

# Derricks to Desks

## Lesson Plan for Algebra

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### Content Summary:

- This lesson requires algebra students to graph a system of linear equations. This lesson uses Oil Industry information to graph cost and profit for a typical well in Kern River Oil Field
- This lesson helps students see "real-world" uses for linear equations.

### Introduction:

- Students will read the Oil Well Information Sheet regarding oil well costs and production.
- Students will write linear equations in slope-intercept form and create graphs from the data.
- Students will determine the point of intersection for the two graphs.

### Materials:

- Graph paper
- Oil Well Information Sheet

### California Content Standard:

- Algebra 6.0- Students graph a linear equation.
- Algebra 9.0 - Students solve a system of two linear equations with two variables and interpret answers graphically.

### Activity:

- Read the attached paragraph.
- Write a linear equation for cost and another for profit. (Use slope-intercept form)
- Create linear graphs that represent cost and profit. Let the y-axis represent \$ and the x-axis represent 20 years of production.
- Determine the point of intersection or the point at which the well becomes profitable.

## **Oil Well Information Sheet**

The typical well in Kern River Oil Field costs \$100,000 to complete and roughly \$10,000 per year to maintain. The typical well produces 20 barrels of oil per day. (You will need to convert this to barrels per year.) The current price for oil is approximately \$25 per barrel; however, only \$15 per barrel is actual profit.