



Try this.

## 10. More about Water

Take some clean water in a glass. Look at its colour.  
What colour is it ?



Smell a fragrant flower. Did you like the smell ?  
Now smell the water. Does it have a smell ?

Taste a ripe mango or chikoo or guava.  
How does the ripe fruit taste ?

Now taste the water. How does it taste ?  
What does this tell us ? **Pure water has no colour, taste or smell.**

### New terms :

**Transparent** : If you can see through a substance, it is said to be transparent.

**Opaque** : If you cannot see through a substance, it is said to be opaque.



Try this.

**(This should be done with adult supervision.)**

- Light a candle and stand it on a table.
- Look at it through a cardboard.
- Now look at the same candle through a glass pane. **What do you find ?**
- You cannot see the flame through the cardboard. But you can see it through the glass. **What does that mean ?**
- The cardboard is **opaque**, but glass is **transparent**.



- Now look at the candle through a glass of water.

**What do you find ?**

- The candle can be seen through the water in the glass, as well.

**What does this mean ?**

Water, too, is transparent.



### Pure water

Has no colour      Has no smell      Has no taste      Is transparent



**Try this.**

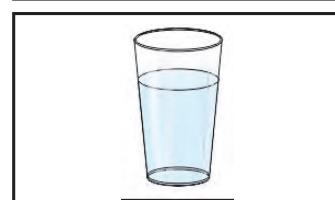
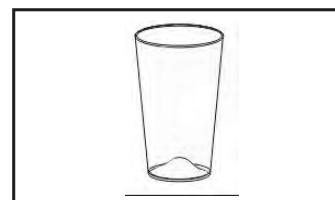
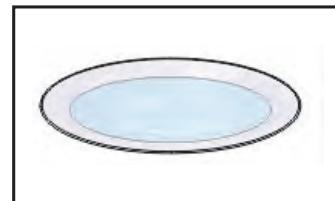
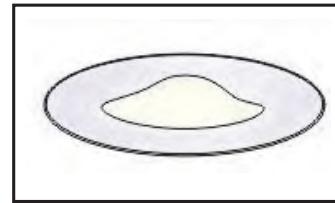
- Take some wheat or jowar flour and some water. Take two dishes and two glasses.
- Put a little flour in one of the dishes.
- Pour some water in the other dish.
- Now put some flour in one of the glasses.
- And put some water in the other glass.

**What do you see ?**

- A small heap of flour is formed in the dish. A heap of flour is formed in the glass as well. The water, however, takes the shape of the plate or the glass.

**What does this tell us ?**

Water takes the shape of the container into which you pour it.



**Water does not have a shape of its own. That is why, it spreads when it spills on the floor.**



## Use your brain power !

- We can see the bottom of a pool of water only if the water is clean. Why?
- While carrying a bucket of water down a slope, the bucket fell and the water was spilt. Will the water form a heap? Or, will it flow away?

### More about water

It takes the shape of its container.

It spreads on a flat surface.

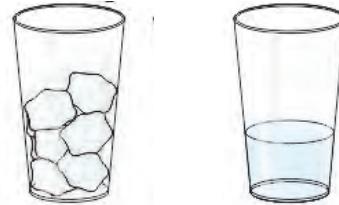
It flows down a slope.

#### • The three states of water



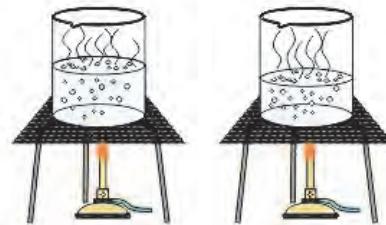
Try this.

Place a few ice cubes in a glass.  
See what happens to them after a while.



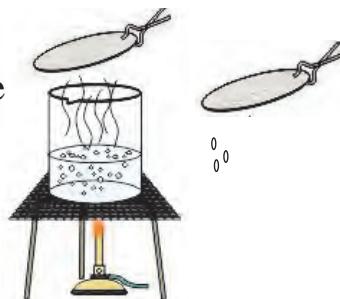
Try this.

Do this experiment with the permission of an adult and under his/her supervision.



Heat some water on a burner. What do you see after some time?

The water begins to boil. Keep it boiling for some time and observe it. What do you see? There is less water in the beaker. **Why is there less water than before?**



Using tongs, hold a steel plate in the steam coming from the water only for a few moments and remove it. What do you see on the underside of the plate? Droplets of water have formed on it.

#### Where did these droplets come from ?

When water becomes very cold, it freezes. That is, it turns into ice. When ice is left uncovered, it gets heat from the air around it. It melts. That is, it forms water. When water gets enough heat, it turns into vapour.

The boiling water in the experiment turned into vapour. That is why, the water in the beaker was reduced.

As steam cools, it turns into water. The plate held in the steam was cool. So, the steam that collected on its underside cooled down and droplets of water were formed.



## New terms :

**State** : the form in which a substance may be found.

**Water vapour** : the form in which water is held in the air.

The water we use every day is its liquid state. Ice is its solid state. Vapour is the state of water in which it is a gas. Water vapour is the gaseous state of water.

### The three states of water

Solid state

Ice

Liquid state

Water

Gaseous state

Water vapour



Try this.

### Have some fun.

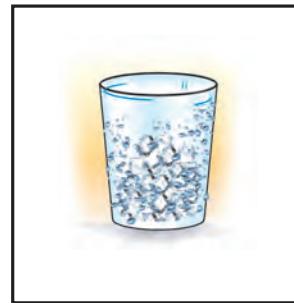
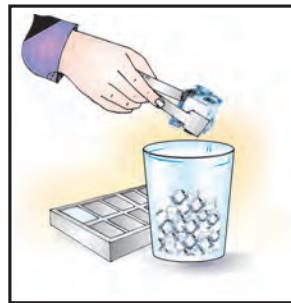
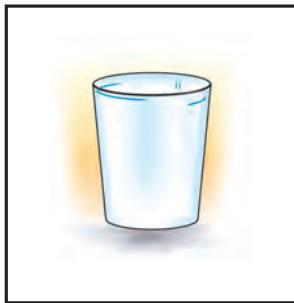
- Take a glass. Wipe it dry inside and outside with a clean piece of cloth.
- Place five or six ice cubes in the glass.

### What do you see?

- It is no surprise if the glass becomes wet on the inside. But, you see that the outside of the glass has also become moist. Isn't that strange?

### What does this tell us?

The air around the glass contains water vapour. When we put ice cubes in the glass, the glass becomes cold. That makes the air around the glass cold, too. The water vapour in the air also cools and forms very tiny droplets of water. They make the glass moist.





### Try this.

(This should only be done under adult supervision.)

- When chapatis have been made and the griddle is still very hot, sprinkle a few drops of water on it. What do you see?
- The drops sprinkled on the griddle become round like beads and disappear even as you watch.



What does this tell us?

- The griddle is very hot. The heat from the griddle changes the water into water vapour all at once.



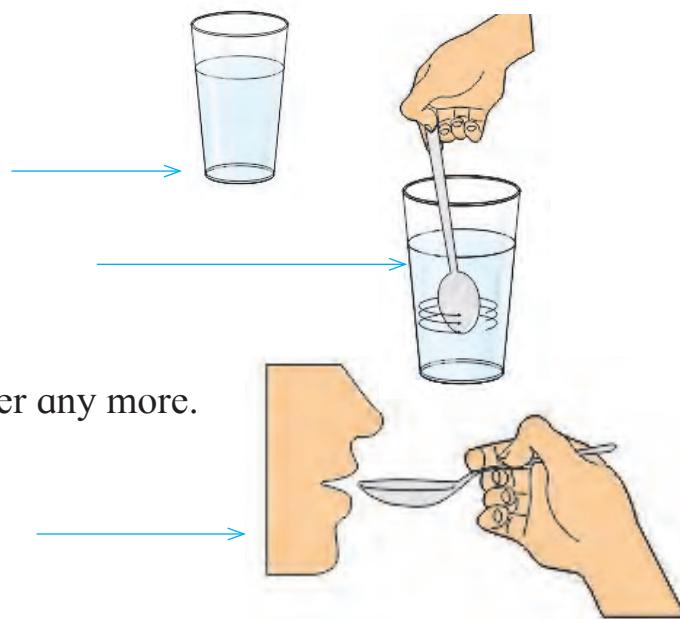
### Use your brain power !

- Why do wet clothes on the clothesline become dry after some time?



### Try this.

- Take water in a glass.
- Add a pinch of salt to the water.
- Stir it with a spoon.



What do you see?

- You do not see the salt in the water any more. With the spoon, place a drop of this water on your tongue. You find that it tastes salty.

What does this tell us?

- The water was salty. It means that the salt is still there in the water though we cannot see it. In other words, the salt has dissolved in the water.

Some substances dissolve in water.



### Use your brain power !

- Several substances dissolve in water. Name some of them.



### Do you know ?

Water has to be frozen to make ice. Many people have refrigerators in which ice can be made. In factories, ice is made in large quantities. Ice candy or ice fruit is made by freezing water to which sugar, fruit juice and colour have been added.



### What we have learnt –

- \* Water has no colour, smell or taste. Water is transparent.
- \* Water takes the shape of the container in which it is kept.
- \* Water spreads on a flat surface. It flows down a slope.
- \* Water is found in three states : solid, liquid and gaseous.
- \* Several substances dissolve in water.



### Always remember –

We know that liquid water has many uses. But, the solid ice and the gaseous water vapour are also useful in many ways.



### Exercises

#### A. What's the solution?

Due to the cold, the coconut oil in the bottle has frozen. We have to pour it out.

#### B. Think and tell.

- (1) During the rainy season, why do crisp biscuits become soft ?
- (2) Why does water become coloured when crystals of potassium permanganate are added to it ?
- (3) When we add jaggery to water and stir it, why does the water taste sweet ?
- (4) The mountain peaks in the Himalayas are always covered with snow and ice. What could be the reason for that ?

### C. Find out.

Why does the hot tea in a thermos flask remain hot for a long time?

### D. Carry out this experiment and write about it.

Name of the experiment : To see if rangoli dissolves in water.

Description : I took half a glass of ..... I added a pinch of ..... to it.  
I stirred it with a .....

#### What did I see?

The particles of rangoli were seen in the water, as before.

#### What does this mean?

.....

### E. True or false?

- (1) Water is transparent.
- (2) Pure water looks bluish in colour.
- (3) When water is heated a lot, it turns into ice.
- (4) Sugar does not dissolve in water.

### F. Fill in the blanks with words from the brackets.

(shape, transparent, solid, pure )

- (1) ..... water has no colour, smell or taste.
- (2) Water is .....
- (3) Water does not have a ..... of its own.
- (4) Ice is the ..... state of water.



### G. Say why –

- (1) We can see a nail that has sunk to the bottom of the water.
- (2) Sugar disappears when it is added to water and the water is stirred.

### Activity

- Collect samples of water from various sources such as water from a well, tap water, muddy water, water drawn with a hand-pump.

Observe the samples.

**Caution : DO NOT DRINK OR TASTE THIS WATER.**

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