Mining - Graphing Activity

Objectives:

(1) compare types of mining activity in the United States;

(2) identify number of fatalities in mining activities

Active Mines from 2004 to 2013…………………

Active mines are those mines that reported any mine operator employee hours during the year. Overall there were 14,478 mines in 2004 and 13,759 mines in 2013. The commodity breakdown was 1,700 coal, 349 metal, 882 nonmetal, 4,362 stone, and 6,466 sand and gravel mines. (Note that changes in 2013 in the Standard Industrial Classification of sand and gravel resulted in 261 mines being assigned to the nonmetal rather than the sand and gravel sector)

Procedure:

GRAPH # 1

1. Use the following data table and prepare a multi-line graph.
2. Include a key to indicate each separate commodity with a different color.
3. Include the TOTAL as a line on the graph.
4. BE SURE to include labels on both axes and title your graph.

**Number of Active Mines by Sector and Year, 2004-2013**

(Data Source MSHA)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| **Coal** | 2,011 | 2,063 | 2,113 | 2,030 | 2,129 | 2,076 | 1,945 | 1,973 | 1,871 | 1,700 |
| **Metal** | 251 | 263 | 280 | 278 | 293 | 289 | 296 | 318 | 351 | 349 |
| **Nonmetal** | 741 | 739 | 741 | 725 | 720 | 685 | 654 | 637 | 641 | 882 |
| **Stone** | 4,401 | 4,490 | 4,573 | 4,639 | 4,633 | 4,601 | 4,525 | 4,445 | 4,433 | 4,362 |
| **Sand/Gravel** | 7,074 | 7,111 | 7,178 | 7,199 | 7,132 | 6,980 | 6,863 | 6,803 | 6,797 | 6,466 |
| **Total** | 14,478 | 14,666 | 14,885 | 14,871 | 14,907 | 14,631 | 14,283 | 14,176 | 14,093 | 13,759 |

GRAPH # 2

1. Create a bar graph of the number of occupational mining fatalities.
2. On same graph with another scale for the right side Y axis – create a line graph of the Fatality Rate- per 100,000 full-time employees.
3. Include axes labels and title with appropriate scales.

**Number of Occupational Mining Fatalities by Year, 2004-2013**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Fatalities | 55 | 57 | 73 | 67 | 52 | 34 | 70 | 37 | 35 | 41 |
| Rate | 20.3 | 19.8 | 24.2 | 21.9 | 16.8 | 12.7 | 25.4 | 12.4 | 11.7 | 14.2 |