

## Chapter- 3

# Water



Geeta and Meena were two friends. Geeta went to visit Meena's house with her elder brother.

There was a filter at Meena's front yard. Meena's mother pulled out water from the well and poured it into the filter. She placed a bucket to collect the water from the filter. Geeta watched everything carefully and asked, "Aunty, where do you use the water from the bucket?"

"We use this water for bathing, to wash our clothes, and also we boil this water for drinking."

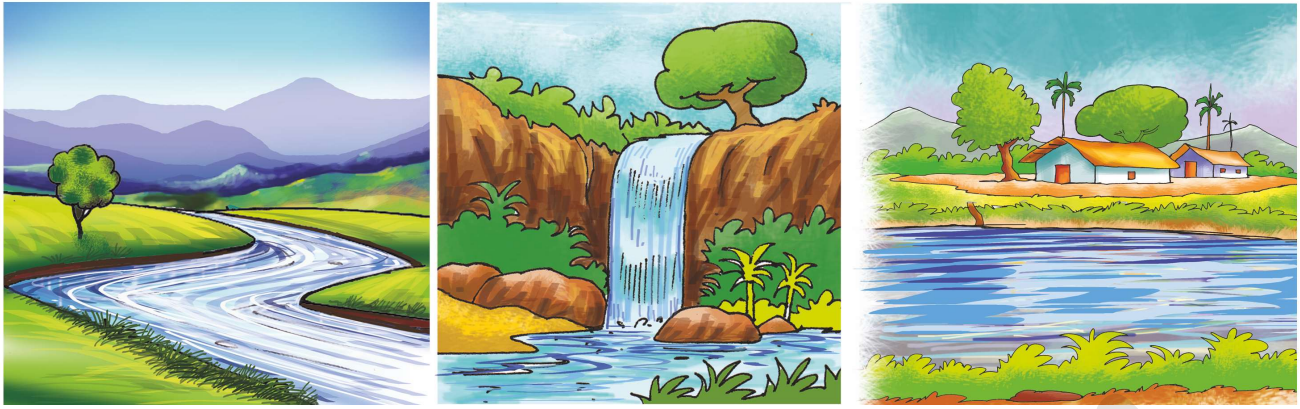
Geeta was thinking— We get water at our home just by turning on the water tap.

After returning home, to satisfy her curiosity she went to her mother. They talked a lot about water.

Her mother said— "Although we see water in many places around us, but all of them are not suitable for use."

### **What have you understood from the above discussion?**

- Where does the water used in Geeta and Meena's homes come from?
- At Geeta's home they get water by turning on the tap, from where does the water come?
- Why did Meena's mother filter the water?
- Why do they boil the water for drinking?
- Why is all the water available around us is not suitable for use?



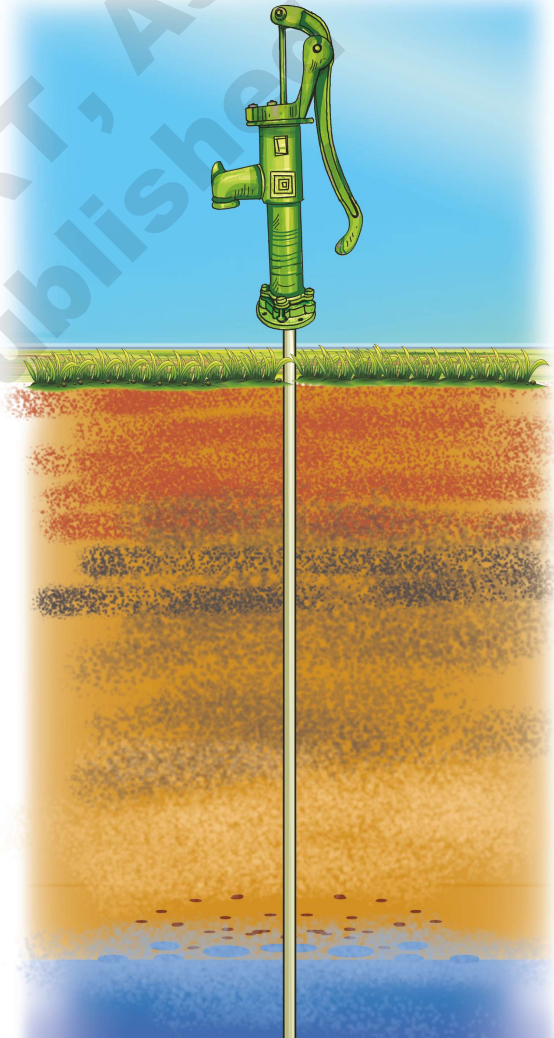
surface water

Most of the water available on earth is present in seas, oceans, rivers, lakes, streams, ponds, underground, etc. Moreover, water is also present in the form of ice in the cold regions of high mountains.

Lakes, ponds, rivers, streams, seas, oceans, etc. are the sources of **surface water**. We get water from these sources. About three-fourths of the earth's surface is covered with water.

We get water from hand-pump, well, etc. But where is this water stored? This water is preserved under the earth's surface. The water from rains, rivers, ponds, etc. goes down into the soil and move through the pores which are then stored between the spaces and cracks of the rocks or aquifers under the earth. This water is called **ground water**.

Water from rivers, lakes, ponds, wells, hand-pumps, etc. is pumped out from underground and stored in a water tank. This water is then carried through the pipes and used for various purposes. A tap or faucet is fitted at the opening of the pipe. We get water by turning on this tap.



ground water

Water collected from such sources can also be purified. The seawater is the surface water. Since the seawater is salty we cannot use this water directly.



### Let's collect some information–

Collect the following information from your home and two other houses from your neighbourhood and fill up the table.

- (A) From where do they collect drinking water?
- (B) Do they purify the water before drinking? If yes, what is the method of purification?

Houses	From where do they collect drinking water? Well/Hand-pump/Pond etc.	Do they purify the water before drinking? If yes, what is the method of purification?
Own		
First neighbour		
Second neighbour		

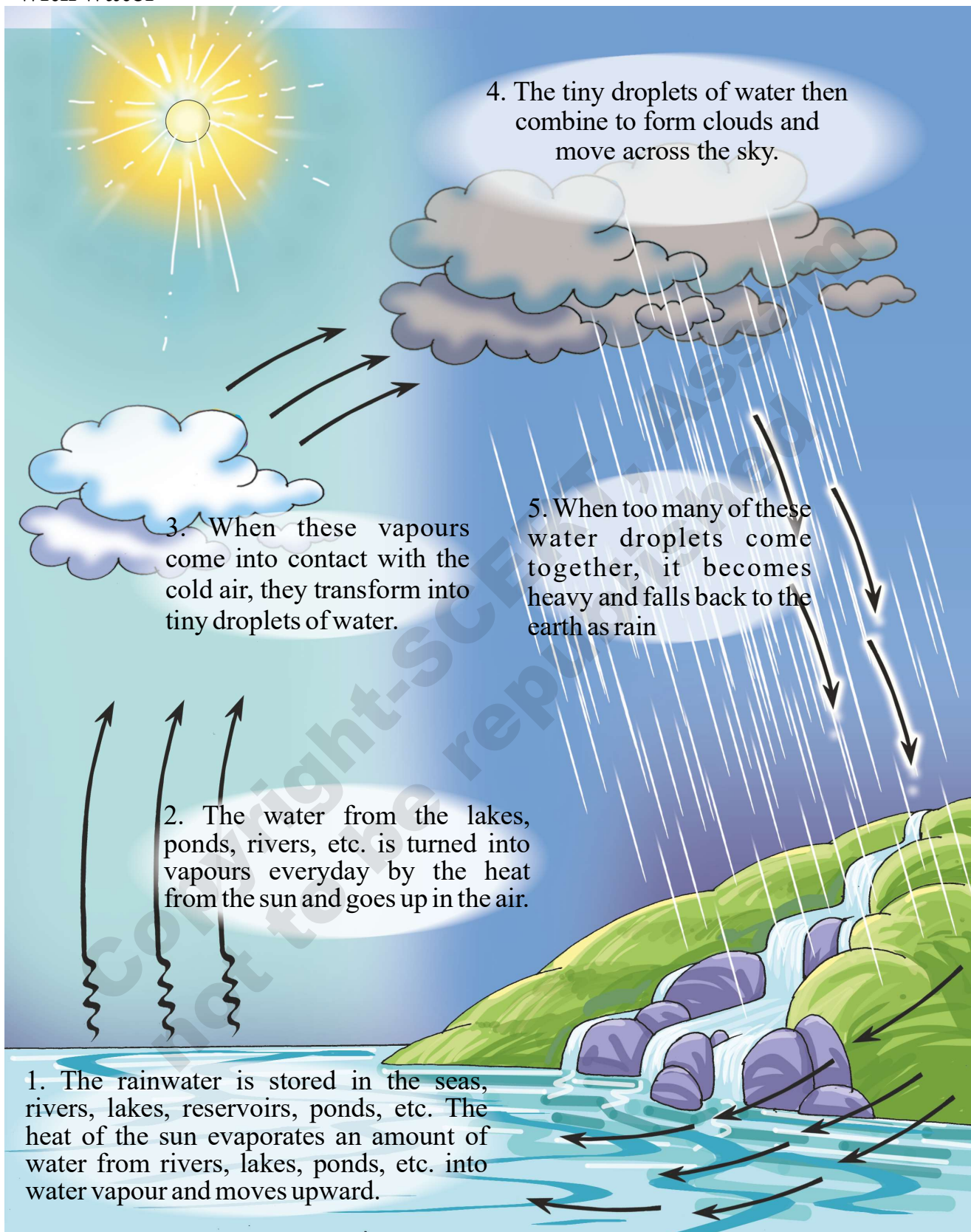
Ground water is used for various household activities along with industries, irrigation, etc. The level of groundwater or water from various sources goes up and down from time to time.

### Think and write–

- What are the difficulties we will face if the groundwater goes dry?



**Let's see how the sources of groundwater and surface water are filled with water—**



Water formation

The rainwater is stored in rivers, seas, lakes, ponds, drains, etc. and some of the rainwater dripped down the soil. The water of the seas, rivers, lakes, ponds, etc. turns into vapours due to the heat from the sun. These water vapour goes up and comes with the contact of cold air and turns into tiny water droplets. These droplets constitute to form clouds. Then the clouds form rain. Sometimes these droplets pass through very cold air, and it falls on the earth as snow or hail and rain. As a result of this, the rivers, ponds, lakes, etc. are refilled with water. This is the **water cycle**.

**Let's try to do–**

- Boil some water in a kettle. After some time, you will see steam (vapour) coming out from the spout of the kettle.

On heating, water turns into vapour.  
This process is called **evaporation**.

- In the adjacent experiment, we can observe that vapour is coming out from the kettle. Now, let the vapours touch an icy cold plate. You will see some drops of water on the plate.

If water vapour is cooled, it changes to water. This process is called **condensation**.



- Take a clear glass of water. Put one teaspoon of salt into the water. Has the salt dissolved? You will see that all the salt has not dissolved. Now, mix it with a spoon. The salt has completely disappeared. Salt gets dissolved in water.

### Discuss in group and say-

- What are the benefits and drawbacks we have as things dissolved in water?

### Let us do an experiment and see—

- There are some items mentioned below. Write down by examining which of the following gets dissolved in water and which does not—

Sugar, tea, oil, sand, jaggery, wheat, chalk dust, rock candy (*misiri*), soil, turmeric, soap.

Name of the items	
Dissolve in water	Does not dissolve in water

### Activities –

- What are the things that can get mixed in the sources of water around your school and house? Discuss in groups and write down the reasons behind it.

As a result of the wastes and garbages thrown by people in the rivers, lakes, ponds, etc, the water becomes dirty and full of germs. These germs cause several diseases in humans like cholera, dysentery, typhoid, stomach infection, etc. Therefore, we should drink only pure water. Although groundwater is somewhat safe for drinking, it contains too many mineral salts. The rainwater is pure. But the atmosphere of the concrete cities contains large amounts of gases, dust particles, carbon (black smoke), etc. The rainwater in those places is not pure.

Have you or any of your friends suffered from any water-borne disease? If yes, what is the name of the disease?

Disease-causing germs are killed when the water is boiled. Although it may look clean, water is suitable for drinking only when it is boiled. That is why Meena's mother filtered the water and boiled the filtered water for drinking.

What is the use of potash alum (*fitkiri*) for purifying water? Ask your teacher.

### Let us see how to make a sand filter–

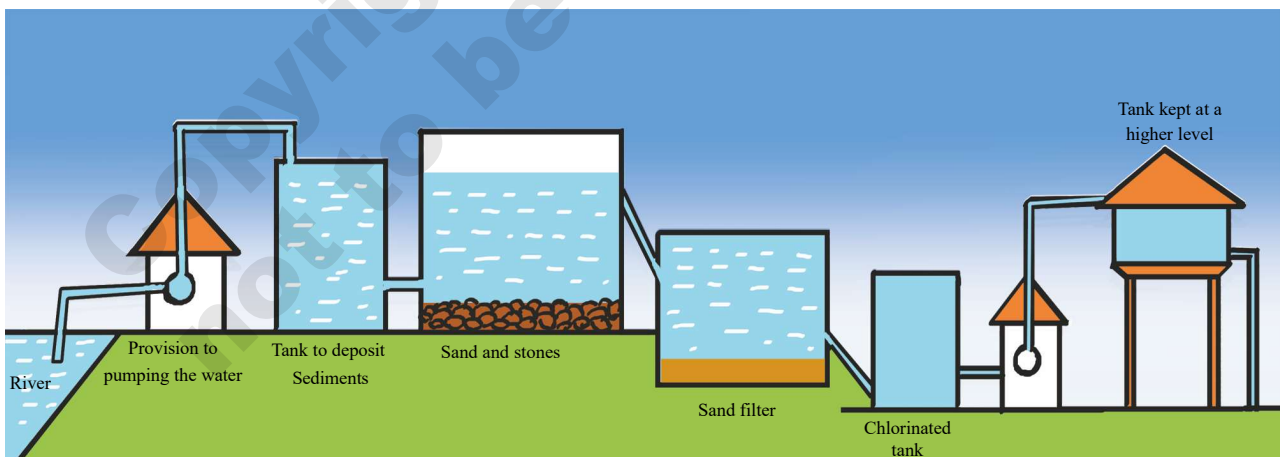
1. Take a glass container, a transparent one is better. Heat one end of a safety pin or a needle and make some small holes in the lower surface of the container with it.
2. As shown in the picture, fill up the container with charcoals, small rocks, and sand.
3. Now, connect a funnel with the container using a gum-tape. Your filter is ready. Now pour some muddy water on the filter and observe the clean water coming out of it.



sand filter

### Water supply system in towns–

There are several levels or steps in the water supply system of towns. At first, the water is stored in a tank at a higher level with the help of pipes, and the sediments are allowed to deposit. Then the water is allowed to pass through several layers of items in a specially constructed container for cleaning. Finally, the water is made germ-free by using chlorine or other methods and sent to the houses.



water supply system

There are water supply facilities even in some villages too.

Do you have any facility for water supply by the government in your locality?



On the one hand, an increase in population, production and agricultural expansion has increased the need for water and on the other hand, the amount of water suitable for our use is very limited on the earth. Therefore, we should only use the amount of water that is necessary. We should not waste water for any reason.

- Observe whether there is wastage of water in your school, home or your neighbourhood.

**Know from your teacher and parents/grandians and write briefly-**

- How dykes (barriers) are built in the crop fields to conserve water.
- What are the ways to conserve water.

We can reduce the scarcity of water by reusing it. Observe what are the activities where water is reused at your home and write them in the table below-

Water used for the first time	Where water is reused for the second time

The water used in different activities becomes dirty after the first use. This water can again be reused after proper purification. This process is called **recycling**. This is a long process. You will learn more in detail in your higher classes.



Conservation of rainwater

We can also reduce the scarcity of water by preventing the wastage of rainwater. For doing that we need to conserve the rainwater.

There are many places where people depend entirely on rain for water. They collect and store rainwater for many days.

- Do you conserve water at your home or your school?



## Exercise

1. Answer the following—

- (a) What kind of water should we drink?
- (b) What would happen if we drink water containing germs?
- (c) How can you make water germ-free?
- (d) Name some items that dissolve in water.
- (e) What converts the water from rivers, seas, oceans, streams, etc. into vapour?

2. Fill in the blanks—

- (a) Hail and rain contains \_\_\_\_\_.
- (b) Sea water is \_\_\_\_\_.
- (c) When the water is boiled, disease-causing \_\_\_\_\_ are killed.
- (d) On being heated, water is converted to \_\_\_\_\_.
- (e) When the water vapour is cooled it turns into \_\_\_\_\_.

3. Apart from household activities what are the other activities where water is used?

4. What are the difficulties that we face when it rains very heavily?

5. Draw a picture of the water cycle and colour it.

6. Discuss in group and prepare a report on the facilities of drinking water at your school. (Take help from your teacher.)

- Where do you get the drinking water in your school?
- If there is no tap water or hand pump, from where do you get the drinking water?
- Do all the taps and hand pumps contain water?
- Do you cover the container of water with a lid?
- Are the containers cleaned regularly?
- What is the method applied to make water suitable for drinking?

