

SCIENCE

(Activity 18 – To purify dirty water using charcoal, sand and gravel.)

Chapter 18– Wastewater story

CLASS –VII

Duration:35 minutes

Nature of activity: Group

Learning outcome : The students will perform the activity and compare the filter made in this activity with other methods of purification of water.

What we have to do? To purify dirty water using charcoal, sand and gravel.

What is required? Dirty water, paper tissues, charcoal pieces, scissors, sand, gravel and plastic bottle.

What do we need to know?

Filtration is one of the effective ways of purifying water . Since filtration does not deplete all the mineral salts, water that has been filtered is considered healthier compared to water purified using other methods. It is an economic method of water purification because little water is lost during purification.

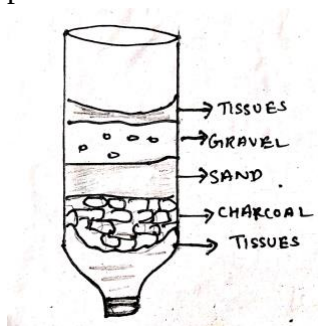
How will you proceed ?

❓ **Teacher’ s activity**

Teacher will explain about the importance of purifying water and will arrange materials for the water purification process.

❓ **Student’s activity**

1. First the bottom part of a big plastic bottle is cut and removed. Small holes are made in the cap to allow water to come out.
2. Some tissues are put in the bottle near the cap.
3. Then, a layer of charcoal is added on top of the tissues.
4. A layer of sand and gravel is added.
5. Lastly, a layer of tissues is put on the top.
6. The dirty water is poured from the top and a glass is kept below the bottle to collect purified water.



What have you observed ?

S.No	Condition of Water	Colour and odour
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1.	Before purification	
2.	After purification	

What you have learnt? We can create a basic purification filter using materials available at home to filter water which is contaminated with dirt particles.

What more can we do?

Using RO water purifiers not only gives us safe, clean and tasty water but also protects us from life-threatening waterborne diseases. But there is one big drawback of using RO water purifiers i.e. the excessive wastage of water. An average RO purifier wastes approximately 3 litres of water for every 1 litre of purified water. That means only 25% of water is purified and 75% of water comes out as waste. Find out ways by which we can use the water coming out of RO filter.

Extended Worksheet

1. How does boiling the water help in making it safe for drinking purposes?
2. What is the use of charcoal in the filtration process given in the activity?
3. How does Ultraviolet rays help in making water safe for drinking purposes?
4. Chlorine tablets are used to disinfect water. Are they harmful to humans?
5. Can distilled water be used for drinking purposes? Explain.