



Credit: Corbis

Sandy layers

This activity will reinforce the idea that fossil fuels were formed over millions of years in a build-up of layers beneath the Earth's surface.

You will need

- Coloured sand (up to six different colours)
- Old spice jar (with labels removed)
- Paper
- Coloured pencils
- Newspaper

Steps

1 Discuss how living things die and rot in the ground. Mention weather, decomposing and getting buried. The deeper down into the Earth you go, the higher the temperature and the more pressure or weight you are under.

Over millions of years dead matter gets cooked and crushed under layers of earth and rock, eventually becoming fossil fuels like oil and coal. You could watch the animations showing how oil, coal and gas are formed on the Energy Info Zone Website.

2 Draw a picture showing layers of different materials beneath the Earth's surface. Design layers of different thicknesses and shades with the coloured pencils on paper. Try not to use more than six layers.

3 Take an empty, clean spice jar.

4 Choose your first sand colour and gently tip the first layer into the jar. Tap the jar to settle the sand.

5 Repeat the above, using different colours each time, until your jar is full. Try to make the layers in the jar look like your picture.

6 Take a long thin object, such as a pencil, and gently push it into the sand. Make sure the pencil is near the edge of the jar so you can see it pass through the layers of sand.

7 Close the lid and compare your layered sand in a bottle with your picture and with your friends' pictures.

Analysis/ discussion

The layers of sand represent the different layers of rock beneath the Earth's surface. Fossil fuels (oil, coal or gas) are formed in layers deep below the surface over millions of years. Decide in which layer in your jar you could imagine oil, coal or gas being formed. Discuss how you would get it out. (Clues: Could you dig that far down? What tools would you need? Would a long pipe come in handy?)

The Earth's surface is constantly moving and changing, so the layers will hardly ever be in a straight line and it's hard to know exactly where the fossil fuels are buried. Poking the pencil into your jar has broken up the straight layers to make them more realistic. Try breaking up more layers, but do it carefully or the sand will mix up and you'll have a jar of brown sand.