**Description:** Students will be divided into groups and will monitor their heart rates and determine which exercise is best for exercising their hearts.

**Learning Objectives:**
- Students will use their multiplication skills.
- Students will practice collecting data and making conclusions.
- Students will learn the correlation between exercise and a healthy lifestyle.

**Activity Time:** 45 – 60 minutes

**Materials:**
Each group of students will need:
- Stopwatch
- Pens or pencils
- Heart Monitor Math worksheet (page 3 of 3)
- Open space (gymnasium, field, auditorium or cafeteria)

**Directions:**
- Distribute a Heart Monitor Math worksheet to each student.
- Tell the class that they will be using different formulas to measure their heart rates. Explain why it is important to know how to measure your heart rate (good exercise level, good health, avoid overexertion, etc.) and let them know the normal resting heart rate for children, which is 70-100 beats per minute for ages 6 – 15.
- Have students measure their resting heart rates. (See the Keep Moving! worksheet found after the last activity sheet to learn the proper way to calculate heart rate.) Have students record their results on their Heart Monitor Math worksheet. (Note: Kids’ resting heart rates are typically faster than adults’ because they have smaller bodies.)
- Discuss the proper way to complete jumping jacks and squats and how to march. (See the Keep Moving! worksheet found after the last activity sheet to learn the proper way to perform these activities.)
• Have students complete the physical activities on the worksheet and determine their heart rates after each activity by finding either their radial or carotid pulse and using the math indicated on the worksheet. Once all activities are completed, have the students answer the questions at the end of the worksheet.

• Discuss what happens to the body when the heart rate gets elevated and why it is important to make exercise an important part of every day.

**Note:** Could be team-taught with a physical education teacher.

*Submitted by Brian Golden, Post Road Elementary, White Plains, New York*

**Correlation to National Curriculum Standards:**

**Understand numbers, ways of representing numbers, relationships among numbers, and number systems.**

- Develop an understanding of large numbers and recognize and appropriately use exponential, scientific and calculator notation.
- Develop meaning for integers and represent and compare quantities with them.
- Understand the meaning and effects of arithmetic operations with fractions, decimals and integers.

**Understand meanings of operations and how they relate to one another.**

- Understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.

**Compute fluently and make reasonable estimates.**

- Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods.
- Develop, analyze and explain methods for solving problems involving proportions, such as scaling and finding equivalent ratios.

*From NCTM http://standards.nctm.org/document/chapter6/numb.htm*
Heart Monitor Math

Determine your resting heart rate
Number of beats in 10 seconds: ____________________________
Number of beats in 1 minute (number of beats in 10 seconds x 6): ____________________________

Determine your heart rate after marching in place
March in place; after 2 minutes, determine your heart rate:
Number of beats in 15 seconds: ____________________________
Number of beats in 1 minute (number of beats in 15 seconds x 4): ____________________________

Determine your heart rate after performing squats
Perform squats; after 2 minutes, determine your heart rate:
Number of beats in 20 seconds: ____________________________
Number of beats in 1 minute (number of beats in 20 seconds x 3): ____________________________

Determine your heart rate after performing jumping jacks
Perform jumping jacks; after 2 minutes, determine your heart rate:
Number of beats in 30 seconds: ____________________________
Number of beats in 1 minute (number of beats in 30 seconds x 2): ____________________________

Questions:
Which activity gave you the highest heart rate?

Why did that activity give you the highest heart rate?

Which exercise do you think is best for improving your physical condition?

What other exercises would be good for improving your health on a daily basis?