

KNOWLEDGE IS POWER

* VIDEO OVERVIEW *

Knowledge is Power focuses on the activities of Students for a Better Earth as they conduct a recycling survey. Two types of surveys are conducted. One group of students goes door to door and asks questions, while a second group calls people on the telephone. They then compare the survey results and determine what percentage of the people in their community recycle and what products are recycled.

In the process of conducting the survey, the volunteers in Students for a Better Earth:

- Read and interpret tables of statistics.
- Read and interpret frequency tables.
- Construct a frequency table from statistical data.
- Read and interpret a bar chart.
- Read and interpret a pie chart.

The following key concepts are presented in the video.

- Statistics can be used to influence public opinion.
- There are many real world applications for statistics.
- Descriptive statistics involves analyzing and summarizing information and presenting that information in the form of a table or a chart.
- Statistical inference is the use of statistics to predict the future.
- The mathematics behind statistical inference is based on probability theory.
- Statistics are used to manage businesses.
- Statistical information can be gathered through a survey.
- Sampling involves measuring random individuals from an overall population.

* DISCUSSION QUESTIONS *

Before viewing the video, set the scene by asking your class the following questions. After soliciting some answers, distribute the answer sheets.

Question 1 - What is the purpose of statistics?

Answer - To turn information and data into knowledge, so that it can be used and shared with others.

Question 2 - Name three uses for statistics in everyday life.

Answer - Applications mentioned in the video include: sports, weather, stock market, public opinion polls, pollen count, crime rate, unemployment figures, and industrial output.

Question 3 - What is the difference between descriptive statistics and statistical inference?

Answer - In descriptive statistics you analyze and summarize information and present the data in the form of a table or chart. Statistical inference is used to predict the future.

Question 4 - In the field of statistics, what does sampling mean?

Answer - Sampling is a way of measuring something by examining individuals taken at random from an overall population.

* MATH PROBLEMS *

After you are finished watching the video, complete the following math problems to assist Students for a Better Earth in their statistical study.

Problem 1:

Our volunteers called 1000 people at random and asked about recycling of glass, newspaper, and plastic. The following is the number of individuals who said they recycled each product:

Glass - 383

Newspaper - 410

Plastic - 240

A. What is the percentage of people who recycle glass?

B. What is the percentage of people who recycle newspaper?

C. What is the percentage of people who recycle plastic?

Problem 2:

Create a bar chart to see a comparison between the number of people who recycle glass, newspaper, and plastic.

The following is the number of individuals who said they recycled each product:

Glass - 383

Newspaper - 410

Plastic - 240

Problem 3:

Create a pie chart to see a different visual picture of the number of people who recycle glass, newspaper, and plastic.

The following is the number of individuals who said they recycled each product:

Glass - 383

Newspaper - 410

Plastic - 240

Knowledge Is Power – Answer Key

* MATH ACTIVITY *

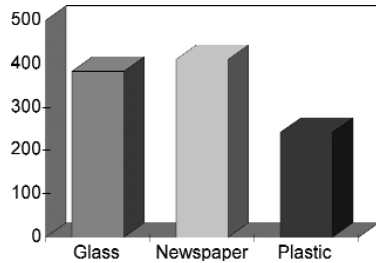
Problem 1:

Our volunteers called 1000 people at random and asked about recycling of glass, newspaper, and plastic.

- A. What is the percentage of people who recycle glass? **38.3%**
- B. What is the percentage of people who recycle newspaper? **41%**
- C. What is the percentage of people who recycle plastic? **24%**

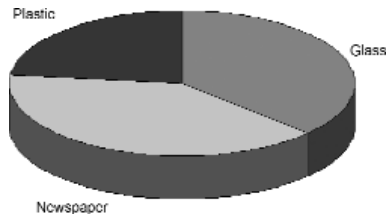
Problem 2:

Create a bar chart to see a comparison between the number of people who recycle glass, newspaper, and plastic.



Problem 3:

Create a pie chart to see a different visual picture of the number of people who recycle glass, newspaper, and plastic.



Measuring Your World

Knowledge Is Power

AN INTRODUCTION TO STATISTICS

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