



Density of Liquids

Overview

What type of liquid is the densest?

The density of an object is how closely the material within is packed into a certain space. For example, a one-centimeter steel ball has more material in it than a one-centimeter piece of cork. We can say then that steel is denser than cork. Wood is less dense than water because it has less material in it compared to an identical amount of water. When comparing the density of two objects, we must always compare the same sized pieces. Can a piece of cork weigh more than steel? If it is big enough, a huge piece of cork weighs more than a small piece of steel. But such comparisons of different-sized objects involve weight, not density. The amount of mass for every cubic centimeter is called density.

Completion Time

30 Minutes

Materials

- One baby food jar with colored water
- One baby food jar with cooking oil
- One baby food jar with molasses or syrup
- One empty baby food jar

Prediction

On your record sheet, predict the order of density of the following liquids from least dense to most dense: colored water, cooking oil, molasses or syrup.

Procedure

1. Examine each liquid. Write down your observations of each sample on the record sheet.
2. Very slowly, pour each liquid into the empty jar. Try not to let them mix together. If you pour the liquids along the side of the jar, it will not mix as much. Wait three minutes.

Results

On your record sheet, record the order, from top to bottom, of the different liquids as they appear in the jar.

Conclusions

Answer the following questions on your record sheet:

1. What was the order of the density of the liquids you tested?
2. If you placed a rock into the liquids, in which layer do you think it would stop? Explain your answer.





Density of Liquids

Question

What type of liquid is the densest?

Prediction

Predict the order of density of the following liquids from least dense to densest

___ Colored water

___ Cooking oil

___ Molasses or syrup

Results

Record the order, from top to bottom, of the different liquids as they appear in the jar.

Conclusions

What was the order of the density of the liquids you tested?

Question

If you placed a rock into the liquids, in which layer do you think it would stop? Explain your answer.