health in the Classroom, Cardiovascular System
and Denise Zimmer, RD