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.

- Have a **definite volume**.
- 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**:

Liquid ⟶ Solid

Liquid ⟶ Gas

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.

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CHEMICAL CHANGE

When matter **changes** into a .

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

The metal reacts with water and air and changes into a different matter.

MIXTURES

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

1° type of mixture

You distinguish the components

2° type of mixture

You 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 →	thermal energy increases ↑	→	gas	
Solid →	thermal energy increases ↑	→	liquid	
Liquid →	thermal energy decreases ↓	→	solid	

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ELECTRICAL ENERGY

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.

SOURCES OF ENERGY

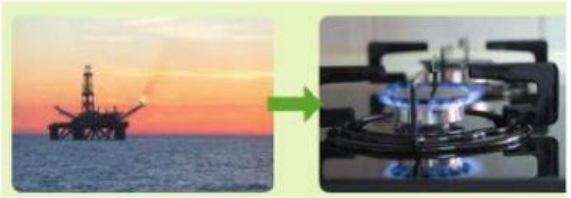
Renewable energy sources:

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.

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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.

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