

# Separation techniques practice liveworksheet

You have researched the following separation techniques:

Magnetism

Filtration

Evaporation

Distillation

Sifting

Decantation

Chromatography

Sorting

Use your research project to answer the following questions:

1) Property used for separation:

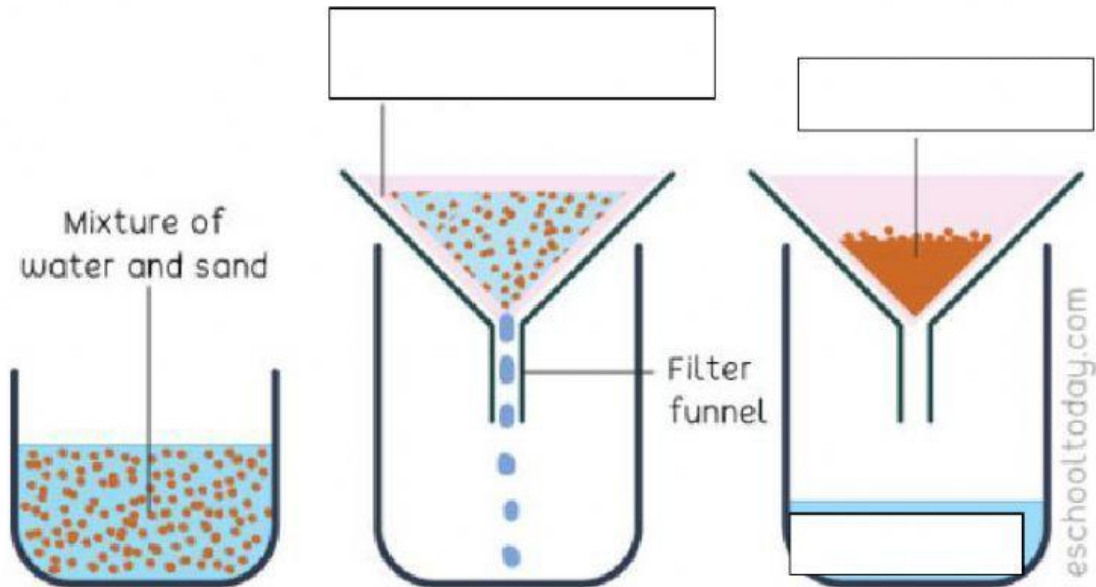
(complete the sentence by filling in the missing word)

- 1.1) For magnetic separation one substance needs to be \_\_\_\_\_
- 1.2) \_\_\_\_\_ is used to separate mixtures with different boiling points.
- 1.3) During \_\_\_\_\_ the filter paper is placed inside the funnel and then the mixture is poured into the funnel. {filtration}
- 1.4) During \_\_\_\_\_ the liquid evaporates off and the solid precipitate remains over in the evaporating dish.
- 1.5) A mixture of dyes would be separated using \_\_\_\_\_
- 1.6) When substances have different \_\_\_\_\_, a decantation is used to separate them.
- 1.7) \_\_\_\_\_ is used to separate a mixture where the particles have different sizes.

## Question 2

Label the following diagrams:

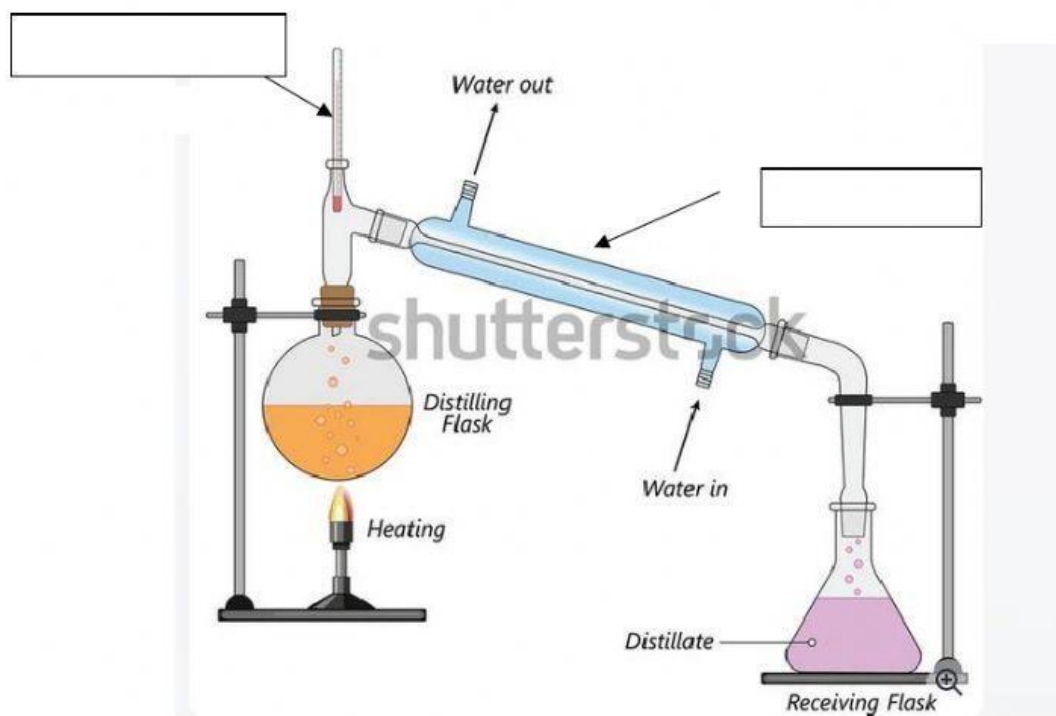
2.1)



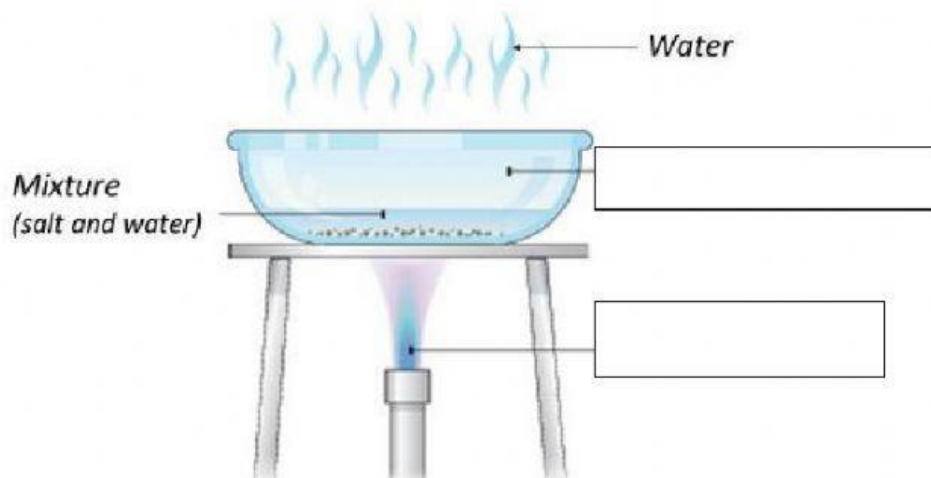
Watch the next little video on distillation before you continue:

<https://www.youtube.com/watch?v=Vz2la3947I0>

2.2) Label the following diagram:



2.3)



Before you continue, watch the video on chromatography:

<https://www.youtube.com/watch?v=TdJ57SQ6GAQ>

While I have your attention- take a look at some of these science channels that are really great!

Tyler de Witt:

<https://www.youtube.com/user/tdewitt451>

Crash course physics

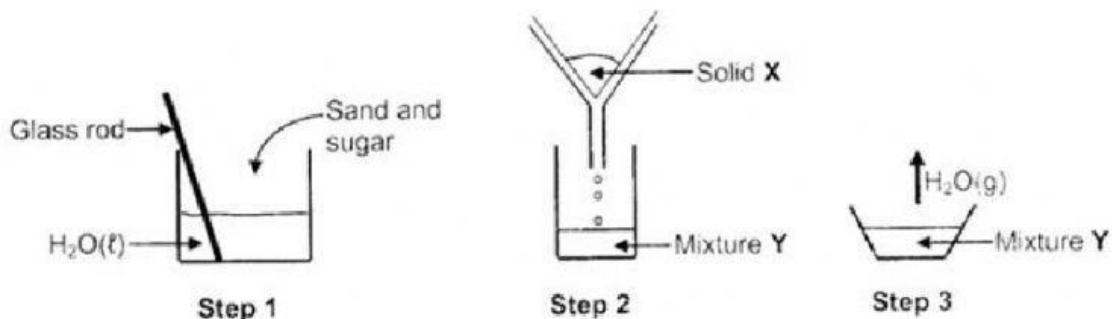
[https://www.youtube.com/watch?v=OoO5d5P0Jn4&list=PL8dPuuaLjXtN0ge7yDk\\_UA0IdZJdhwkoV](https://www.youtube.com/watch?v=OoO5d5P0Jn4&list=PL8dPuuaLjXtN0ge7yDk_UA0IdZJdhwkoV)

\*If you know of any other great you tube channel/apps please let me know 😊

Answer the following questions based on separation techniques

### Question 3

- 3.1 The learners perform an experiment to separate a mixture of sand and sugar. The experiment is done in three steps, as shown in the diagrams below.



3.1.1 Write down the name of:

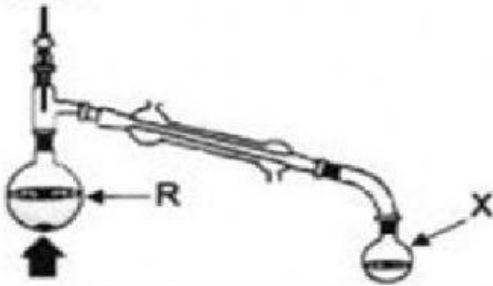
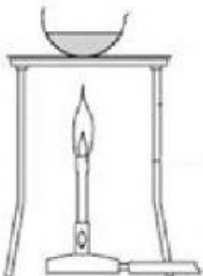
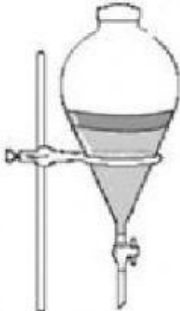
- (a) The process illustrated in **step 2**
- (b) The process illustrated in **step 3**
- (c) Solid **X**
- (d) Mixture **Y**

3.2 Which separation technique would you make use of to separate:

- 3.2.1 Air
- 3.2.2 Water and oil
- 3.2.3 Alcohol in water

## Question 4

Four methods to separate mixtures are summarised in the table below.

|                                                                                                      |                                                                                                         |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Method A</b><br> | <b>Method B</b><br>   |
| <b>Method C</b><br> | <b>Method D</b><br> |

### 4.1 Consider method **B**

4.1.1 What name is given to this method of separation?

4.1.2 What property of the substance is used to separate it?

4.1.3 Define a homogeneous mixture

4.1.3 What phase change occurs at R?

→

4.1.4 What phase change occurs at X?

→

Consider the following mixtures.

P: sodium chloride solution

Q: water and ethanol

R: water and oil

S: sulphur and iron filings

T: sand and water

4.2 Which ONE of the above mixtures (P-T) can be separated using:

4.2.1 Method A

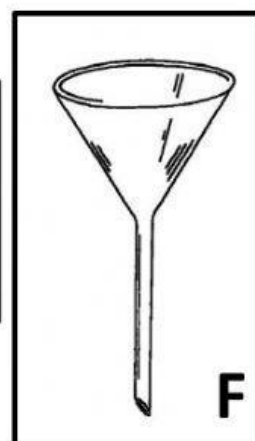
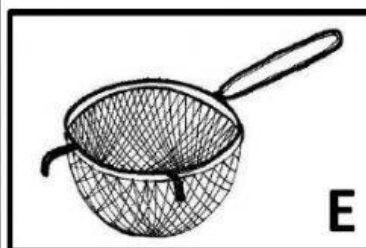
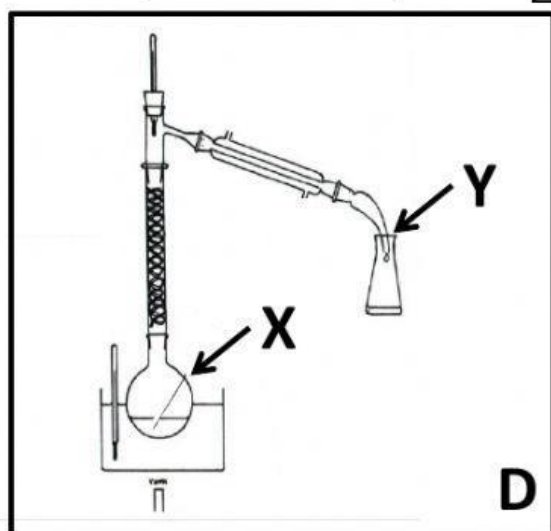
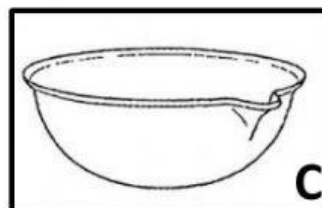
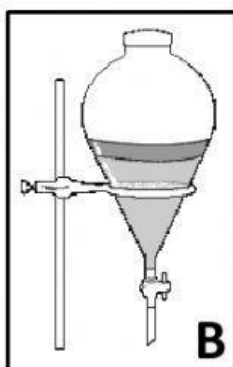
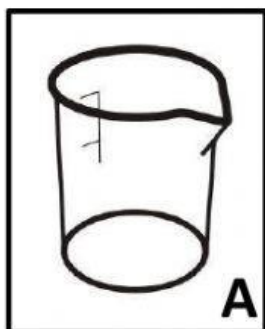
4.2.2 Method B

4.2.3 Method C

4.2.4 Method D

Question 5

Study the laboratory equipment shown below.



5.1 Give the names of the apparatus in diagrams A, B C, E and F.

- A -
- B-
- C-
- E-
- F-

5.2 Write the letter of the apparatus that one would use to separate

5.2.1 Two immiscible liquids.

5.2.2 Alcohol from water.

5.2.3 A solid from a solution.

5.2.4 Oil from water.

(4)