# UNIT 5: MATTER AND ENERGY

Anything we can

, touch,

or smell is

Matter exists in

states:

- Have a definite shape and volume.
- It always occupies the same amount of space.



- Do NOT have a definite shape.
- Its shape depends on the container





- Do NOT have a definite shape and volume.
- They fill the container they are put in.

## PHYSICAL AND CHEMICAL CHANGES.

#### PHYSICAL CHANGE

- It changes the shape or the state
- It does not change the matter into a different matter.

### Change of state:





### Change of shape:

When you apply a force the matter changes its shape nut then it returns to the original shape.

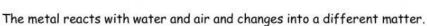
EXAMPLE: When you stretch a rubber band.



### CHEMICAL CHANGE

When matter changes into a

When you burn wood it changes into another different matter called ash.



You



#### MIXTURES

A mixture is something that contains two or more different components.

# 1° type of mixture

You - distinguish the components

### 2° type of mixture

distinguish the components





You can use three methods to separate materials:

EVAPORATIÓN: Separates a

dissolved in a

SIEVING: separates

from

FILTRATION: separates

from



### TYPES OF ENERGY

Energy is important for everything you do.

### THERMAL ENERGY

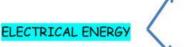
The temperature of a material depends on the amount of thermal energy it has.

Material changes states when thermal energy increase or decrease.

Liquid $\longrightarrow$ thermal energy increases $\uparrow$ $\longrightarrow$ gas	
Solid $\longrightarrow$ thermal energy increases $\uparrow$ $\longrightarrow$ liquid	
Liquid $\longrightarrow$ thermal energy decreases $\psi$ $\longrightarrow$ solid	



#### Electrical conductors:



Materials that

to pass through them.

Example: metal and

Electrical insulators:

- Materials that

to pass through them.

Example:

and plastic.

Other types of energy:

energy: Allows you to see objects.

energy: Everything that move produce this type of energy.

energy: Things that make noise produce this type of energy.

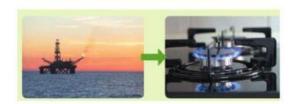


Renewable energy sources:

Non-renewable sources:

NON-RENEWABLE ENERGY: Come from the ground or the seabed.

- It processed into petrol.
- We use it to produce and energy
- People burn it to produce and energy.



People burn it to produce energy.





# RENEWABLE ENERGY: Comes from sun, wind and water.

### SOLAR ENERGY

Solar panels turn the **Sun's light** into electrical or thermal energy.





#### WIND FARMS

Change the **kinetic** energy of wind into electrical energy.





#### HYDROELECTRIC POWER STATION

Change the **kinetic** energy of water into electrical energy.



