

Lesson Plan -- Our Need for Oil

Grade Level -- Three

Teacher -- Thomas Nolte

Purpose -- Students will appreciate the many impacts/uses of oil in our everyday lives

Objectives --

1. Students will be able to identify/list eight commonly used petroleum-based products
2. Students will be able to explain the basic stages of "gasoline" from crude oil formation to use in internal combustion engines

Given-- students understand the terms: petroleum, derrick, pump, energy and power

Anticipatory set -- (basic questions/discussion format) --

Did anyone have a hot breakfast this morning?

What was used to cook your breakfast?

Electric stove?

Gas stove?

Conclusion -- heat energy is often used to prepare food before consumption

Who walked or bicycled to school today?

Who rode in a car or bus to school?

Conclusion: energy is needed to move things from one place to another.

Where does electricity come from?

Where does natural gas and automobile gasoline come from?

Conclusion -- from crude oil

Procedure -

1. Vials of crude oil are distributed for individual student observation. Those waiting will color and label simplified sketches of an oil derrick and a sucker rod pump
2. During above step discussion of:
 - a. where crude oil is found
 - b. how crude oil is formed
 - c. how crude is extracted from underground
 - d. transportation to refinery
 - e. what takes place at refinery, fractioning
 - f. distribution to gas stations and then automobiles

3. Writing/drawing activity

Teacher creates flow chart(upstream-downstream) of above process on large poster or chalkboard; and students make their own flow charts at their desks.

4. Reinforcement

Demonstration: evaporation and condensation of different liquids

5. Scavenger hunt for oil based products in-class possibilities:

ball point pen
hair brush, comb
umbrella
yarn
football
balloon
trash bag
hand lotion
crayon
scarf, cap, glove
permanent press ...
lego pieces
ice bucket

roller skate wheels
credit card
golf ball
glue
linoleum
plastic wood
dice
bicycle helmet
transparent tape
purse
cassettes
petroleum jelly

outside possibilities:

asphalt
luggage

tires
vitamin capsules

6. Discussion/closure -- We depend on many oil-based products

Evaluation -- Students fill in blanks in a "close" activity
Students write a paragraph that summarizes this lesson

Extension possibilities --

videos: Kern County Oil - the First 100 Years

"Fuel-Less" - You Can't Be Cool Without Fuel

Cogeneration...A California Success Story experiment using different types (viscosities)

lubricants