

## UNIT 3

## HEAT AND TEMPERATURE

## 1. Fill in the gaps with the missing information.

*cold*      *sources*      *artificial*      *Celsius*      *warm*      *natural*  
                                  *measure*      *energy*      *Fahrenheit*

Heat and temperature are not the same!

Heat is a form of ..... Heat makes things ..... and hot. There are many ..... of heat. They can be ....., like the Sun, or ....., like a heater.

Temperature is a ..... of how warm or ..... is something. Things become hotter when they gain heat; things become colder when they lose heat. It is measured in degrees ..... (°C) or ..... (°F).

## 2. Match the pictures with the words below. Are the following heat sources natural or artificial? Classify them.



kettle

volcano

bonfire

sun

iron

heater

Natural sources	Artificial sources

## 3. Look at the table. Answer about the heat and temperature of three places around the world.

Country	November (°C)
Brazil	38
Norway	-5
Spain	1

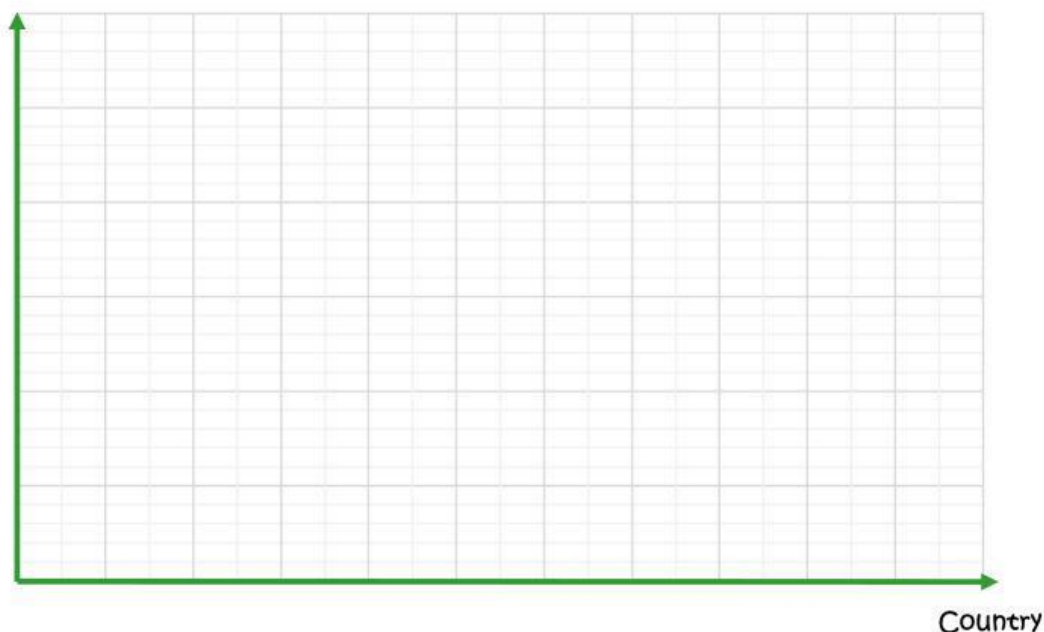
- a) Look at the temperatures in November and July. Are they the same or are they different?

b) Which place is the hottest?

c) Which place is the coldest?

4. Using the temperatures from exercise 3 build a graphic.

Temperature



5. Listen and write. Are the following temperature °Celsius or °Fahrenheit?

a) 37° .....

c) 17° .....

e) ..... °F

b) 99° .....

d) ..... °C

f) ..... °C

6. Fill in the gaps with the missing information. Then, complete the diagram with the states of matter.

*evaporation*  
*fuel*

*three*  
*melting point*

*heating*  
*chemical changes*

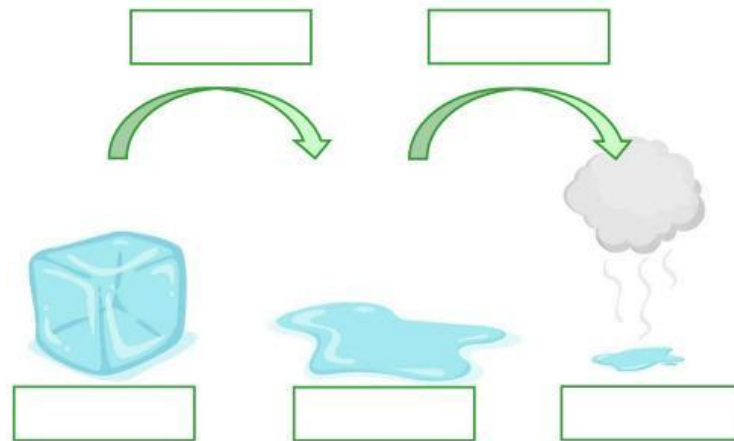
*reversible*

*combustion*  
*temperature*

There are ..... states of matter: solid, liquid and gas. We change the state of matter of different materials by ..... them. This happens because chemical or physical changes take place:

- ..... are irreversible changes. When they occur, a new substance appears.

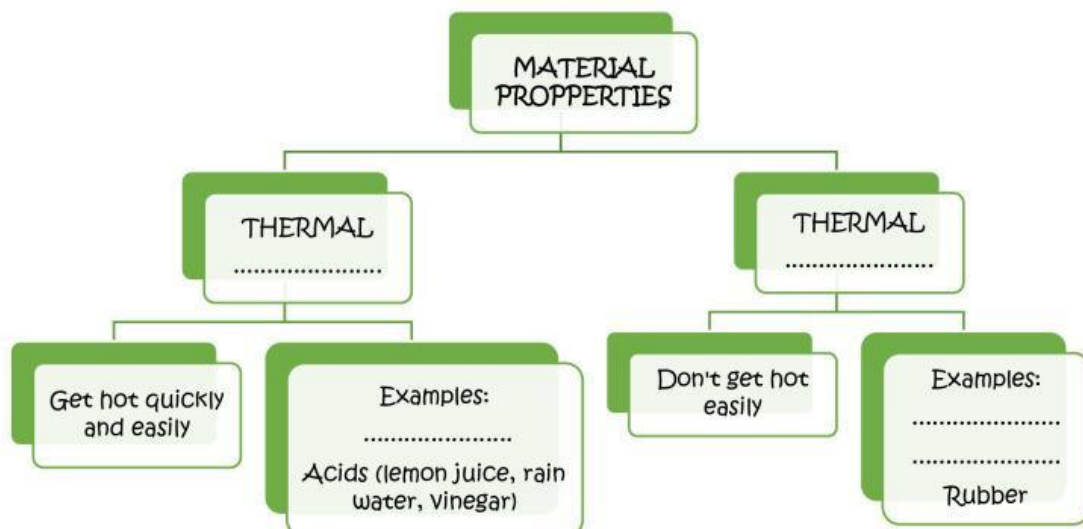
- ..... is an example of chemical change. It is a chemical reaction that takes place when oxygen mixes with .....; as a result, there's heat.
- Physical changes are ..... changes.
  - ..... is a physical change that takes place when a substance turns into vapour.
  - The ..... of a substance is the ..... a substance changes from solid into liquid.



7. Use the internet. Find out the melting points of the following materials. Then, put them in order of their melting points. Start with the lowest.

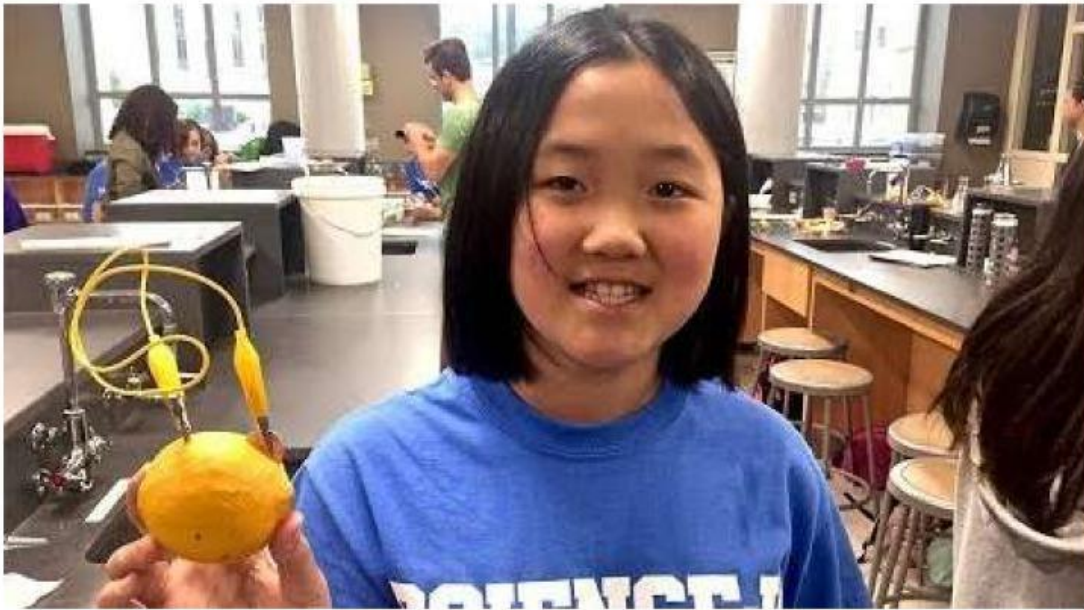
<i>sugar</i>	<i>iron</i>	<i>butter</i>	<i>chocolate</i>	<i>aluminium</i>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

8. Complete the diagram. How do we classify materials?





9. Watch the following video. Can a lemon conduct heat (and electricity)?



a) Which metallic objects do we use to turn a lemon into a battery?

.....

b) Can a lemon turn on a tiny lightbulb?

.....

10. Are the following materials thermal conductors or thermal insulators? Tick (✓) and say what material are they made of.

	CONDUCTORS	INSULATORS	MATERIAL
Metal spoon	✓		Metal
Pencil			
Plastic bucket			
Radiator or Heater			
Rubber gloves			
Lemon juice			
Aluminium			
Ruler			
Silver medal			
Water bottle			
Glass of water			

11. In which ways do we use heat? Fill in the gaps with the missing information.

*use    heat    warm    food    temperature    electricity*  
*energy*

Heat is thermal energy. We use heat in many ways: to ..... water, to heat the air  
....., to cook ....., to produce ....., to .....,  
ourselves, to make a fire, to ..... solar panels or to produce geothermal  
..... These are just some examples, but there are a lot more! Can you think of  
any other way of using heat?

12. What do we use heat for? Order the letters to create words.

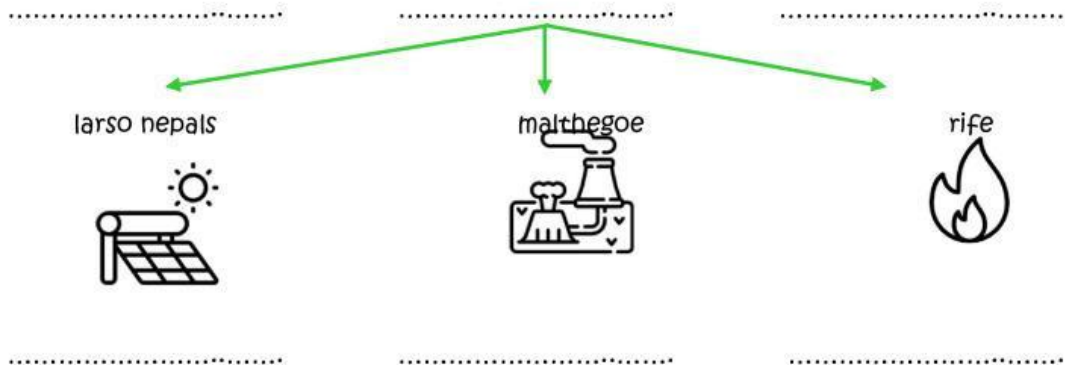
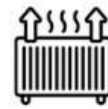
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13. Look at the pictures below. Put a tick (✓) in the cases where heat is useful.

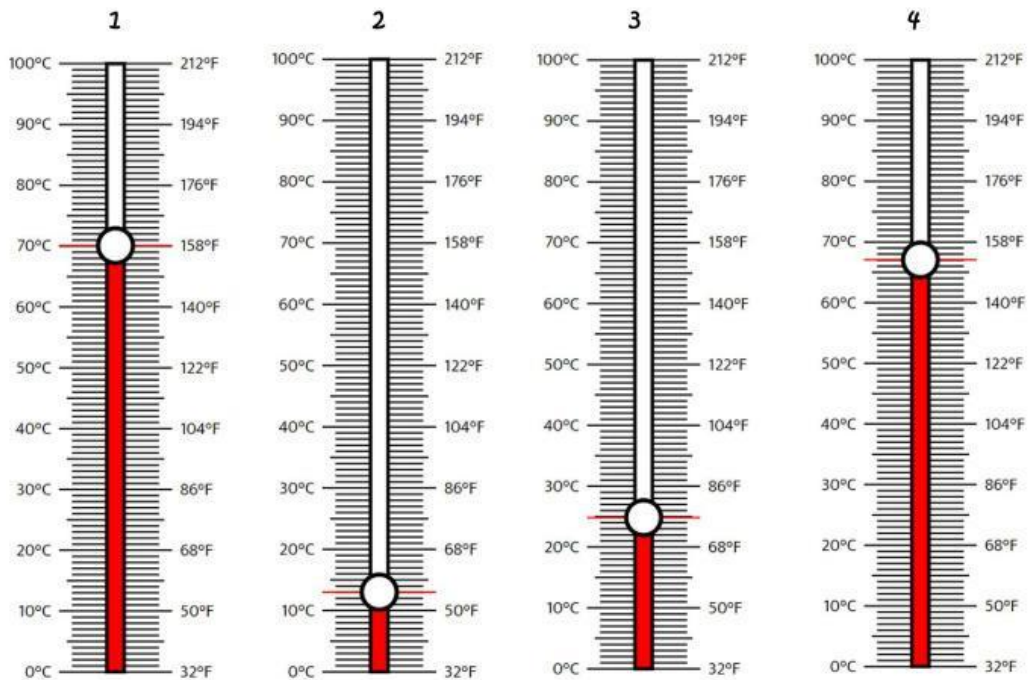


## 14. Complete the sentences about heat transference.

Marcus is baking a cake, so he turns on the oven. After mixing all the ingredients in a bowl, he puts them in the oven. After some time, he removes the cake from the oven and leaves it on the table. The air in the room is cold / hot, so it cools down / heats up the cake. In the meantime, the cake is hot / cold, so it cools down / heats up the air. This way, the temperature in the room will go up / down. The oven also affects the temperature in the room, making it go up / down.



## 15. Look at the thermometers. Write the temperature in °C or °Fahrenheit.



Thermometer 1		Thermometer 2		Thermometer 3		Thermometer 4	
°C	°F	°C	°F	°C	°F	°C	°F