Description: Students will perform several physical activities and set goals based on measures of central tendency. After six weeks, the physical activities will be performed again, and the new data will be compared with the initial data.

Learning Objectives:
• Students will learn how to collect and organize data.
• Students will learn how to find the mean, mode and median.
• Students will learn how to interpret and communicate data.

Activity Time: Day 1 – 20 minutes; Day 2 – 30 minutes; Six weeks later, Day 1 – 20 minutes; Day 2 – 30 minutes

Materials:
• Stopwatch or other timer
• Paper and pencils
• Rewards for students who meet their goals (optional)

Directions:
Day 1:
• The day before completing this activity, ask students to wear a t-shirt and loose-fitting pants or shorts to school the next day.
• Have students perform jumping jacks for 30 seconds, counting their repetitions as they go. Students will then write down their results.
• Have students perform squats for 30 seconds, counting their repetitions as they go. Students will then write down their results.
• Gather everyone’s data and, on your own time, record all the data into one list per activity. The data needs to be ordered from smallest to greatest in order to find the median. To respect students’ privacy, do not include their names with the data.
• Make copies of the two lists for students (one per student).
Day 2:
- Review the measures of central tendency (mean, mode and median) with the students.
- Distribute the lists of data and have students identify the mode, if one exists, and calculate the mean and the median for the two physical activities.
- Save the information to compare it with the data that will be gathered in six weeks.
- Have students set a class goal for a new median for each of the two activities.
- Have students brainstorm ways to improve performance, and have them set individual goals for improvement for the two activities.
- Announce that the activities will be repeated in six weeks.
- Remind students of their goals throughout the six weeks.

Six weeks later:

Day 1:
- Repeat the jumping jack and squat fitness activities.
- Have students evaluate whether they improved their performance and met their goal.
- Gather everyone’s data and, on your own time, record all the data into one list for each activity. The data needs to be ordered from smallest to greatest to find the median. To respect students’ privacy, do not include their names with the data.
- Make copies of the two lists for students (one per student).

Day 2:
- Review the measures of central tendency (mean, mode and median) with the students.
- Distribute the lists of data and have students identify the mode, if one exists, and calculate the mean and the median for the two physical activities.
- Compare the mean, mode and median created six weeks earlier. Discuss the comparison.
- Reward students who met their goals (optional).

Submitted by Chantelle Kirk, North Whitfield Middle School, Dalton, Georgia
Correlation to National Curriculum Standards:

**Understand numbers, ways of representing numbers, relationships among numbers, and number systems.**
- Work flexibly with fractions, decimals and percents to solve problems.
- Compare and order fractions, decimals and percents efficiently and find their approximate locations on a number line.
- Develop meaning for integers and represent and compare quantities with them.

**Understand meanings of operations and how they relate to one another.**
- Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions and decimals.

**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 and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results.

From NCTM http://standards.nctm.org/document/chapter6/numb.htm