

# Daily Review

The **first step before** we can begin any **separation** is to what properties the materials might have that is different.



**What properties are different between these 2 substances?**

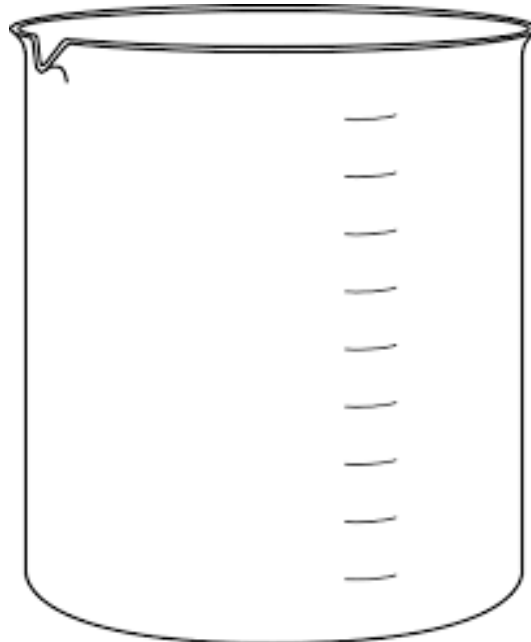
**What kind of technique would you use to separate these two items?**

## Daily Review

A **suspension** is a mixture of two substances, in which a solid is undissolved in a liquid.  
E.g. Seaweed and the Ocean.

What is another example of a suspension?

In the beaker below, please draw what a suspension mixture would look like after it has been given time to sit.



## 2<sup>nd</sup> Separation Technique: Decanting

# Learning Objective

We will learn how to separate suspension mixtures using decanting.

## Activate Prior Knowledge



You are at the beach and you are making a sand castle.



You collect the wet sand, by scooping up the sand and water into a bucket.



You pour the water from the bucket out carefully, making sure the sand stays at the bottom.

## Vocabulary

Decanting – pouring of liquid to separate the sediment from the liquid.

## CFU

What are we going to learn?

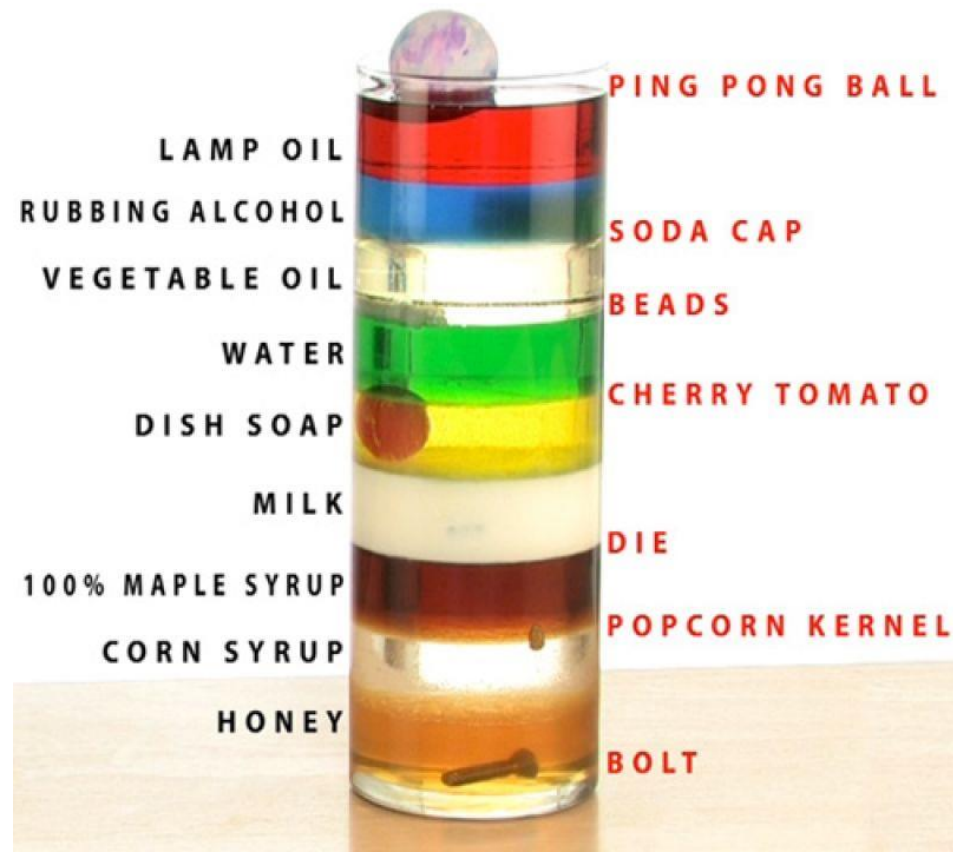
# Concept Development

Before we begin, we must determine what physical property is different between each substance, to know which technique to use.

**Decanting** focuses on the physical property – *density*.

Oil is *less* dense than water, hence it stays above the water.

Dirt is *more* dense than water, so it sinks to the bottom of the glass.



## CFU 1

If we mix, oil and water , or sand and water, what is going to happen?

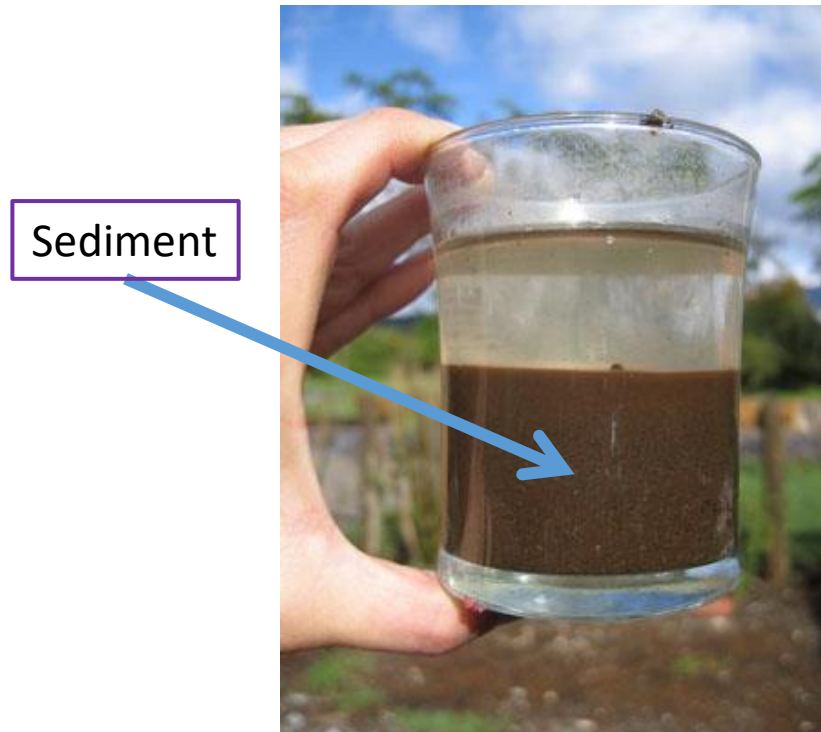
What is the name of the physical property that makes them stay separate?

## Vocabulary

*Density* – how closely packed together the particles are in an object.

# Concept Development

**Decanting** is used when there are two distinct layers in the suspension mixture.



Sediment

Dirt and Water



Flotation

Oil and Water

## CFU 1

When you would use decanting as a separation technique?

*I would use decanting...*

## CFU 2

When you add the solute to the solvent, if the solute is insoluble and sinks to the bottom, it is called what?

- A) Flotation
- B) Sediment

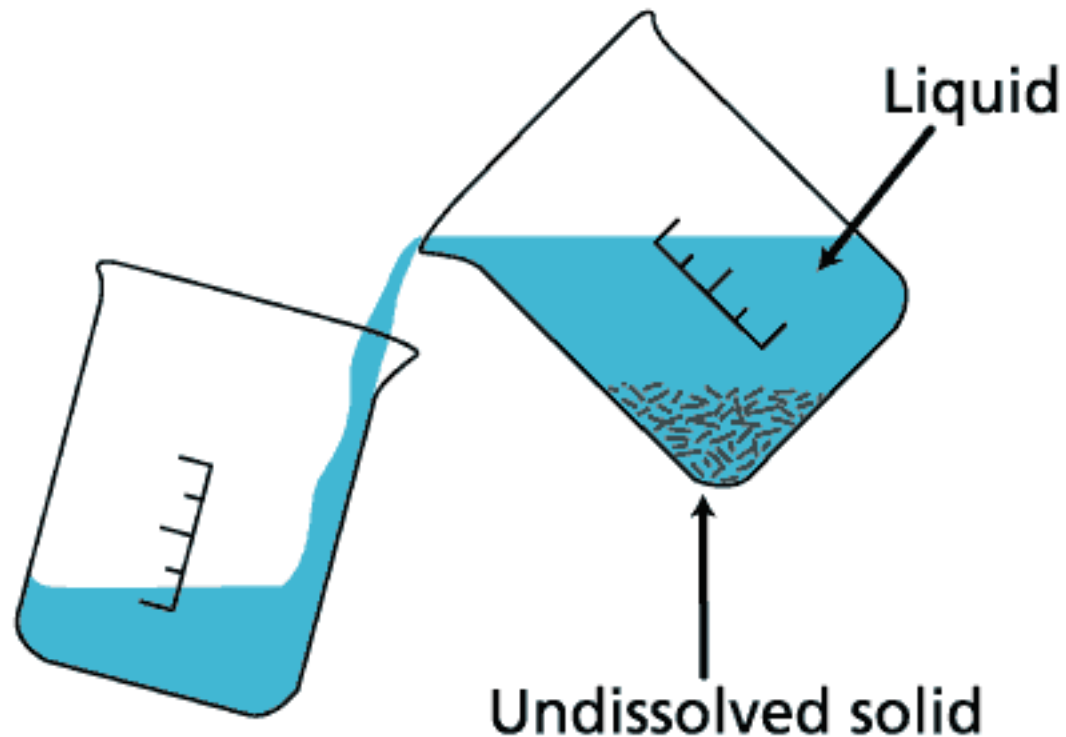
# Skill Development/Guided Practice

To separate a suspension mixture, using decantation we follow the following steps:

**Step 1:** Mix the insoluble solute into the beaker that contains the solvent

**Step 2:** Let the mixture rest, until you can see two separate layers

**Step 3:** Slowly pour off the top layer into another beaker



## CFU 1

What equipment will you need to collect:

## CFU 2

What solute will you use to practice your decanting:

What is the solvent?



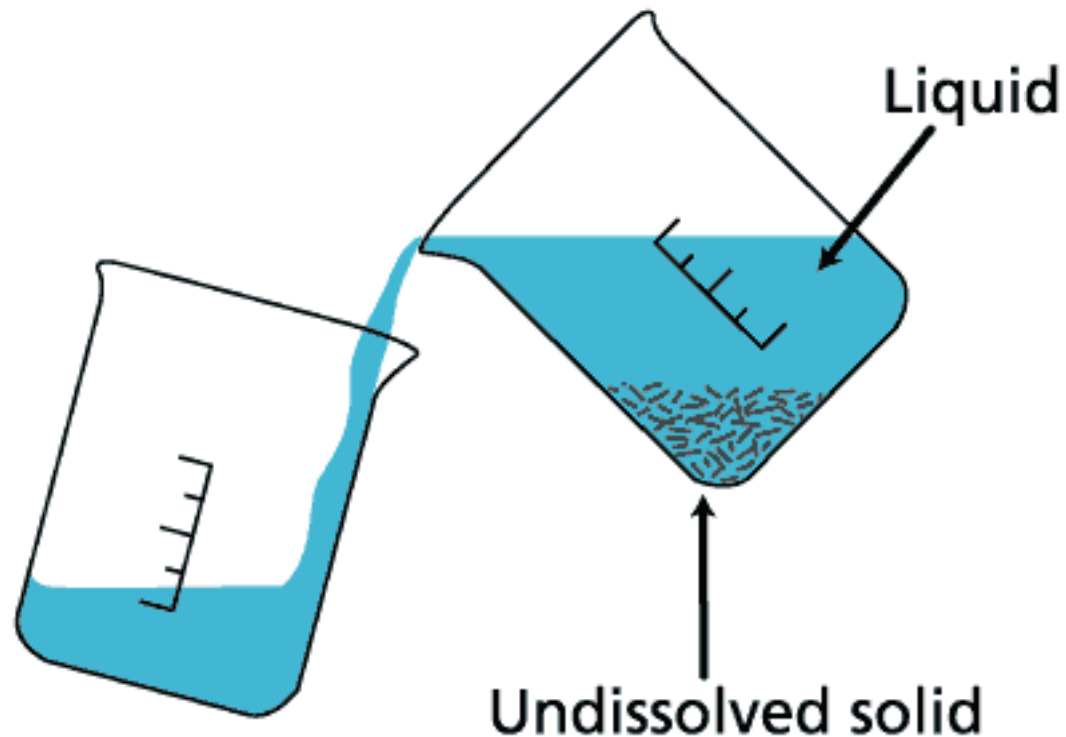
# Independent Practice

To separate a suspension mixture, using decantation we follow the following steps:

**Step 1:** Mix the insoluble solute into the beaker that contains the solvent

**Step 2:** Let the mixture rest, until you can see two separate layers

**Step 3:** Slowly pour off the top layer into another beaker



## CFU 1

What equipment will you need to collect:

## CFU 2

What solute will you use to practice your decanting:

What is the solvent?



# Relevance

We use this technique, not only in the kitchen, but also in the treatment of water from sewage.

# Skill Closure

**Decanting** involves letting a suspension settle so that the more *dense* component separates naturally with gravity to the bottom of the beaker. The less *dense* top layer is then gently poured off.

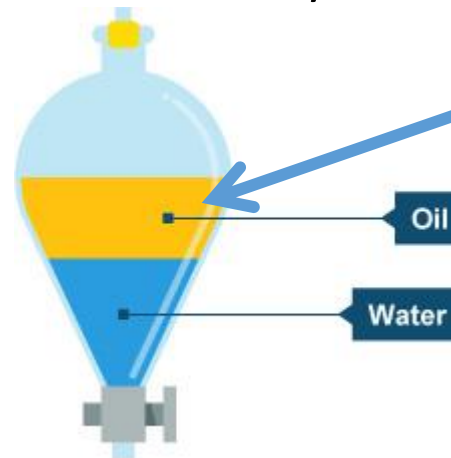
It is suitable to use decanting when there are two distinct layers.



Sediment



Flotation



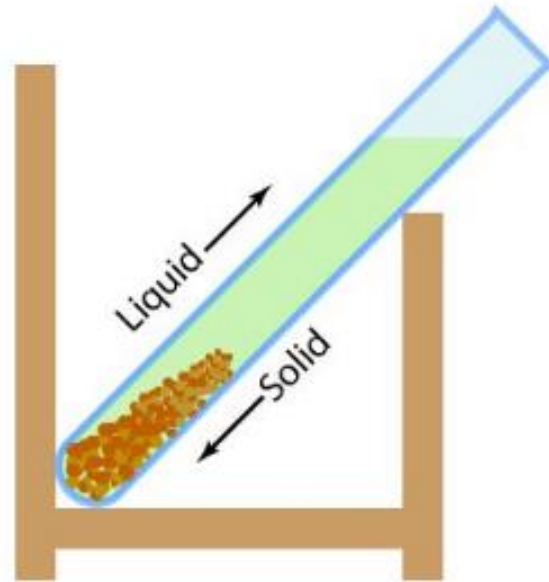
## Reminder:

To follow these steps:

- 1 – Mix together
- 2 – Let the mixture rest, until you see two distinct layers
- 3 – Slowly pour the top layer off the mixture

# Concept Development

Decanting - involves letting a suspension settle so that the more *dense* component separates naturally with gravity to the bottom of the beaker. The less *dense* top layer is then gently poured off.



## CFU 1

If we mix, oil and water , or sand and water, what is going to happen?

What is the name of the physical property that makes them stay separate?

## Vocabulary

*Density* – how closely packed together the particles are in an object.