

Physical and chemical changes

There are two types of changes of matter .

The following examples shows these two types :-

Types of changes of matter

- if you cut a paper into pieces, its shape only change .

So, we can say that :-

It is a *physical change* .



Chemical change:-

- If you burn a paper ,its shape and structure change .

So, we can say that :-

It a ***chemical change.***



Physical change

- It is a change in the shape of matter **without** any change in its structure (properties).

Examples of physical change :-

- The change of water from one state to another (melting of ice)
- Melting of any solid matter like melting wax and ice cream.



Examples of physical change

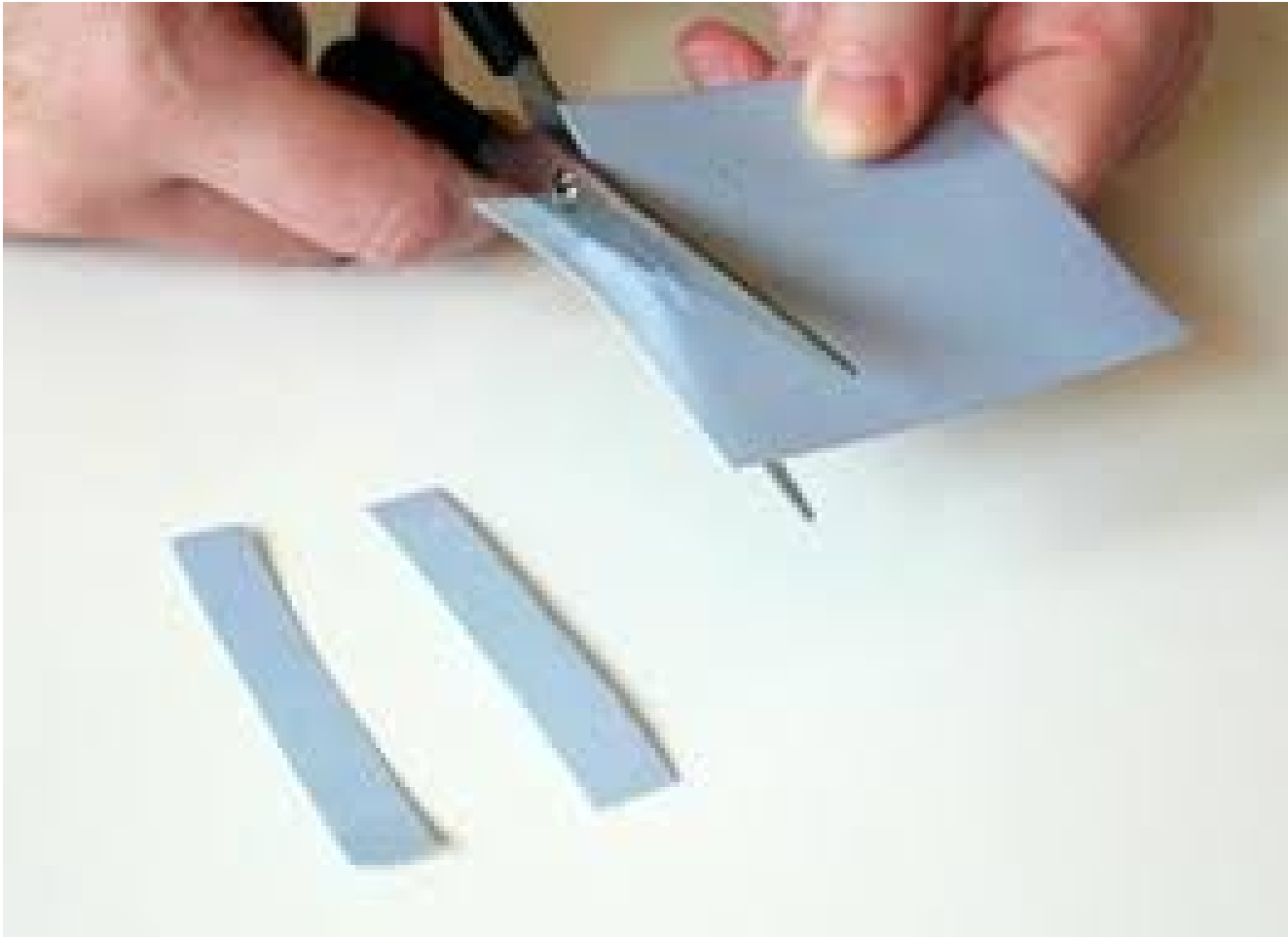
- Grinding of sugar into powder .



- Dissolving of table salt or sugar in water .



- Cutting paper into small pieces and paper recycling .



❖ ***Activity 1:-***

to show that melting of wax is a physical change .

• **Steps :-**

Fix a burning candle on a plate .

• **Observation :-**

The melting wax melts and changes into liquid drops ,then this liquid solidifies again .

Conclusion :-

Melting of wax is a physical change as the shape of wax change ,but its structure doesn't change .



❖ **Activity 2 :- to show that dissolving of sugar in water is a physical change .**

Steps :-

- 1. Taste a spoon of sugar.**
- 2. Add a sugar to a beaker that contain water and stir it with a glass rod until it dissolves, then taste the water .**

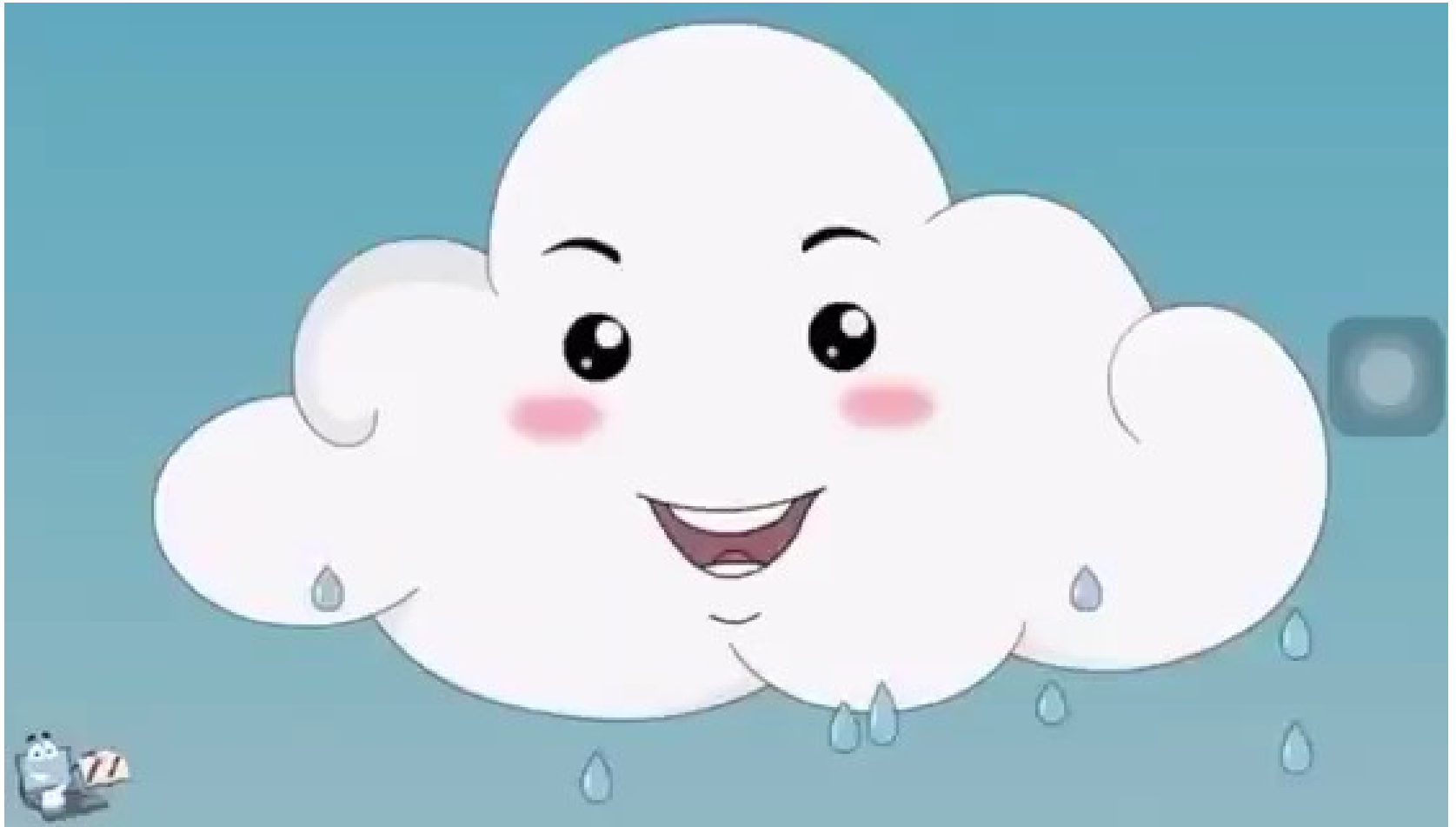
Observation :-

- 3. Sugar has a sweet taste .**
- 4. The shape of sugar changes (disappear) ,but the structure of it doesn't change .**

Conclusion :-

Dissolving of sugar in water is a physical change ,as its shape change (disappear) but its structure doesn't change.

Water cycle :-



Chemical change

- ***It is a change in shape and structure of matter producing a new substances with different properties .***

Examples of chemical change :-

❖ Burning of any matter as wood , sugar and paper.



❖ Rusting of iron .



- ❖ Production of yoghurt from milk .



- ❖ Rot and fermentation of fruits .



Activity 3:-to show that burning of paper is a chemical reaction :-

• Steps:-

1. *burn a white paper .*
2. *Put the produced material (black ash) on a plate, then compare between the white paper and the black ash .*

• *Observation :-*

1. *The white paper changes into black ash .*
2. *The shape and structure of the white paper is different from the black ash that can't be returned back to its original form again*

• *Conclusion :-*

Burning of paper is a chemical change as shape and structure of white paper change .