

# HOMework BOOKLET

**Year 8 Term 3**

# Germs and Diseases

Homework 1

I know the symptoms of some common diseases caused by germs. I can explain how they are spread and discuss how some methods of preventing and treating disease benefit society. SCN 1-13a

Fill in the missing words to complete the text about a germs and diseases.

germs	flu	virus	microscope
hands	organisms	water	chickenpox
rash	mouths	sneezes	temperature

Germs are tiny \_\_\_\_\_ that can only be seen through a \_\_\_\_\_. There are four main types of \_\_\_\_\_: bacteria, viruses, fungi and protozoa.

Many germs are passed from person to person by touch or through coughs and \_\_\_\_\_. To prevent the spread of disease, it is very important that we wash our \_\_\_\_\_ thoroughly and cover our \_\_\_\_\_ when we cough or sneeze.

Influenza, more commonly known as \_\_\_\_\_, is a very common \_\_\_\_\_. Symptoms of this illness include a high \_\_\_\_\_, aches and pains, a sore throat, a cough, a headache and a runny nose. If you get influenza, you should get lots of rest, drink plenty of \_\_\_\_\_ and take some painkillers.

Another common virus that mainly affects children is \_\_\_\_\_. The symptoms of this illness include a high temperature, an itchy \_\_\_\_\_, loss of appetite, sore muscles and a headache. If you get chickenpox, you should drink plenty of water and rub cooling gel on the rash.



# Infectious Diseases Match and Draw

Draw a line to match the keyword with its meaning

Homework 1

**pathogen**

A bacterial infection causing diarrhoea and dehydration.

**cholera**

A disease affecting the brain and kidneys, spread by mosquitoes.

**salmonella**

Caused by an airborne virus spread by people coughing and sneezing.

**influenza virus**

Microorganisms which cause infectious diseases, including bacteria, fungi, virus and protozoa.

**athlete's foot**

Bacteria which causes food poisoning.

**HIV**

Virus spread through bodily fluids that causes aids.

**vector**

A disease which causes severe diarrhoea. The bacteria is spread by the house fly.

**dysentery**

A fungus which makes the skin itch and flake off.

**malaria**

An animal that spreads disease.



# Immunity and Vaccination Match and Draw

Homework 2

Draw a line to match the keyword with its meaning

**physical defences**

E.g. saliva, stomach acid, and tears.

**chemical barriers**

E.g. skin, eye lashes and pubic hair.

**immune system**

The organs and processes of the body that provide resistance to infection and toxins.

**white blood cells**

A microorganism which causes disease.

**microbe**

The main component of the immune system.

**antibodies**

Markers displayed on microbes and foreign cells.

**antigens**

Administration of an antigen to stimulate an immune response.

**vaccination**

Chemicals produced by the immune system in response to antigens.

**antibiotics**

Type of medicine which prevents the growth of or kills a microorganism.

## Vaccinations

Rearrange the sentences to show how vaccinations work.

- A. Immunity has now been formed
- B. Weak or inactive microbes are injected into the body
- C. Antibodies stay in the blood to fight any future infections
- D. The white blood cells spot the microbes and produce antibodies to destroy them

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# The Dangers of Alcohol Misuse

Look at this image of the human body and its organs. Think about what you know about the dangers of alcohol misuse and how it affects the human body. Copy the cards below and write them next to the correct organs in the body to label the diagram.

The diagram shows a human figure with internal organs highlighted. Lines connect the following areas to empty boxes for labeling:

- Brain (top of head)
- Heart (center chest)
- Lungs (left and right chest)
- Stomach (upper abdomen)
- Liver (right side of upper abdomen)
- Intestines (lower abdomen)
- Bladder (lower pelvic region)
- Arms (left and right)
- Legs (left and right)

# The Dangers of Alcohol Misuse

Homework 3

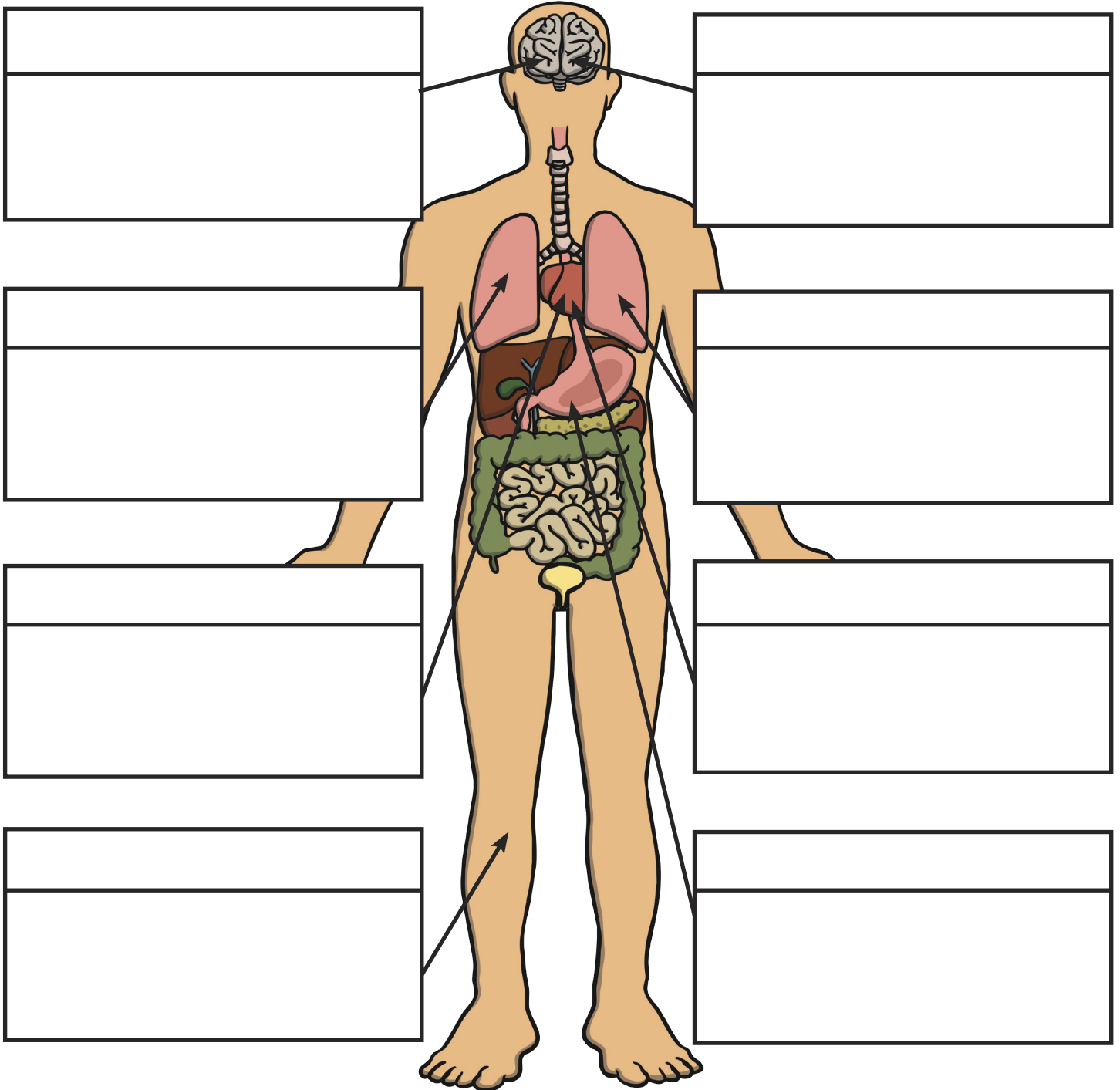
<b>Brain</b> <small>twinkl.com</small>	<b>Brain</b> <small>twinkl.com</small>	<b>Liver</b> <small>twinkl.com</small>	<b>Liver</b> <small>twinkl.com</small>
<b>Heart</b> <small>twinkl.com</small>	<b>Intestines</b> <small>twinkl.com</small>	<b>Kidneys</b> <small>twinkl.com</small>	

<p>Alcohol misuse could leave you with impaired senses, meaning it can affect your sight, hearing and smell.</p> <p>Long term heavy drinking can lead to an illness called cirrhosis.</p>	<p>Can lead to the early onset of dementia.</p> <p>Drinking too much increases the chance of having a heart attack or stroke.</p> <p>This organ can experience irritation of the lining and can be at risk of certain types of cancer.</p>	<p>Excessive alcohol consumption can leave this organ inflamed, swollen and painful.</p> <p>Too much alcohol can stop this organ from effectively filtering the blood.</p>
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# The Dangers of Smoking Homework 3

Look at the image of the human body and its organs. Think about what you know about the dangers of smoking and how it affects the human body. Copy the cards that show the effects smoking has on the body and write them next to the correct organ to label the diagram.



Can you think of an effective health warning to print onto cigarette packets to try and encourage people to quit smoking? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Nicotine causes this organ to create adrenaline and make a person feel relaxed.

Chemicals within smoke can cause this organ to look older.

Smoking can cause conditions such as emphysema and cancer in these breathing organs.

When a person smokes, adrenaline causes this organ to work harder to pump more oxygen around the blood stream.

Smoking can cause ulcers, which can cause problems with digestion in this major organ.

Smokers can be in danger of suffering from a stroke, where this organs blood supply is cut off.

Smoking can cause tar to collect in these organs, which causes breathing difficulties.

Carbon monoxide affects this organ by blocking blood vessels.

brain

brain

heart

heart

skin

lung

lungs

stomach



# Compounds and Mixtures

## Homework 4

A compound is a substance made when two or more elements are chemically bonded together.

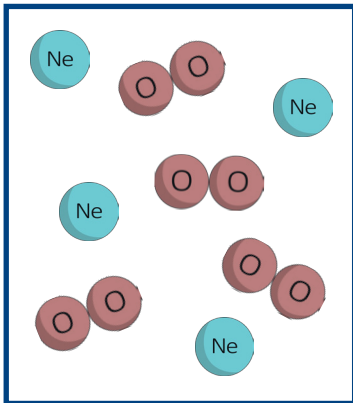
A compound can be represented by a diagram. The atoms are shown touching each other or joined by a stick that represents a bond.



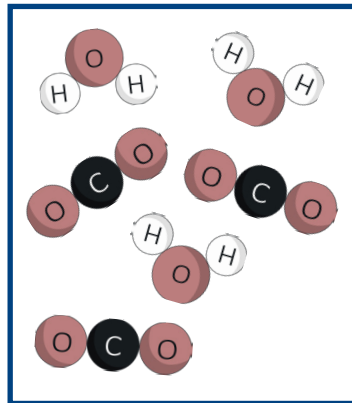
A mixture is a substance consisting of two or more substances not chemically combined together.

In a diagram of a mixture, not all of the molecules shown will be touching each other or be joined by sticks representing the bonds.

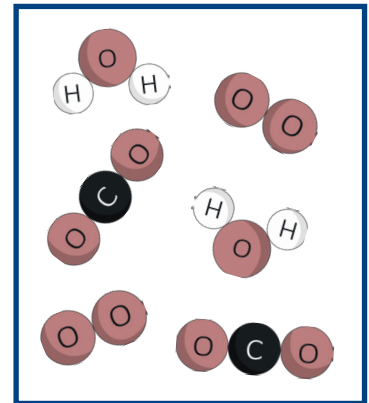
You can have mixtures of elements, mixtures of compounds or mixtures containing both.



mixture of elements



mixture of compounds

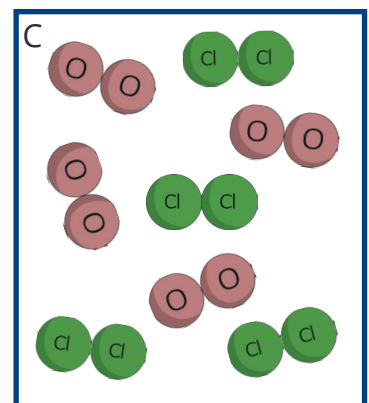
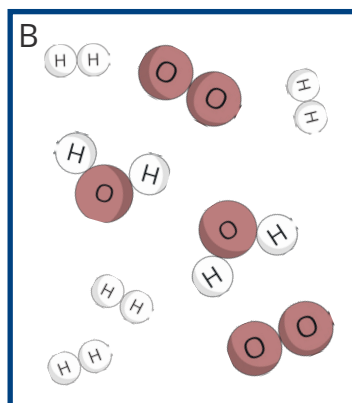
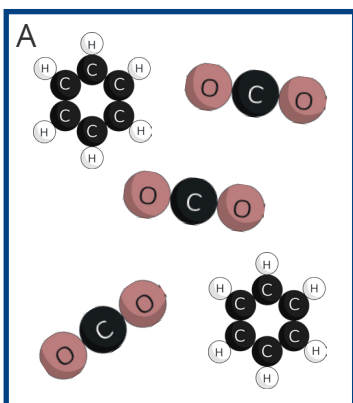


mixture of elements and compounds

1. Three mixtures are shown in the diagram below. Which mixtures contain compounds?

A  B  C

2. Underneath each diagram, say whether each mixture is made of elements, compounds or both.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



There are differences between compounds and mixtures.

Compound	Mixture
The different elements are chemically joined together.	The different substances are not chemically joined together.
The substance has different properties to the elements it is made from.	Each substance keeps its own properties.
The elements can only be separated using chemical reactions.	Each substance can be separated easily using separating techniques like filtration, distillation, evaporation and chromatography.
You cannot vary the amount of each element. So, the compound water always has one oxygen atom and two hydrogen atoms per molecule.	You can vary the amount of each substance. So, you can add a teaspoon of salt to water, or a cup of salt to water and it would still be a mixture of salt water.

A teacher carries out the following demonstration:

- They fill a beaker with 100ml water.
- They add 4 teaspoons of sugar to the water and stir until the sugar has dissolved.
- They add one more teaspoon of sugar and stir until it has dissolved.
- They heat the beaker of water over a Bunsen burner until all of the water has evaporated.
- They show students the sugar crystals left in the bottom of the beaker.

3. Give **two** pieces of evidence from the demonstration that the sugar and water is a **mixture**.

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

A teacher carries out the following demonstration:

- They test a strip of magnesium ribbon in a circuit and a bulb lights up.
- They heat the strip of magnesium ribbon in oxygen.
- The magnesium burns with a bright white flame and when the reaction is finished a white powder is left.
- They test the white powder in the circuit, and it does not conduct electricity.

4. Give **two** pieces of evidence from the demonstration that the magnesium and oxygen form a **compound**.

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_



# Separation Techniques **Test Yourself 1**

Homework 4

## Word Search

o e j c a s u e l z g e p s h  
i f t v q e a x g l d i e o a  
h i d u q k q t r c b n q l j  
b s w o l a i t u y a j g u k  
t n e v l o s d t r i u t t l  
l j g h e u s i o h a t h i l  
o k i n s o l u b l e t k o g  
r p r j l i f v p u m m e n f  
k n y u b l d e y d k o g d y  
b x b u q s e k w e n j e r x  
v l l z e e c n t w t i c w z  
e o j h q t u y e v t o w m s  
s z x w q j p i s e l f f o v  
s t v n h n m b u a z n m y m  
q u h y y p s l l q i u e g j

insoluble

solute

saturated

solution

solubility

solvent

soluble



## Rock Salt

Rock salt is a mixture of rock and salt. Number the sentences **1** to **6** to describe how the salt can be separated from the pieces of roc.

The salt will dissolve.	
Pour the salt solution into an evaporating dish and heat gently.	
Add warm water to the rock salt and stir.	
Crush the rock salt using a pestle and mortar.	
The water will evaporate and the salt crystals will appear in the evaporating dish.	
Filter the mixture, the salt solution will collect in the beaker and the pieces of rock will collect in the filter paper.	

## Filtration Missing Vowels

r _ s _ d _ _	f _ l t r _ t _	_ n s _ l _ b l _	s _ l _ b l _	l _ q _ _ d
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# Separation Techniques Test Yourself 2

Homework 5

## Match and Draw

Draw **one** line from each key word to the correct definition.

solute

a mixture of the solid and liquid

solvent

a substance that will dissolve in a liquid

solution

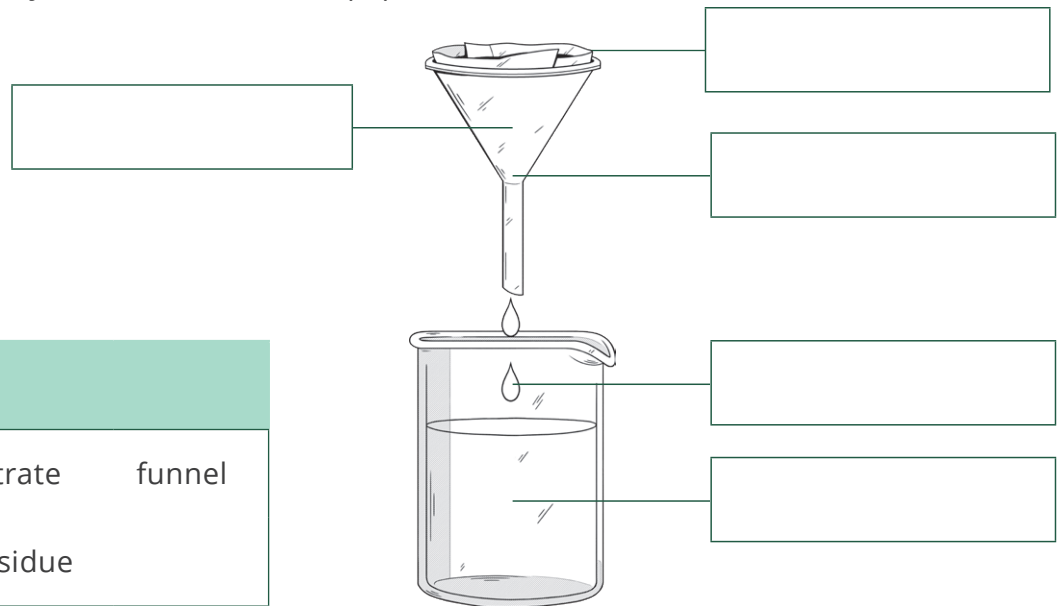
a solid that dissolves in a liquid

soluble

a liquid in which the solid dissolves

## Filtration

Use the following key words to label the equipment.



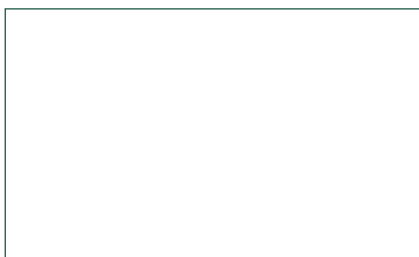
## Key Words

filter paper    filtrate    funnel

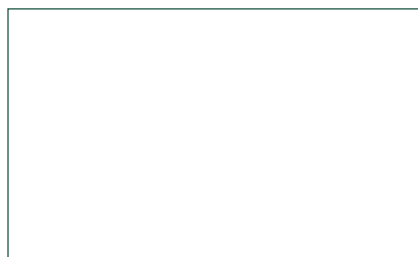
liquid    residue

## Dissolving

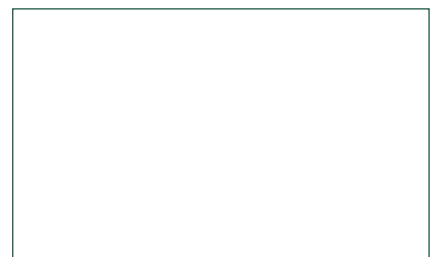
Complete the boxes below to show the particles in salt, water and saltwater.



salt



water



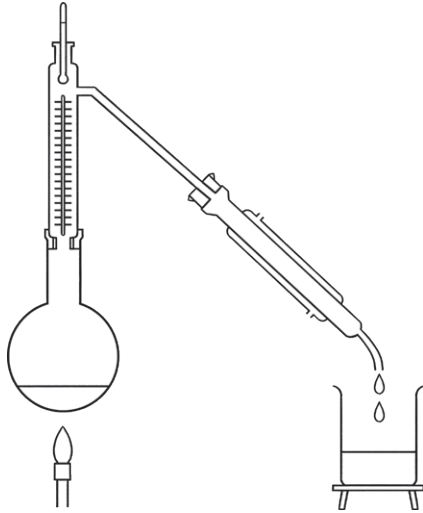
saltwater

# Separation Techniques **Test Yourself 3**

Homework 5

## Distillation

Number the sentences **1** to **5** to describe how distillation separates distilled water from saltwater.



The water starts to boil and evaporates.	
As the water vapour travels along the condenser, it cools down and condenses back into a liquid.	
The distilled water drips into the beaker.	
The saltwater is heated.	
The water vapour flows upwards and into the condenser.	

## True or False?

State whether the following statements are true or false.

Statement	True or False
Chromatography can be used by forensic scientists.	
When a substance dissolves, it is correct to say it disappears.	
A saturated solution will not allow any more solute to dissolve in it.	
Filtration will separate an insoluble substance from a soluble substance.	
Water is the only solvent.	

## Extension Question

Write a sentence to describe how temperature affects solubility.

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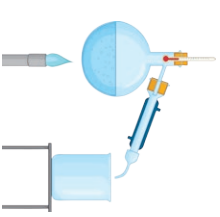
# Separating Mixtures Cut and Stick

Cut out the cards below and match them under their correct headings to complete the table.

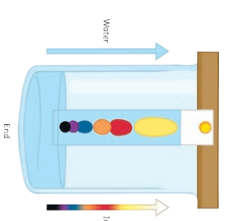
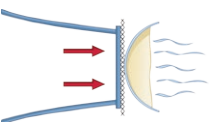
filtration

To separate out a mixture of liquid and solid, collecting both parts, e.g. pure water from ink, or sea water.

Insoluble materials won't pass through the tiny holes of the filter paper and so are separated from the soluble materials.



Different dyes in the ink can be separated as they move through the paper at different rates – they get stuck at different points based on their solubility.

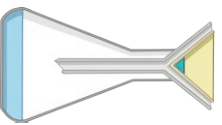


To separate out a mixture of dissolved solids from a liquid e.g. salt water (this method collects the solid only).

distillation

As the liquid is heated it will evaporate and rise. It is then cooled and returned to liquid to be collected. Any solids will remain in the flask.

The water will evaporate as steam when heated, leaving behind the soluble materials in the base of the dish.



To separate different dyes in inks.

evaporation

To separate out a mixture of soluble and insoluble solids, e.g. rock salt.

chromatography

# Separating Mixtures Cut and Stick

Name	Diagram of Equipment	Scientific Explanation	Examples of Use