

PRIMARY

Sedimentation Bottle

Materials



Empty plastic bottle with cap



Water



Various types of soil

Activity



1. Pour soil and water in the empty bottle.



2. Close the bottle tightly.



3. Shake the bottle several times.



4. Observe what happens next.

Explanation

When you stop shaking, the sediments will settle down slowly. Time by time, a thin layer of soil will develop. The various types of soil will settle down to the bottom of the bottle because of gravity. As they went down, the heaviest sediment will settle first followed by lighter ones. Some rocks on earth are formed by sedimentation. We call these “sedimentation rocks.” Most oil can possibly be found in these rocks.

INTERMEDIATE

Density Bottle

Materials



Empty plastic bottle with cap



Water (You can add food coloring to make it fun!)



Cooking Oil



Honey

Activity



1. Fill up the bottle with equal parts of water, oil, and honey until it is full. Close the cap tightly on the bottle.



2. Move the bottle upside down and observe what is happening between the oil, honey, and water.

Explanation

When the bottle is moving upside down, the water will be at the top of the bottom. Quickly, the water will go down and oil will go up. In a reservoir, gas will be at the top, oil will be under the gas, and water will be below oil. This is because of the difference in density.

SECONDARY

Pressure Bottle

Materials



Empty plastic bottle with cap



Water



Condiment packet (soy sauce, ketchup, etc.)



Glass or cup

Activity



1. Fill the glass with water and drop in your packet. Choose the best packets to use for the activity. The best ones are those that barely float.



2. Fill the bottle to the top with water, slip in your unopened condiment packet, and close the lid tightly.



3. Squeeze the bottle to make the condiment packet sink, and release to make it rise. Vary how hard you squeeze the bottle. You will find that the harder you squeeze, the faster the packet will dive to the bottom.

Explanation

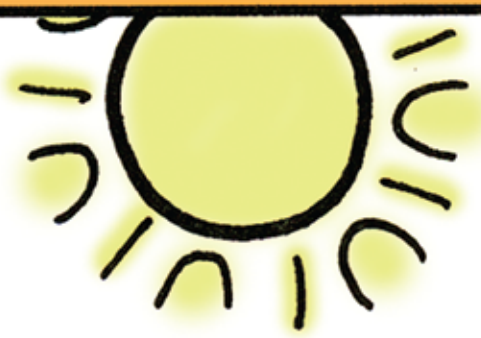
The experiment illustrates that compression reduces the surface area of a compressible material while increasing the material's density (gas molecules in our industry), and, therefore, its buoyancy. When pressure is released, the gas molecules expand, producing more surface area and reducing gas density. The result is that they become more buoyant and rise to the top of the fluid. This is what happens in a solution gas drive reservoir as the pressure declines and a gas cap is created. It also applies to oil and gas separation technology.

The best illustration is what happens when you open a carbonated soft drink and the gas fizzes out as the pressure is released.

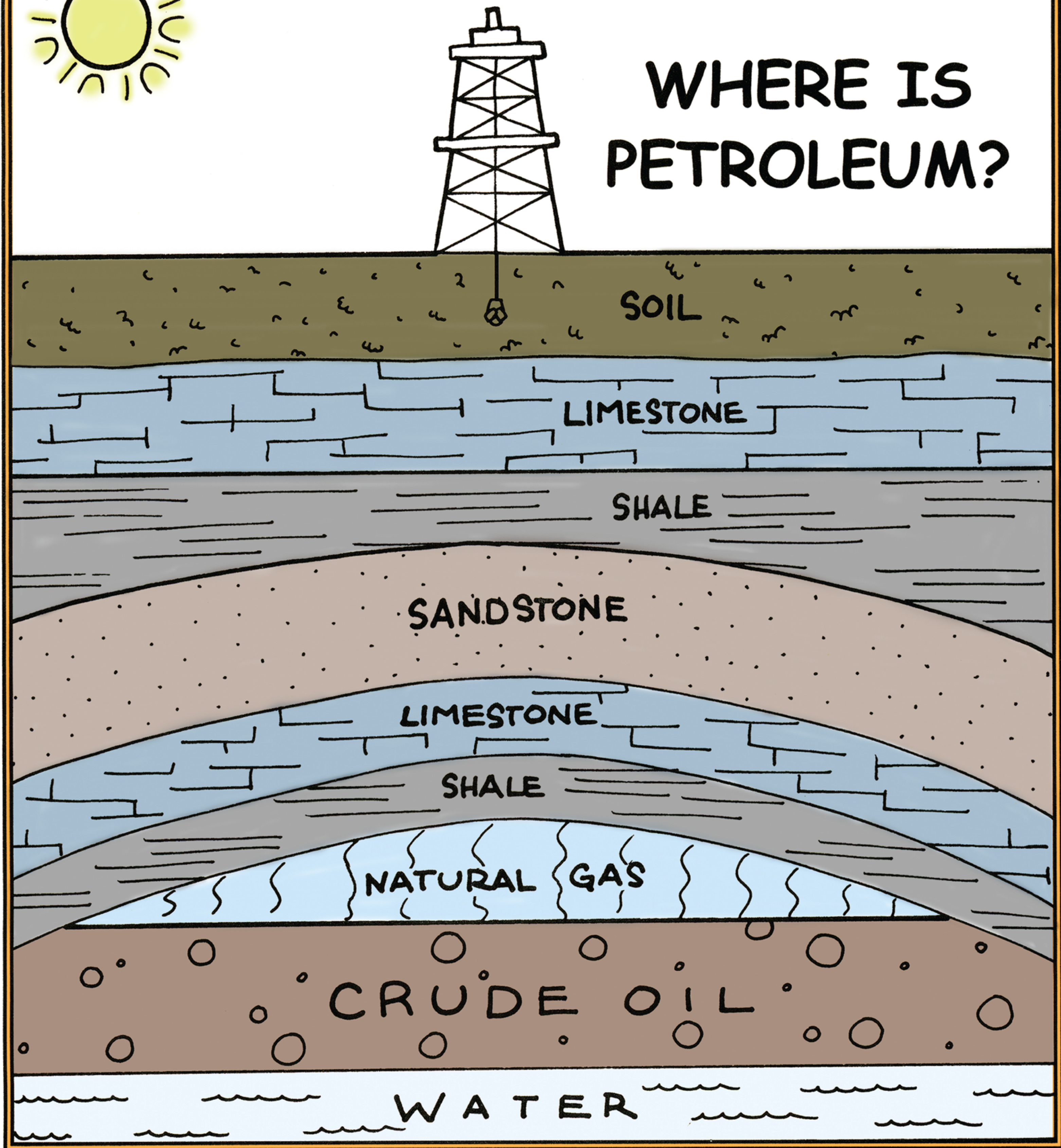


For these and more resources and fun classroom activities, look on the enclosed CD or visit www.energy4me.org.

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WHERE IS PETROLEUM?



Petroleum is trapped in *rock formations* deep inside the Earth. The *porous rock* holds *oil* and *natural gas* like a sponge holds water.