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Formation

of Natural Gas and Oil

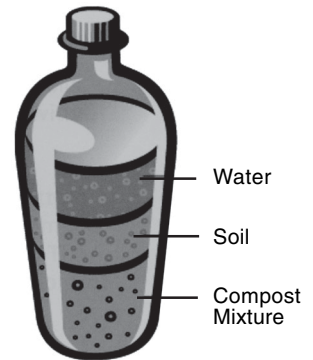
Experiment

Biotic Materials: Making Crude Oil

Create a model of how the decomposition of living matter can create the element carbon that is involved in the formation of oil.

Materials:

- Clear plastic one-liter soft drink bottle
- One dowel rod
- Funnel
- Dry soil from a garden
- Pond or creek water
- One hard-boiled egg (2 gm shell and one yolk)
- 10 x 15 cm piece of newspaper, shredded
- Metric ruler
- Masking tape to seal and label bottle



Procedure:

1. Remove any stones or twigs from soil.
2. Prepare a compost mixture by combining shredded newspaper (organic), egg shells (carbonate) and egg yolk (sulfate) with a handful of soil.
3. Use the dowel rod to pack the compost mixture in the bottom of the bottle and remove trapped air. This compacted bottom layer should be about 3 cm deep.
4. Add soil to the bottle using the dowel rod to compact it and remove the trapped air. This compacted layer should be within 5 cm from the top of the bottle.

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Experiment, Continued

Biotic Materials: Making Crude Oil

5. Cover the surface of the soil with pond water, filling to the lower threads of the bottle opening.
6. Seal the top of the bottle tightly and place in a window that receives indirect sunlight.
7. Observe the bottle weekly for a minimum of three months recording observations.

Note: Gas will need to be released as time passes. Remove the lid outside to avoid strong odor. Direct top of bottle away from face when opening.

Questions and Explanations:

1. What is happening inside the bottle?
2. What kind of bacteria is being produced and why?
3. Are soil and water lifeless parts of the ecosystem?
What is biogenesis?
4. What would happen if the bottle was subjected to increased temperature? Decreased temperature?

Reflection:

1. How does this system relate to oil and natural gas formation?
2. Could science create petroleum and natural gas?