

Introduction

- Water has a very significant role in our daily life.
- Apart from drinking water, without water we will not be able to do many of our day-to-day activities like washing clothes, cooking food, bathing etc.
- Water is a natural resource that we access for many purposes and will need it for a long period of time.



How much water do we use?

➤ Activity 1

1. Make a table estimating the amount of water you and your family use for different purposes in a single day
2. Note down the amount of water and then add the total amount of water.

activity	Amount of water used
• Drinking	
• Brushing	
• Bathing	
• Washing utensils	
• Toilets	
• Washing clothes	
• Any other	
• Total amount of water	

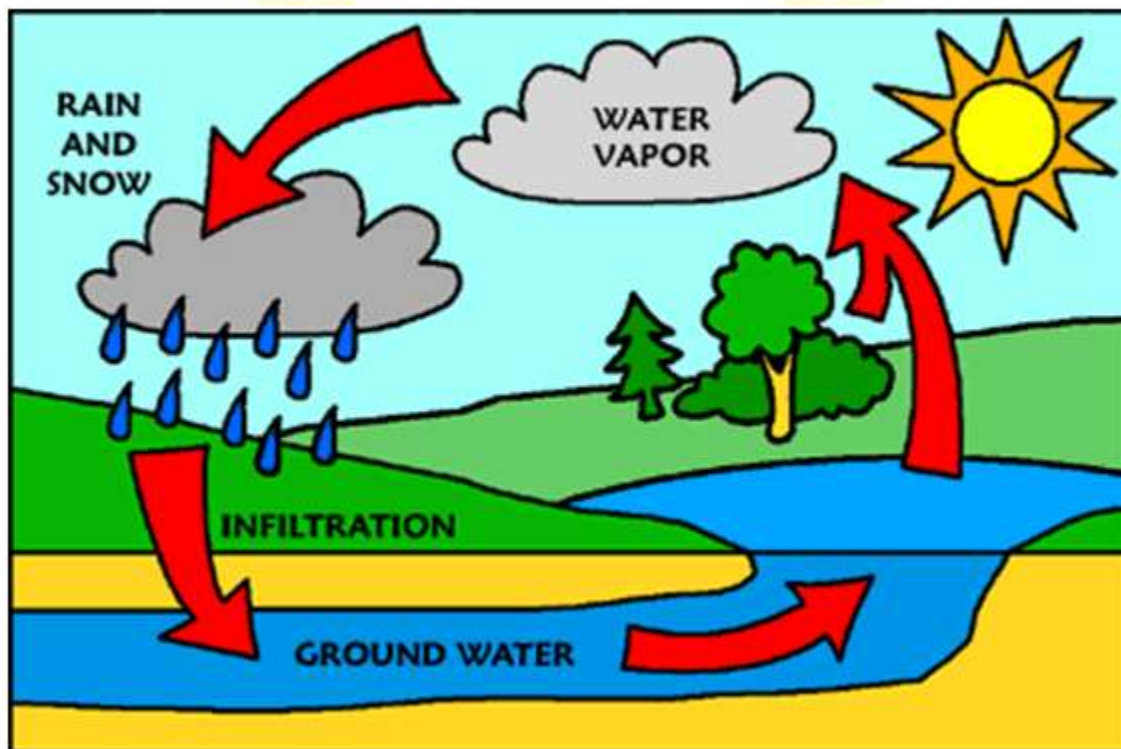
- From the above table you will have an idea of amount of water your family needs in a day and then you can calculate the amount of water used by per person.

- Similarly, you can calculate the amount of water used by your village or town.
- There are many regions where people do not get adequate amount of water not even for their basic requirement like for drinking, bathing, washing clothes.
- Water is not only useful for our basic requirements but it is also used in almost every type of industries.
- For example: we need water to produce pages of our books. Two glasses of water per page.

Where do we get water from?

- There are many sources of water like rivers, ponds, lakes, springs etc.
- There are many different ways of getting water supply in our home like through pipe lines through taps but ultimately, they get water from the rivers, ponds, lakes well etc.
- Ocean covers about two-third part of the earth yet this water is of no use for domestic and agriculture purpose because the water of oceans and seas is very salty.
- The water of oceans and seas is saline but plays an important role in supplying water to rivers, ponds, lakes etc.

Water cycle



Disappearing trick of water

- We know that if the salt water is heated the water evaporates and leaves the salt behind. Similarly, water seems to be disappeared from wet clothes when we put them in sunlight.
- This gives us an idea that water evaporates on heating and changes into vapours.
- Evaporation is the process in which on heating liquid changes into vapours.
- Heating is the important aspects for evaporation.
- Activity 2
 1. Take two plates of same sizes
 2. Fill the plates with equal amount of water.
 3. Now place one plate in sunlight and another one under shadow.
 4. Remember that while placing the plates water should not spill.
 5. Now after 15 minutes the two plates.
 6. The water will be seemed to be disappear from the plate kept in sunlight.
- During the daytime, sunlight continuously heats up water of all the water bodies such as oceans, seas, lakes, rivers etc. due to this heat water from all the water bodies gets evaporate and change into water vapours.
- The water from oceans and seas evaporates and leave the salt behind.
- The evaporation is continuous and slow process in sunlight. This process is faster on heating water on a burner.
- There is another process known as transpiration through which water changes into vapours. This process is known as transpiration.
- In transpiration plant releases water in the form of vapours after using it for their food preparation.
- There is huge loss of water during transpiration. For example: nearly 500litres of water changes into vapours by the wheat plants that give us about 1kg of wheat.
- Water changes into vapours and enters the air though evaporation and transpiration.
- But we regain this lost water lets understand how

How are clouds formed?

- When the water vapours in the air cools down it condenses and become water droplets.
- When the water vapours go higher and higher it cools down and converted into water droplets.
- Condensation is the process in which water vapours is converted into water droplets.
- The water droplets form clouds and the heavy droplets fall on the earth in the form of rain.
- Hail and snow may fall in some special conditions.

- This process brings the lost water again on the earth surface.

➤ **Activity 3**

1. Take a glass with half-filled water in it.
 2. Pour 4 to 5 ice cube in it.
 3. This cold water will cool down the vapours in the surrounding air.
 4. The water vapours will condense and you will find out the water droplets on the outer surface of the glass.
- Hence, through evaporation and transpiration water forms water vapours and through condensation the vapours again changes into water droplets.
 - In cold days dew on the leaves and grass and in metal surfaces are also due to condensation.

Back to the oceans

- The water gets back to earth surface in the form of rain, hail or snow.
- This water fills up the river lakes and streams. These water bodies then fall back to an ocean or a sea.
- Some part of this rain is absorbed by the ground and rest is available in the form of ground water.
- We use handpumps and wells to draw this ground water.
- The availability of ground water is very less in some places because most of the land part of that area is covered with concrete which can not hold rain water as the result rain water flows away.
- This cycle of water of becoming water vapours and then coming back to the earth surface as water is known as water cycle.

What if it rains heavily?

- The duration, amount and time of rainfall is not same for every place.
- India receives most of its rainfall during monsoon. But heavy rainfalls bring many problems like floods. We depend on rain water for sowing many crops.
- The increased level of water in rivers lakes and ponds badly affects the vegetations, forests, villages and cities.
- Flood causes the life of water animals. They get carried away with the water and trapped on lands and die.

What if it does not rain for a long period

- When the water is not being brought back by rain it arises the condition of drought.
- The level of water falls down in rivers, ponds. The ground water level also decreases and the place becomes dry.
- In drought conditions animals and vegetation gets badly affected.

- desert regions receive very less or no rainfall due to which people faces many difficulties to perform various activities. They struggle for even drinking water.

How can we conserve water?

- Though the water level on earth is sufficient yet cannot be directly used.
- Use and demand and number people using water is increasing day by day.
- The amount of water that can be used is very limited hence we have to conserve water and use it properly.

Rain water harvesting

- Rain water harvesting means to collect and store rain water and use it for later use.
- Through rain water harvesting we can increase the availability of water.
- The water that flows away and do not seep in the ground in most of the places which is covered with concrete. Rainwater harvesting can play major role in saving water in such areas.
- Techniques of rainwater harvesting
 1. You can collect rain water on your rooftop and then connect it to a tank through a pipe this water may need filtration before use.
 2. You can connect a pipeline directly to the ground to refill the ground water.
 3. There is another way of harvesting rain water. The rain water can be directly send to the ground from the roadside drains.