Getting the Oil Out

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Lab Worksheet

PRIMARY STUDENTS

BACKGROUND

Oil, natural gas and saltwater are under extreme pressure below the surface trapped in reservoir rock. These materials can flow up a well with or without assistance, depending on the properties of the well.

This activity demonstrates how artificial lift systems are used to help pull the oil out of the reservoir rock and pump it up the well.

QUESTION

How is oil recovered from a rock formation?

MATERIALS

- ❑ 8–10 drinking straws
- ❑ Masking tape
- ❑ Scissors
- ❑ Small cups
- ❑ Choose two liquids to compare: dark soda*, chocolate syrup*, chocolate milk, pancake syrup or honey

**preferred to demonstrate viscosity of liquids*

INSTRUCTIONS

1. Using the scissors, cut a 1 centimeter slit at one end of each straw.
2. Join the straws end to end to form one long tube. Place the slit end of the straw into the inside of the adjoining straw.
3. Place masking tape over each connected end to secure the joint and create an airtight seal.
4. Place the cup of soda on the floor first. Insert the extended straw "tubing" into the cup. Try to bring the liquid to the top of the "tubing" using suction.
5. Now, decrease the number of straws used for the "tubing". Same student tries to bring the liquid to the top.
6. Repeat step 5 with the cup of second liquid.

CONCLUSIONS

1. Which length of straw required the most effort to bring the liquid to the top? Which length of straw required the least effort to bring the liquid to the top?

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2. Does the length of the straw "tubing" make a difference in the amount of suction needed to lift the chocolate milk?

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3. As a group, discuss and decide what kind of equipment we would need to lift oil from rock 7,500 feet (2,286 meters) below the earth's surface.

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