



Density Layers in Earth

Earth was formed by accretion of rocky matter in the planetary disc around the mass that became the Sun. As rocky particles crashed together, kinetic energy was transformed to heat energy, melting the rock. The molten mass of Earth separated into the density layers that we see today in the core, mantle and crust. The effect of gravity pulled denser material to the centre and left the least dense to the outside of the forming planet.



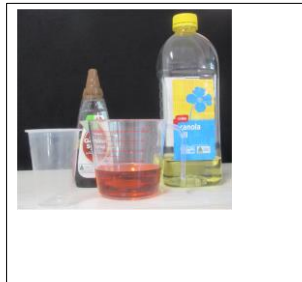
Earth formed as rocky particles crashed together due to gravity.

Aim

To observe density layers

Materials

- Golden syrup
- Vegetable oil
- Water (colouring optional)
- Glass or beaker



Method

1. Add golden syrup, water and oil to glass
2. Observe and record results

Option: Watch this experiment in the [Density Layers video](#) on Aus EarthEd YouTube

Commented [MR1]: Create links once uploaded



Results

1. Draw a labelled diagram of your result in the box.
2. Describe what happened when the liquids mixed as you added them to the glass.

Results

1. If your results represented the Earth, which layer is represented by each liquid? _____

2. Would this experiment work with solids of different densities? Explain your answer. _____

3. If you mixed solid with the liquids, would that result in density layers? _____

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Extension

- Design your own procedure to calculate the density of each liquid.
- Calculate the density of another liquid and predict where it would end up in your density layers. Test your prediction but beware of solubility!
- Find a solid with a density between that of two of your liquid layers. Add it to the glass and test your prediction.

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