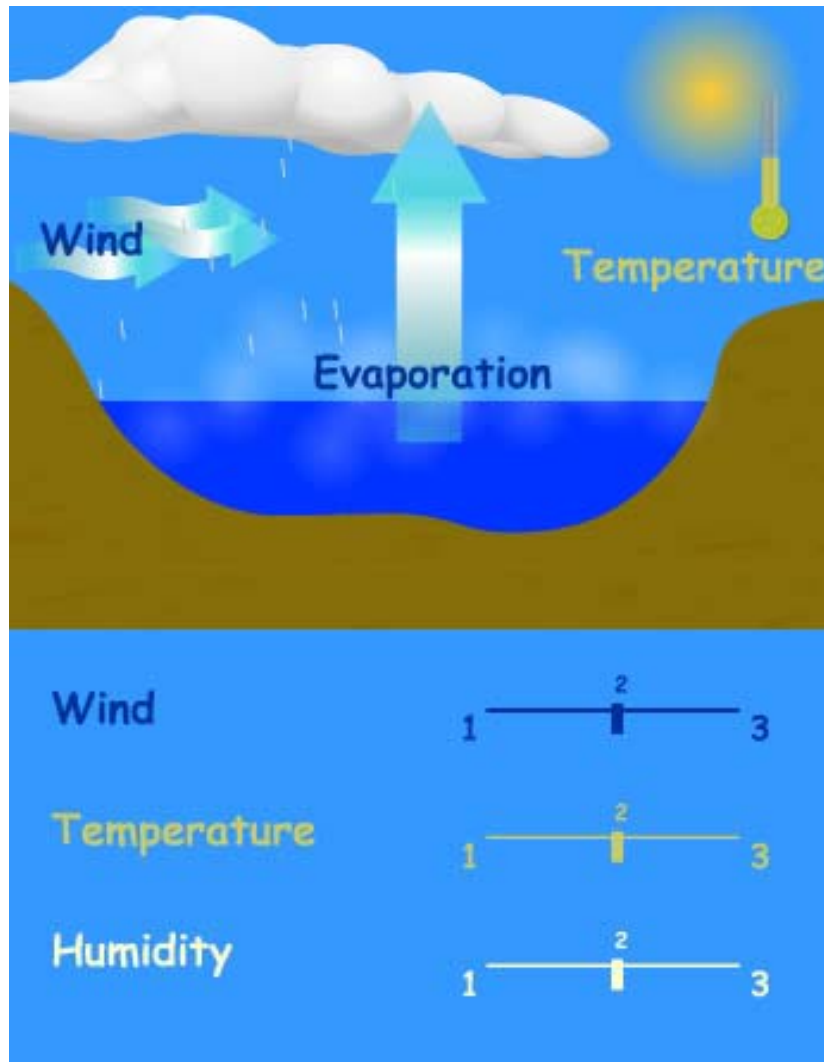


Science and Health

PHYSICAL CHANGE



Australian Government
AusAID



To the Learner

Dear Learner,

Hello my dear! How's your day? Are you okay? Hope that you are okay! If not, change your mood now because we are going to learn a new lesson about changes.



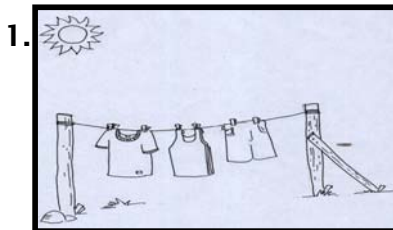
Let's Learn This

There are many kinds of materials found on Earth. These materials provide us countless useful ways but all these materials found in our environment undergo certain changes. One of the changes we are going to learn is Physical Change.

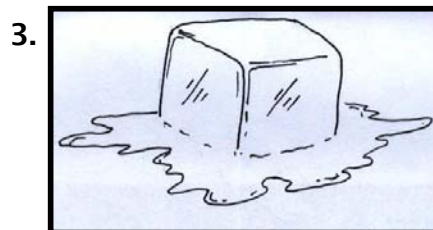


Let's Try This

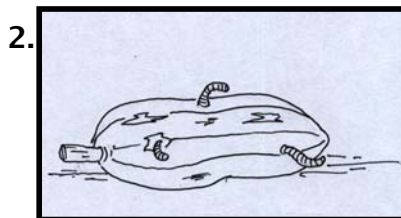
Encircle the numbers that show physical changes.



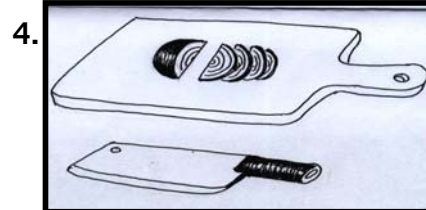
dried clothes



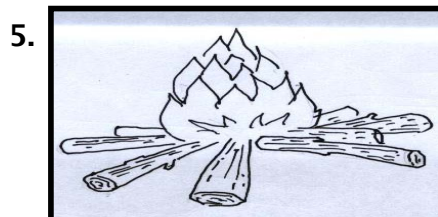
melted ice



rotten papaya



chopped onion



burnt wood

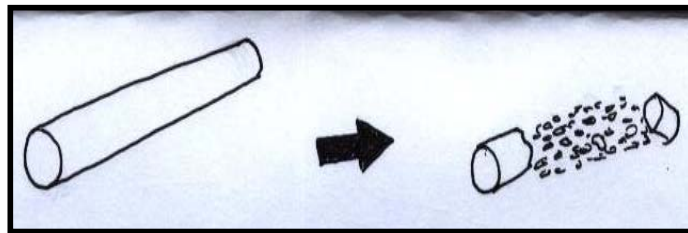


Let's Study This

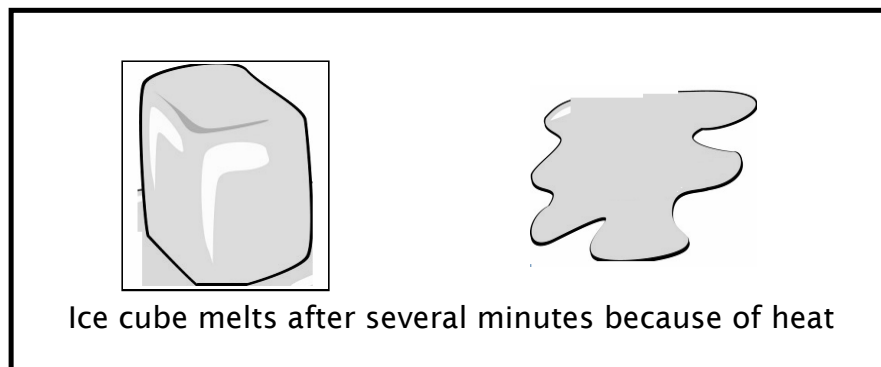
Physical change is one of the changes that matter undergoes. It is a change in size, shape or state without changing their composition.

Different kinds of physical change are brought about by different factors. Force, pressure and heat are the factors that can cause a material to undergo physical change.

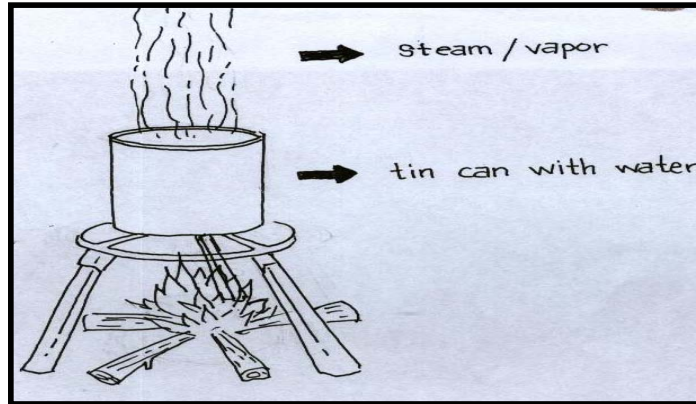
When force or pressure is applied to matter, matter may change in size or shapes. However, the material is still the original material. For example, pounding a piece of chalk. The chalk turns to powder. The composition is still the same.



When heat is applied to matter, matter may change its state or phase. Example of phase changes include liquification, solidification, condensation, evaporation and sublimation. Liquification occurs when a solid changes to a liquid.



Solidification occurs when a liquid becomes a solid. Example, the water turns to ice inside the freezer. **Condensation** involves a gas becoming liquid. Evaporation involves a liquid becoming a gas when it absorbs enough heat. Example, the water heated in the tin can turns into steam or vapor.



Sublimation occurs when heat is present and is absorbed by a material which directly changes it to gas. Example, the naphthalene balls are solid. When they are placed between the piles of clothes in the cabinet for a month, the balls became smaller. The balls change from solid directly to gas (vapor).

Phase or state changes requires either the addition of heat energy (liquification, evaporation and sublimation) or subtraction of heat energy (condensation and solidification).



Let's Do This

Activity - I

I - Problem: How materials change?

II - Materials:

rubber band, stick, candle, piece of paper, wire, stone or hammer.

III - Procedure:

1. Stretch the rubber band without breaking it.
2. Break the stick into three pieces.
3. Tear the paper into four squares.
4. Pound the candle with a stone or hammer.
5. Bend a piece of wire to form a circle.
6. Record your observation by using the table below.

Changes in Materials

Name of Material	Changes in		Factors that brought about changes
	Size	Shape	
Rubber band			
Stick			
Paper			
Candle			
Wire			

Look at your observations:

1. After stretching the rubber band, is it still a rubber band?

2. After breaking the stick, is it still a stick?

3. After tearing the paper, is it still a paper?

4. After pounding the candle, is it still a candle?

5. After bending the wire, is it still a wire?

6. What changes brought about by what matter has undergone?

7. What factors brought about by such changes?

Activity II

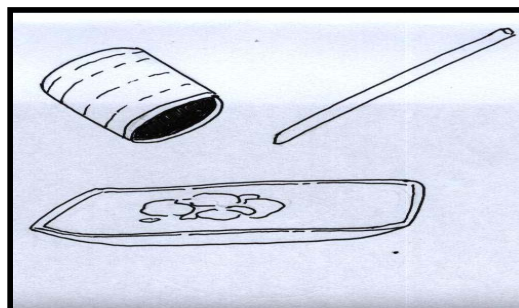
I – Problem: How does some solid change?

II – Materials:

tin can, candle, match, barbeque stick, plate

III – Procedure:

1. Secure the candle in the can.
2. Light the candle.
3. Observe the candle until it is totally melted.
4. Use the stick to empty the can.



5. Answer the following questions.

1. What happened to the candle?

2. When candle melted, what is its state?

3. Is it still a candle?

4. What do you call the process when solid turns to liquid?

5. When you emptied the can, what have you collected?

6. What is its state? Is it still a candle?

7. What do you call the process when liquid turns into solid?

8. What can changes did the candle undergo?

9. What factors brought about such changes?



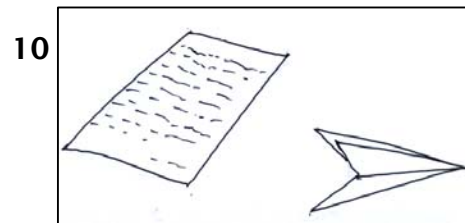
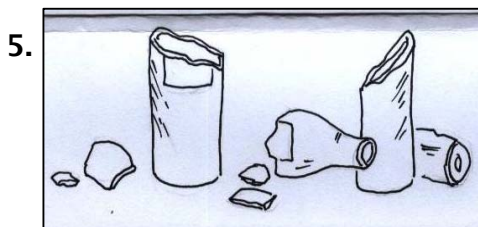
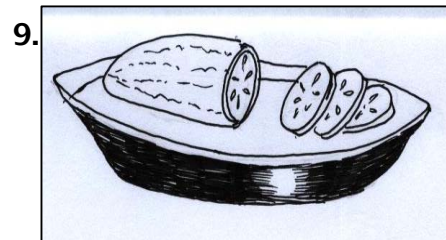
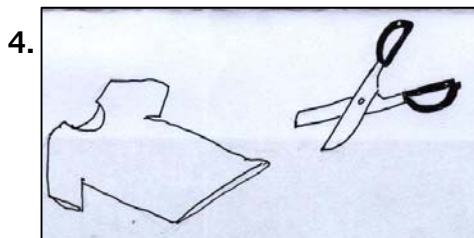
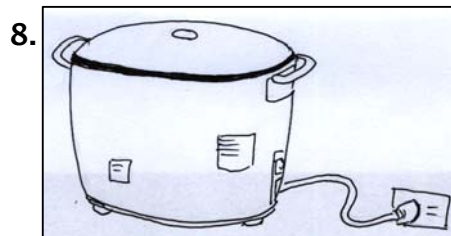
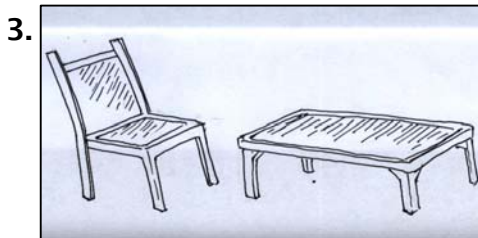
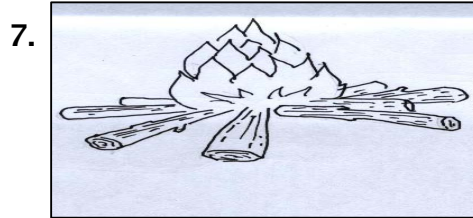
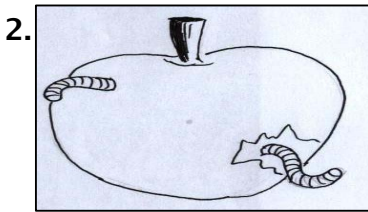
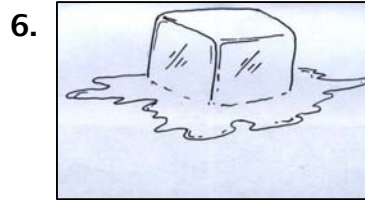
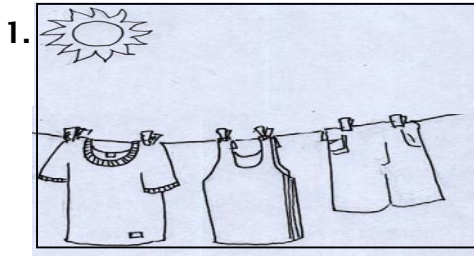
Let's Do More

A. Put √ on the space provided if the material undergo physical change and X if it does not undergo a physical change.

- _____ 1. rotten cabbage
- _____ 2. crushed garlic
- _____ 3. grated coconut
- _____ 4. rusted iron nail
- _____ 5. cutting mat
- _____ 6. pounding chocolate cube
- _____ 7. chopped onion
- _____ 8. bended wire

- ___ 9. melted ice candy
- ___ 10. souring milk

B. Cross out (X) the pictures that show physical changes.

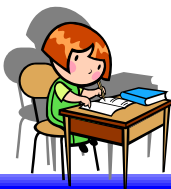




Let's Remember This

Physical change in size, shape or form only without changing its composition.

The application of force, pressure and heat can cause a material to undergo physical change.



Let's Test Ourselves

Choose the letter of the correct answer. Write only the letter on the space provided for.

_____ 1. Which of the following is an example of physical change?

- a. rusted iron nail
- b. water freezes to ice
- c. ripening of mango
- d. environmental change

_____ 2. It is a change of matter in form only, not in composition.

- a. physical change
- b. chemical change
- c. constant change
- d. environmental change

_____ 3. What condition is needed to evaporate surface water

- a. the release of light energy
- b. the absence of heat energy
- c. the presence of heat energy
- d. the absorption of sound energy

_____4. What does diagram **solid + heat + energy** → **gas** means?

- a. melting of ice
- b. freezing of a material
- c. evaporation of a material
- d. sublimation of a material

_____5. Why should you **NOT** keep ice in a rattan basket?

- a. it will melt
- b. it will disappear
- c. it will grow
- d. it will break into pieces



Science Fact File

Physical changes in rocks result in physical weathering. In cold countries, freezing of water in the cracks within the rocks causes physical weathering. The water usually freezes at night if the temperature falls in the cracks and push hard to split the rock.



Answer Key

Let's Try this

①

2

③

④

5

Let's Do This

Activity I

1. Yes, it is still a rubber band.
2. Yes, it is still a stick.
3. Yes, it is still a paper.
4. Yes, it is still a candle.
5. Yes, it is still a wire.
6. Physical changes.
7. The factors that brought physical changes are force and pressure.

Activity II

1. The candle melted.
2. It becomes liquid.
3. Yes, it is still a candle.
4. The process is liquification.
5. A solid wax
6. Solid, yes.
7. Solidification
8. It undergo physical condition
9. Heat

Let's Do More

A

1. X
2. ✓
3. ✓
4. ✓
5. X
6. ✓
7. ✓
8. ✓
9. ✓
10. X

B

1. X
- 2.
3. X
4. X
5. X
6. X
- 7.
8. X
9. X
10. X

Let's Test Ourselves

1. b
2. a
3. c
4. d
5. a