ODM EDUCATIONAL GROUP
Changing your Tomorrow

WELCOME TO THE ONLINE CLASS

SESSION NO.: 7
CLASS: 5
SUBJECT: SCIENCE
CHAPTER NUMBER: 12
CHAPTER NAME: OUR LIFE SUPPORT
TOPIC: REMOVAL OF SOLUBLE IMPURITIES

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LEARNING OBJECTIVE

To enable the learner to:

- **understand the importance of water.**
- **know the types of impurities.**
- **learn the ways to remove the impurities.**
- **list the uses of water in our real life.**

LET'S RECAP

About 78% of nitrogen is present in the air. It is a very vital component of air. It is inactive in nature that is why it doesn't affect us even though most of the air we breathe is nitrogen. It is a very important component for plants and is fixed and recycled naturally by some bacteria and thundering. If air does not have nitrogen, then oxygen will burn everything, that's one big blessing of nitrogen in the air. About 21% of oxygen is present in the air. It is a vital component for sustaining life on planet Earth. The rest of air is covered by other minor gases like carbon dioxide, neon, helium, krypton, hydrogen, argon and small amounts of other gases.

1. Oxygen is the most vital component for life on the Earth. But the percentage of nitrogen in the air is more than that. What do you think is the reason behind it?

Ans: Oxygen is the most vital component for life on Earth. But the percentage of nitrogen in the air is more than that. Because oxygen is a supporter of burning and if it's percentage increases then everything will start burning of its own.

LET'S RECAP

About 78% of nitrogen is present in the air. It is a very vital component of air. It is inactive in nature that is why it doesn't affect us even though most of the air we breathe is nitrogen. It is a very important component for plants and is fixed and recycled naturally by some bacteria and thundering. If air does not have nitrogen, then oxygen will burn everything, that's one big blessing of nitrogen in the air. About 21% of oxygen is present in the air. It is a vital component for sustaining life on planet Earth. The rest of air is covered by other minor gases like carbon dioxide, neon, helium, krypton, hydrogen, argon and small amounts of other gases.

2. Write one of the importance of nitrogen in the air.

Ans: It is inactive in nature that is why it doesn't affect us even though most of the air we breathe is nitrogen. It is a very important component for plants and is fixed and recycled.

LET'S RECAP

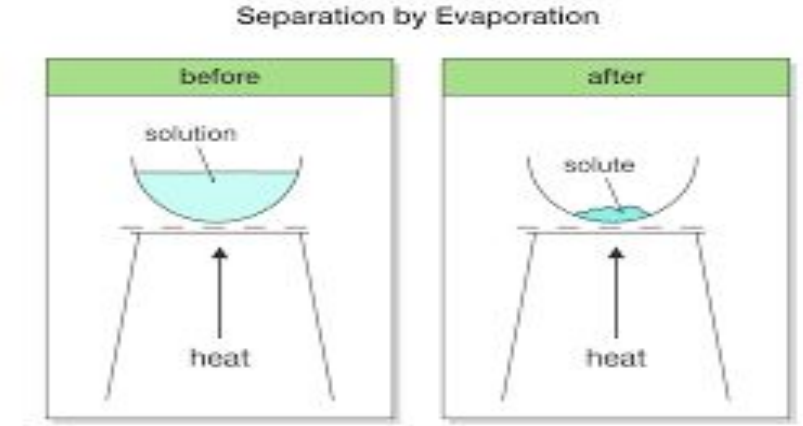
About 78% of nitrogen is present in the air. It is a very vital component of air. It is inactive in nature that is why it doesn't affect us even though most of the air we breathe is nitrogen. It is a very important component for plants and is fixed and recycled naturally by some bacteria and thundering. If air does not have nitrogen, then oxygen will burn everything, that's one big blessing of nitrogen in the air. About 21% of oxygen is present in the air. It is a vital component for sustaining life on planet Earth. The rest of air is covered by other minor gases like carbon dioxide, neon, helium, krypton, hydrogen, argon and small amounts of other gases.

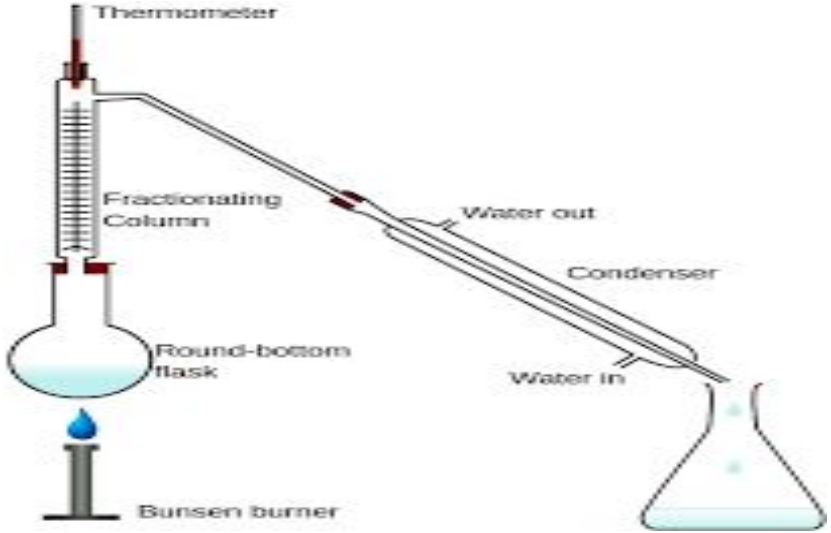
3. Write the names of some minor gases which are found in the air.

Ans: Carbon dioxide, neon, helium, krypton, hydrogen, argon and small amounts of other gases.

REMOVAL OF SOLUBLE IMPURITIES

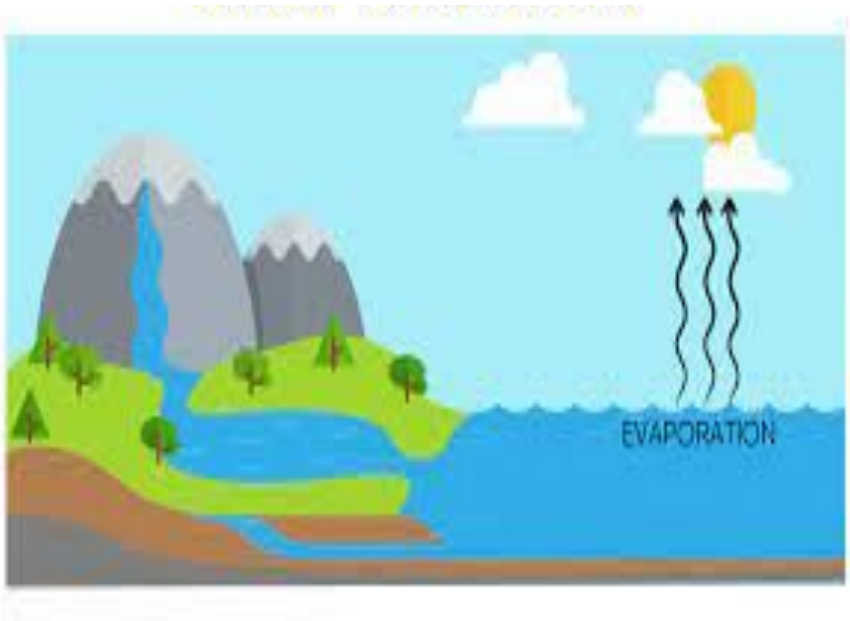
- When the impurities are soluble in water, they are set to be soluble impurities.
- Soluble impurities can be removed by evaporation and by distillation.





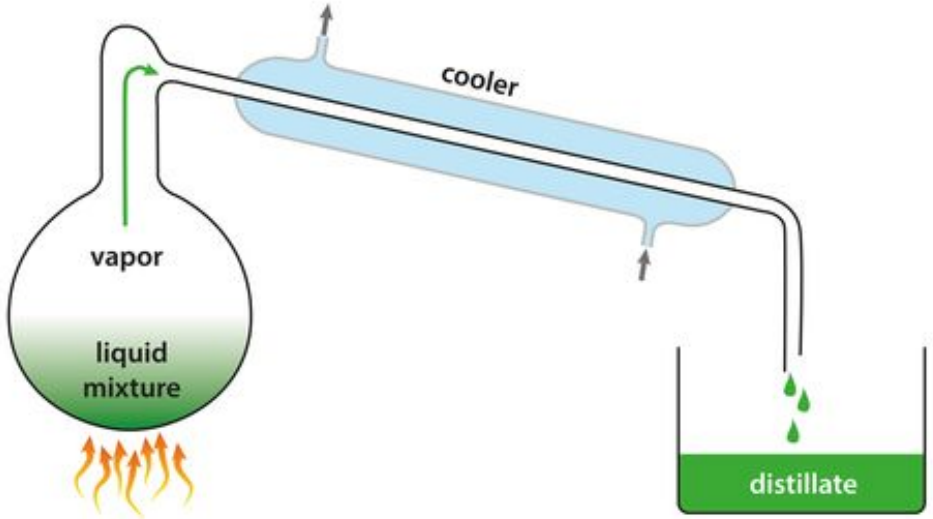
EVAPORATION

- **The process of changing of water or any other liquid to vapor by heating is called evaporation.**



DISTILLATION

- **The purification of liquid by changing it into vapor by heating and then condensing it into a pure liquid by cooling is called distillation.**

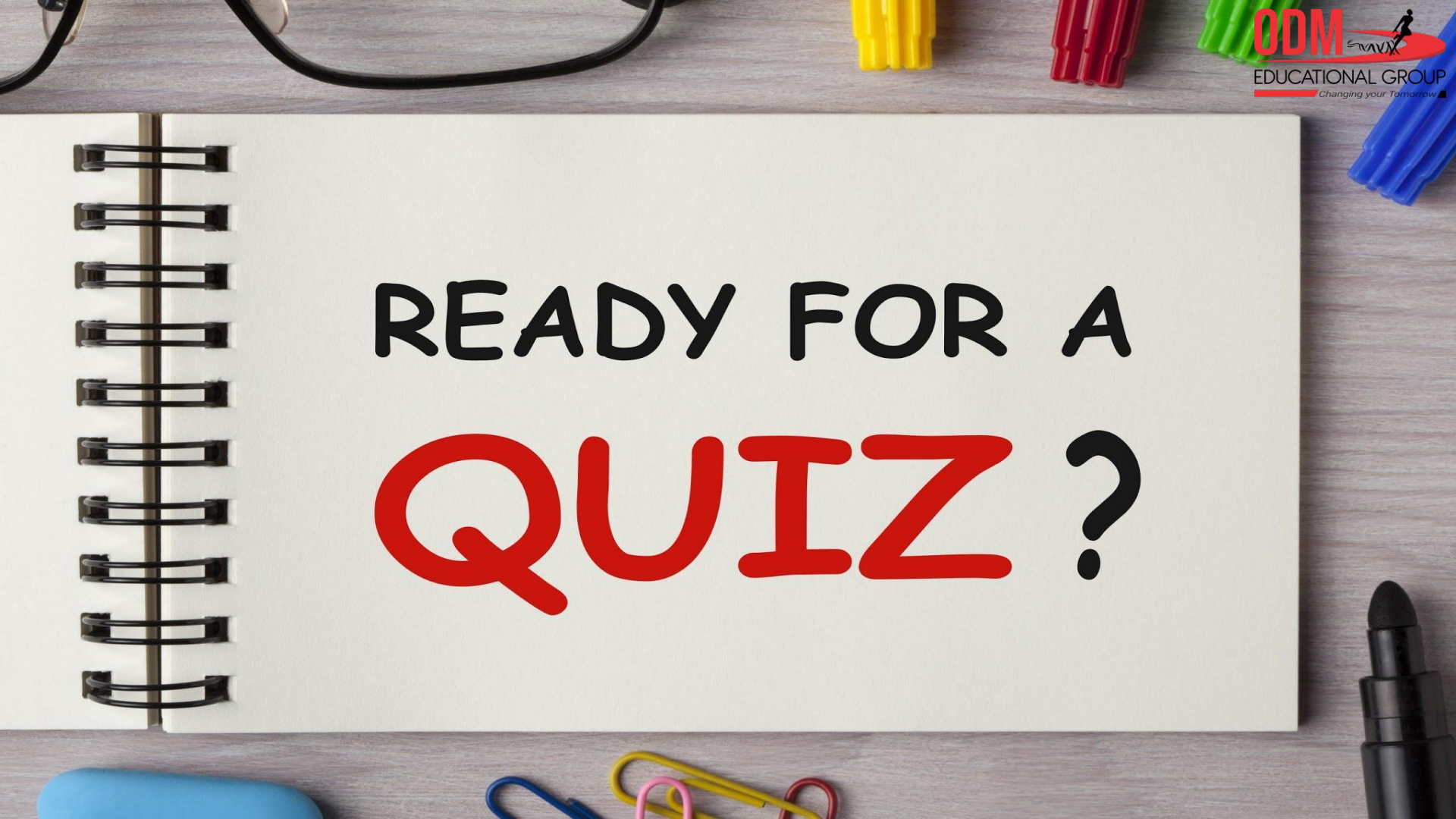


DISTILLED WATER

- Distilled water is the purest form of water which do not contain any impurities or minerals.
- It is used in car batteries, science experiments and in medicines.

SUMMARY

- When the impurities are soluble in water, they are set to be soluble impurities.
- Soluble impurities can be removed by evaporation and by distillation.
- The process of changing of water or any other liquid to vapor by heating is called evaporation.
- The purification of liquid by changing it into vapor by heating and then condensing it into a pure liquid by cooling is called distillation.
- Distilled water is the purest form of water which do not contain any impurities or minerals.
- It is used in car batteries, science experiments and in medicines.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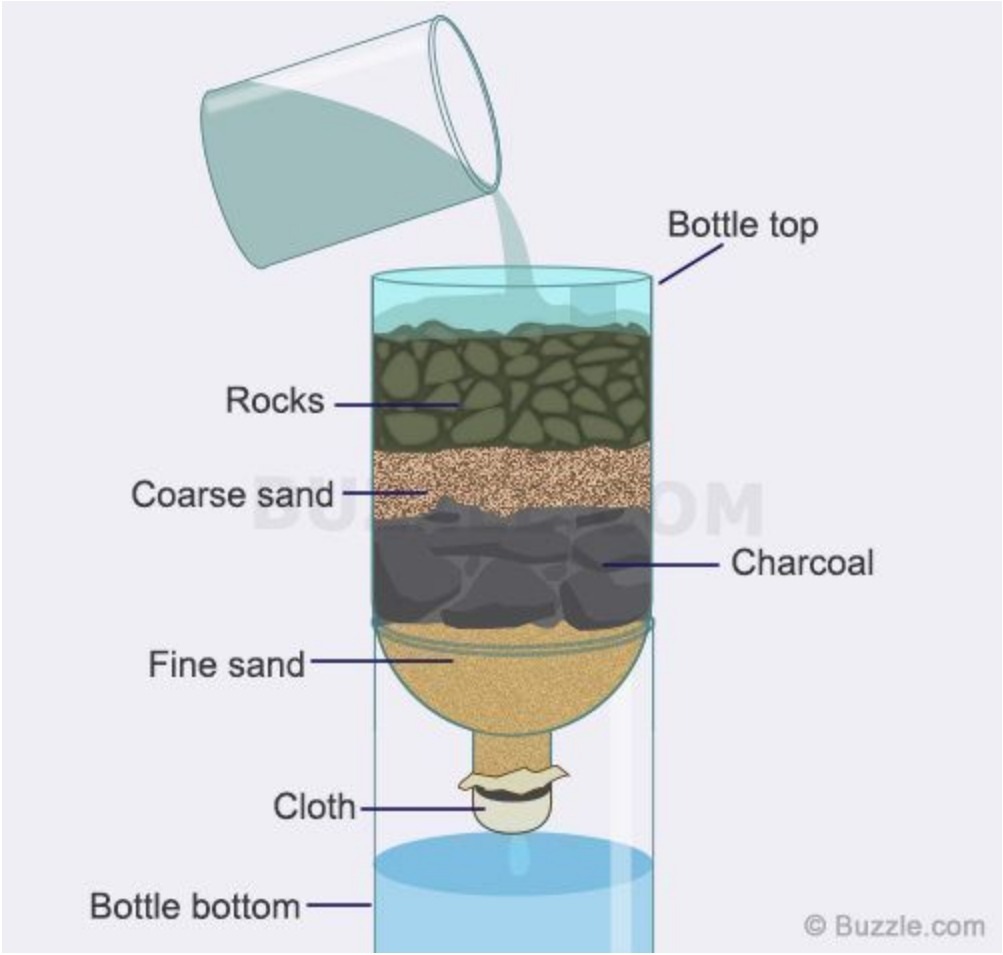
READY FOR A
QUIZ ?

Read the passage and answer the following questions:

Rahul had been to a camp. He realised that there is no source of clean water. So, to clean the water and make it fit for consumption he thought of something. He took a clean bottle and cut off the bottom. He stuffed the neck of the bottle with some clean cotton. Then he turned the bottle upside down and placed it on a clean glass. Over the cotton, he spread a layer of small pebbles, then gravel and above that a layer of sand which he has washed from before. Then, he poured dirty water over these layers of filter. He watched the water drops trickling down through the cotton. This way he filtered the dirty water. Finally, he took the cleaned water and boiled it in his kettle. Now, the water became fit for drinking.

1. **Which type of impurities can be removed by adapting the above method?**

Ans: Insoluble impurities


Bottle top
Rocks
Coarse sand
Charcoal
Fine sand
Cloth
Bottle bottom
© Buzzle.com

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Rahul had been to a camp. He realised that there is no source of clean water. So, to clean the water and make it fit for consumption he thought of something. He took a clean bottle and cut off the bottom. He stuffed the neck of the bottle with some clean cotton. Then he turned the bottle upside down and placed it on a clean glass. Over the cotton, he spread a layer of small pebbles, then gravel and above that a layer of sand which he has washed from before. Then, he poured dirty water over these layers of filter. He watched the water drops trickling down through the cotton. This way he filtered the dirty water. Finally, he took the cleaned water and boiled it in his kettle. Now, the water became fit for drinking.

2. Why do you think Rahul has washed the pebbles and gravel before using them?

Ans: Rahul has washed the pebbles and gravel before using them to remove any dirt attached to them.

Read the passage and answer the following questions:

Rahul had been to a camp. He realised that there is no source of clean water. So, to clean the water and make it fit for consumption he thought of something. He took a clean bottle and cut off the bottom. He stuffed the neck of the bottle with some clean cotton. Then he turned the bottle upside down and placed it on a clean glass. Over the cotton, he spread a layer of small pebbles, then gravel and above that a layer of sand which he has washed from before. Then, he poured dirty water over these layers of filter. He watched the water drops trickling down through the cotton. This way he filtered the dirty water. Finally, he took the cleaned water and boiled it in his kettle. Now, the water became fit for drinking.

3. Which method Rahul used to clean the water?

Ans: Filtration and boiling

Read the passage and answer the following questions:

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4. At the end Rahul had boiled the water. What is the reason behind it?

Ans: To kill the germs found in water.

HOMEWORK

- **Draw a labelled diagram of the process of distillation.**

C. Write short answers.

1. **Name any four gases present in the air.**

Ans: Nitrogen, hydrogen, oxygen, carbon dioxide are some of the gases present in the air.

2. **How does water vapor form in the atmosphere?**

Ans: Water vapour is formed because of the evaporation of water from the surface of water bodies like seas rivers and lakes.

3. **Why should drinking water be purified?**

Ans: Drinking water should be purified to remove disease-causing germs.

4. **Name three processes involved in the treatment of the town water supply.**

Ans: The three processes involved in the treatment of the town water supply are:

- **Sedimentation**
- **Filtration**
- **Chlorination**

LEARNING OUTCOME

The learner will be able to:

- **understand the importance of water.**
- **know the types of impurities.**
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THANKING YOU

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