**HOW BIG IS YOUR FOOTPRINT?**

**Overview:** The ecological footprint concept is a way to roughly measure the impact of a person’s choices on the environment. People have become so accustomed to their diet, cars, homes, & energy usage that they don’t realize that the Earth will not be able to provide the needed resources indefinitely. You will go online to calculate how many Earths it would take if everyone on the planet lives the way that you do.

**Objectives:**

1. Increase awareness of the impact of choices on the Earth. This awareness is to result in a goal to reduce personal impact (footprint).

2. Learn the mean, median, mode, & standard deviation of a set of data.

**Materials:**

• Access to the Internet

• Graph paper & poster paper

• Calculators

**BACKGROUND INFORMATION**

How much food does a farm produce? Guess the number of acres in a small farm. An acre is roughly 40,000 square feet or a square plot of land about 200 feet by 200 feet. Could 1 acre provide all the food needed for one person for one year? What about provide the materials needed to build a home? What about heating costs? Could the farm provide wood for a fireplace? Could the farm provide energy for equipment? A farm cannot provide gasoline or electricity (usually), so there are other resources needed to provide our comfort & lifestyle for a year. What is the average number of acres to provide for the needs of the students in BSpa? What is the greatest amount? What is the least amount? Suppose this number of acres were to be translated into the number of planet Earths needed if everyone on the planet lived as a member of the class does. What would be a reasonable number?

**PROCEDURE**

1. Go online to the URL http://ecofoot.org . This site has 13 questions that you are to answer. From their answers, the site calculates the number of acres needed to sustain that person’s choices. The site also converts the acres into the number of Earths needed to sustain the planet’s population if everyone lived in the same manner.

2. When you have arrived at the number of acres & Earths, complete the handout attached.

3. Write your values on the board. Once everyone has put their numbers up, calculate the mean number of planets needed, & the mean number of acres needed to sustain the members of the class. (While you wait, try another eco footprint calculator: <http://www.myfootprint.org/en/> & compare the results of the two.)

4. Create a graph of the data in bar graph form. Identify the high & low values for the class. How is the mean affected by these values?

5. Calculate the standard deviation for the data. This measure of variation describes the spread of the data. If the standard deviation is more than 50% of the mean, then there may be some people in the class with large values for acreage or Earths.

**FOR DISCUSSION**

1. What is the average number of acres for the students in the class?

--What is the average number of Earth’s needed?

2. Which statistic would you use if you wanted to point out the lack of awareness of the environment?

--Which statistic would you use if you did not want to alarm the public?

3. What is the biggest factor that contributes to a high number of acres?

--Which area do you think could conserve the most of the earth’s resources?

4. Suppose you were to calculate the mean again eliminating the highest 3 values. Is the mean still greater than 1 Earth?

--What does that mean for future generations?

--Is it enough to change only the extreme lifestyles or does everyone need to change if we are to get the number down to below 1 Earth needed?

5. What are the next steps?

--How can we carry this message to other people?

***Extra Credit:***

***\*\*\*Create a poster or brochure of your personal Eco Footprint & what you will personally do to reduce it\*\*\****