

**Subject:** Mathematics  
**Grade level:** 9-12

**Objectives:** At the end of the lesson, students will be able to draw graphs from data, using different graphing techniques and applications.

**Prerequisite Knowledge:** students should be able to plot basic points on a graph and know on which axis are the dependent and independent variables.

**Introduction:** Employees entering the oil industry need to have the ability to use simple arithmetic as part of their everyday duties. Students will be provided with statistics concerning today's oil economy. In groups of three or four, students will select one set or subset of data. They will prepare their data in each of the following forms: bar graph, line graph, pictograph, and pie chart. Each group will write a summary indicating the strengths and weaknesses of each graph and explain in what situation they would use that particular graph.

Giant Oil Fields of Kern County

RANK	FIELD	DISCOVERY	
		DATE	TOTAL PRODUCTION THROUGH 2000
1	Midway-Sunset	1894	2,596 million barrels of oil
2	Kern Rivet	1899	1,760 million barrels of oil
3	South Belridge	1911	1,237 million barrels of oil
4	Elk Hills	1911	1,174 million barrels of oil
*	Coalinga	1887	874 million barrels of oil
5	Buena Vista	1909	662 million barrels of oil
*	Coalinga East Extension	1928	504 million barrels of oil
*	Kettleman North Dome	1928	458 million barrels of oil
6	Cymric	1909	346 million barrels of oil
7	Lost Hills	1910	300 million barrels of oil
8	Mount Poso	1926	294 million barrels of oil
9	McKittrick	1896	288 million barrels of oil
10	Kern Front	1912	199 million barrels of oil
11	North Coles Levee	1938	163 million barrels of oil
12	Edison	1928	144 million barrels of oil
13	Fruitvale	1928	121 million barrels of oil
14	Rio Bravo	1937	117 million barrels of oil
15	Greeley	1936	115 million barrels of oil
16	North Belridge	1912	112 million barrels of oil
17	Yowlumne	1974	108 million barrels of oil
18	Round Mountain	1927	101 million barrels of oil
19	Mountain View	1933	89 million barrels of oil
20	Ten Section	1936	84 million barrels of oil
	Poso Creek	1938	83 million barrels of oil
	Paloma	1934	61 million barrels of oil
	South Coles Levee	1938	59 million barrels of oil

\*San Joaquin Valley fields located in Fresno County

Kern County	12.8 billion barrels of oil
California	25.2 billion barrels of oil

*Primary Energy Consumed in CA by Source*

1999

Natural Gas	31%
Hydroelectric	6%
Other	5%
Nuclear	5%
Wood and Waste	2%
Coal	1%
Petroleum	50%

**Assessment:**

Obtain statistics on the amount of oil produced by one oil well, specific oil field, or one local oil producer. Students can graph the information, and predict production rates. Related discussion should include various factors on production rates, such as availability, demand, and economic factors.