

Oakwood Cemetery Data Collection Project

Subject: Pre-AP Science, 6th grade

Rational or Purpose: In this project, students are to collect data in the City of Austin's Oakwood Cemetery. Using the data, they will construct Excel spreadsheets and graphs to illustrate trends in populations. Using these simple tools, students will be able to point out the flu epidemic that occurred in the Austin area around 1918. Students will also construct a population pyramid using the same data, and make predictions based on that pyramid.

Materials:

Computers with MS Excel

Oakwood Cemetery Age and Gender Data Sheet

Oakwood Cemetery Deaths per Year Analysis Sheet

Access to the Oakwood Cemetery or the Austin History Center's Oakwood Cemetery Database

Lesson Duration: 1 week

TEKS Objectives:

§112.22. Science, Grade 6. (a) (1) (6), (b) (2a-e)

Background:

An outbreak of influenza occurs when the virus infects humans and becomes communicable. Our immune systems do not have the ability to fight off the infection and it is spread rapidly throughout a community. Within the last 100 years, there have been three world-wide outbreaks of influenza, in 1918, 1957, and 1968. The outbreak that occurred in 1918 resulted 500,000 deaths in the United States, targeting healthy adults.

The City of Austin's Oakwood Cemetery is one of the city's oldest cemeteries, with records dating back to 1866. By tracking statistics that can be collected from headstones, trends in populations for the city of Austin can easily be recorded. Microsoft Excel can manage the data and create a clean visual for the trends to be monitored.

Activity:

Students will visit the Oakwood Cemetery to collect statistics on birth dates, death dates, and gender to compile a spreadsheet. Through manipulation of the data, students will sort ages, dates of death, gender, etc. They will also produce a graph on Excel to display large numbers of death during the flu epidemic around 1918.

Procedure:

1. Make all necessary field trip arrangements for Oakwood Cemetery, or visit Austin History Center's searchable database at:
<http://www.ci.austin.tx.us/library/ahc/oakwood.htm>
2. Have students enter statistical information on Excel and make graphs, using the instructions given on the Oakwood Cemetery Deaths per Year worksheet.
3. Have the students complete Oakwood Cemetery Age & Gender Analysis worksheet.



**OAKWOOD CEMETERY
DEATHS PER YEAR ANALYSIS**

Open the Excel spreadsheet entitled "Death Per Year Analysis". Put your Name at the top and save as "DEATHS PER YEAR (YOUR NAME)" into your H Drive.

Here you will find 3 columns.

1. What does each column represent?

Using the Chart Wizard, make 2 graphs, one for the Oakwood Annex (the graveyard your class surveyed) and one for the Oakwood Original (the graveyard last year's 6th graders surveyed).

Step 1: Make column graphs

Step 2: Choose the years as the X axis and the # of deaths as the Values.

Step 3: Label your plot accurately and get rid of the legend.

Step 4: The Chart Location should be "As a new sheet."

2. How do the two graphs compare? Why do the graphs look so different?

Here is a quote from the Austin History Center:

"Oakwood Cemetery is the oldest of the five cemeteries maintained by the City of Austin. Provisions for its creation were made in 1839 when the city was founded. In 1917, Oakwood Annex was opened just east of the original grounds."

How might the history of the two sections of the cemetery explain some of the differences found in your analysis?

Create a column for Total Deaths per year. Here add the two sets of data so that it shows the number of deaths for both sides of the cemetery.

Can you explain any peaks in the data?



**OAKWOOD CEMETERY
AGE & GENDER ANALYSIS**

After the data has been cleaned up and the duplicate data has been eliminated:

1. Add a column for **Age of Death**. Add in a formula calculating age of death. That would be equal to the **Year of Death** minus the **Year of Birth**. Fill out the entire column.
2. Sort your data by age.
3. Look for anomalies such as negative ages or ridiculously long life spans. The Guinness World Record for longest life is in the 120s. Anything over 120 years can be considered an anomaly.
4. Make some predictions on:
 - a. average age of death for all buried there _____
 - b. average age of death for males buried there _____
 - c. average age of death for females buried there _____
5. What is the average age of death for people buried at Oakwood cemetery?
6. What is the average age of death for males buried at Oakwood cemetery?
7. What is the average age of death for females buried at Oakwood cemetery?
8. How did your predictions compare to what you concluded from your analysis?
9. What conclusion can you make about the life expectancy of males vs. females?
10. Create a population pyramid for the people buried at the Oakwood Cemetery. You can find directions for building a population pyramid on Excel at:
<http://www-agecon.ag.ohio-state.edu/class/aede597.01/gonzalez/pyramid/>
Give two conclusions you can derive from your finished population pyramid.