5th Gymnasium Karditsa, Greece

- Erasmus+ project:

  "Active and responsible citizenship"

Citizenship and Environment

Environmental Issues

- You are constantly surrounded by many different things on this planet earth. Most of the time, we take all these for granted. Your surroundings, be it living or non-living, the geographical area where you live etc. constitute your environment.
- We can define environmental issues as the harmful effects of any human activity on the environment.

Pollution and its Types

- air pollution,
- water pollution,
- garbage pollution,
- noise pollution,
- deforestation,
- resource depletion,
- climate change

This is how we can protect the environment today

Your Actions Really Can Make a Difference

Recycle

Use Reusable Bags

Avoid Taking Cars

- Take public transportation

- Walk

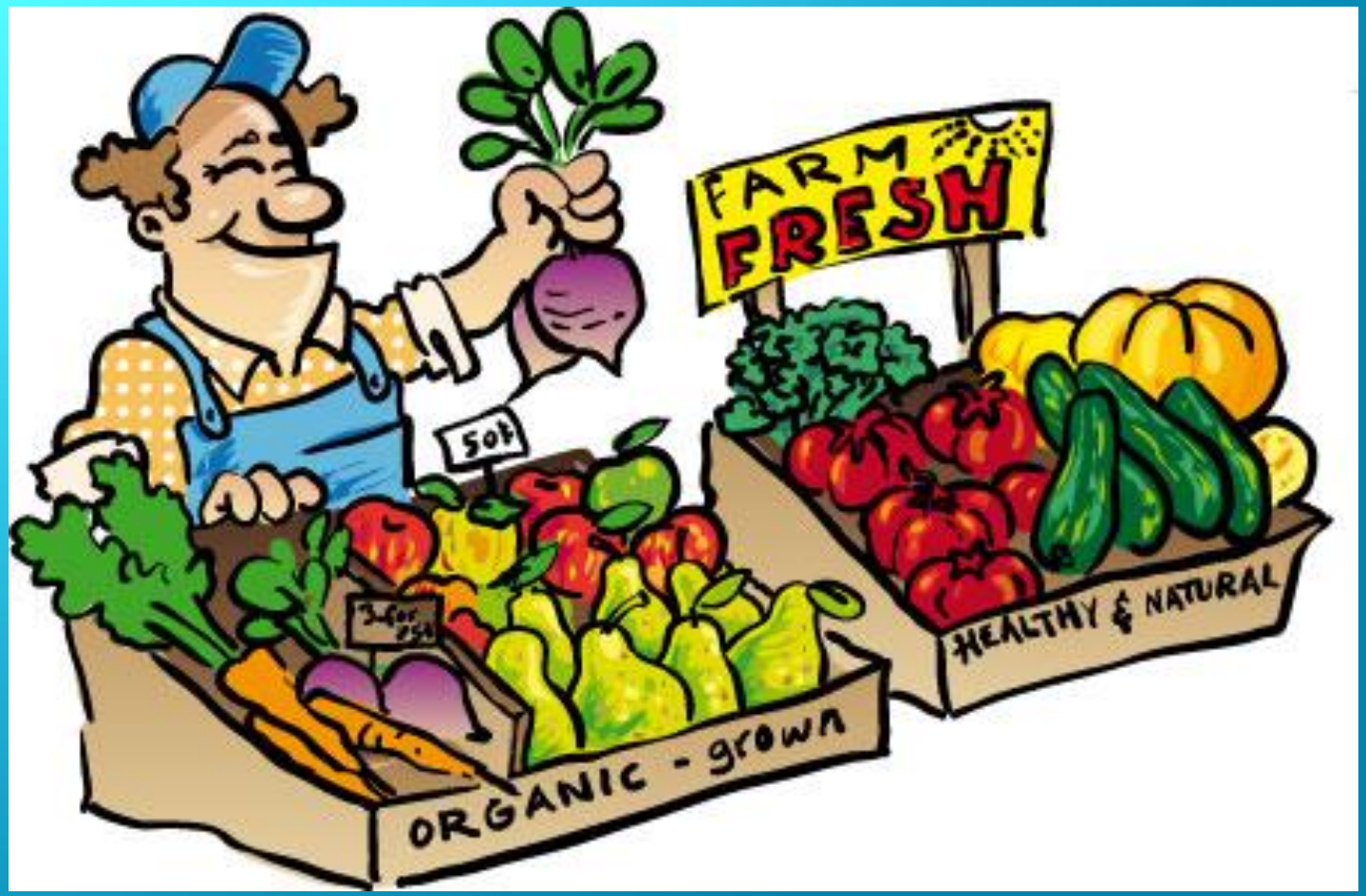
- Ride a bike

Grow your own food

Turn off your devices

Try meatless three days a week

Choose local produce

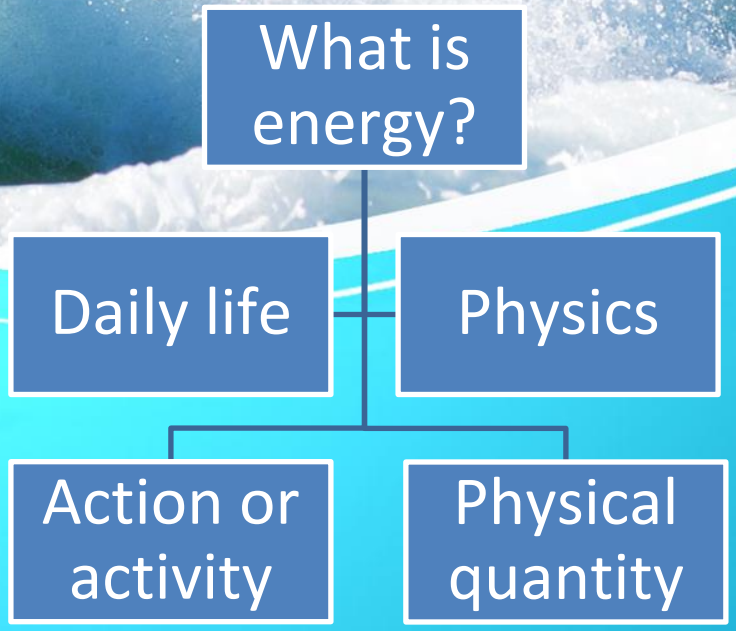


Cut down on your energy use

Learn about the renewable energy sources

RENEWABLE ENERGY SOURCES

Energy



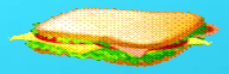
Energy

- We only see its results

Forms of energy

- Kinetic energy
- Dynamic energy
- Electrical energy
- Chemical energy
- Nuclear energy
- Thermal energy

Energy conversions



Chemical → Kinetic

Chemical → Kinetic

Solar → Chemical

Electrical → Thermal

Non-renewable energy

Fossil fuel

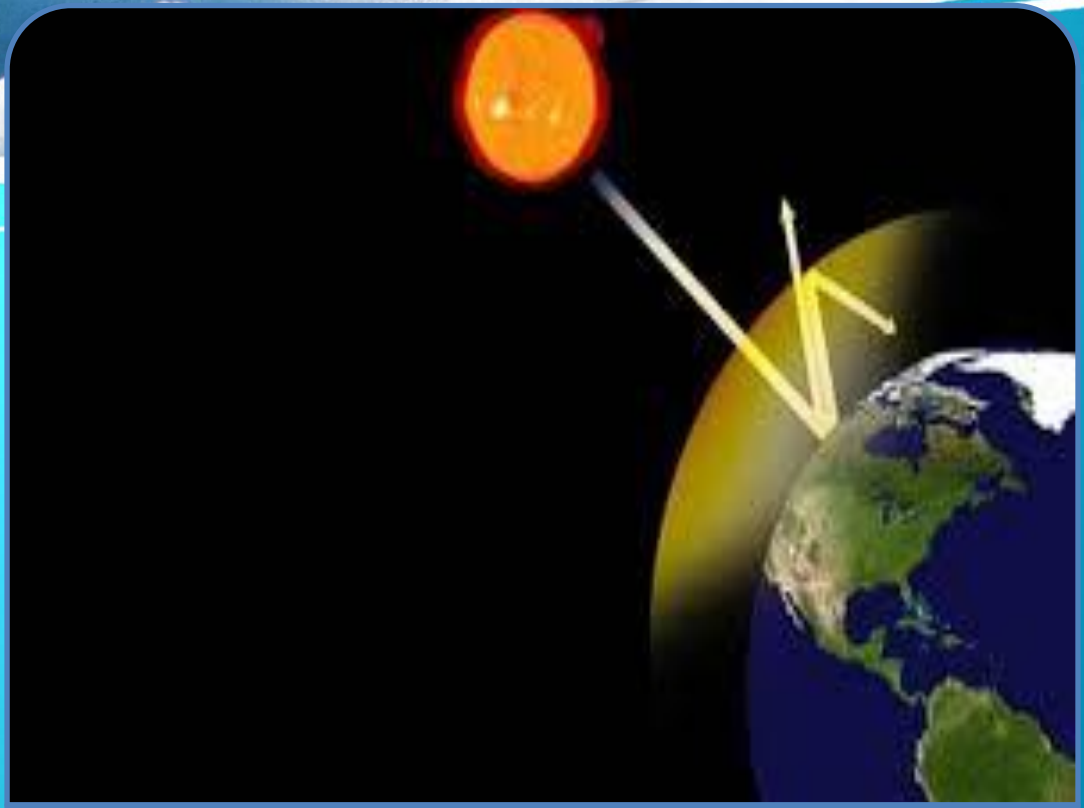
Oil

Natural gas

Nuclear energy

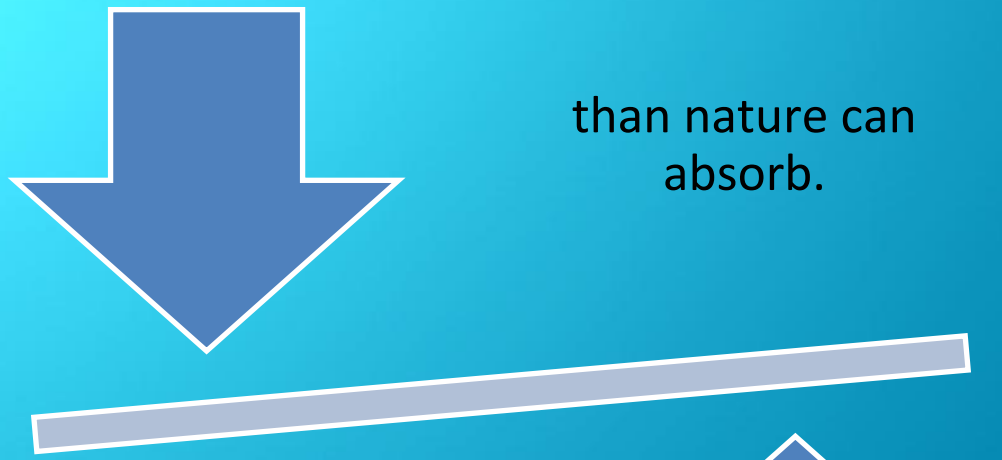
A) They will run out in the future.
B) They produce greenhouse gases like carbon dioxide (CO_2), nuclear waste.

Carbon dioxide (CO_2) is the gas responsible for the greenhouse effect and leads to global warming.



Greenhouse effect

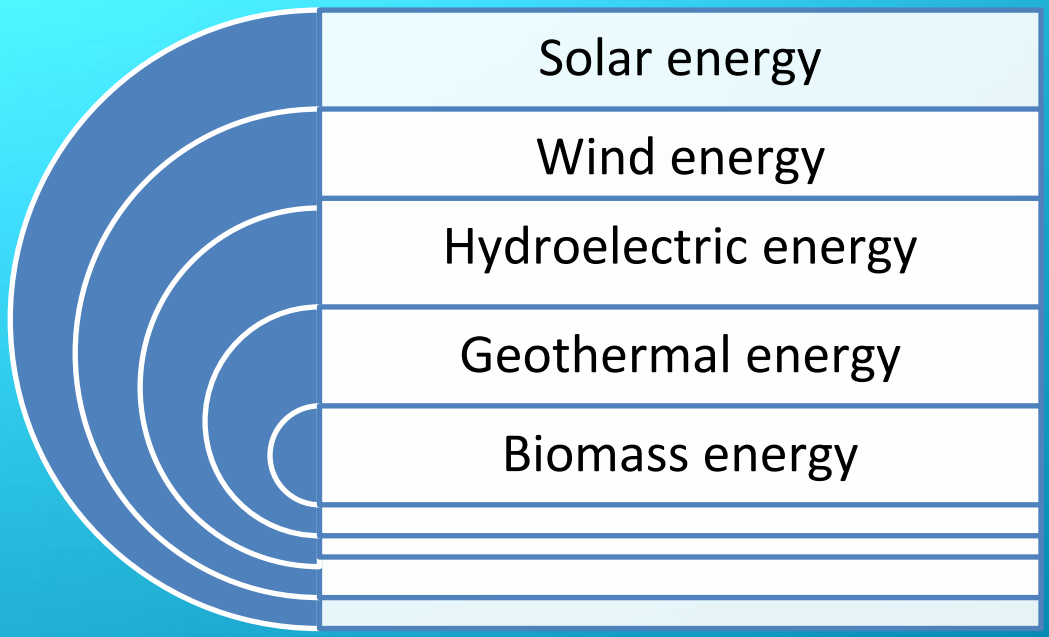
What is the problem?



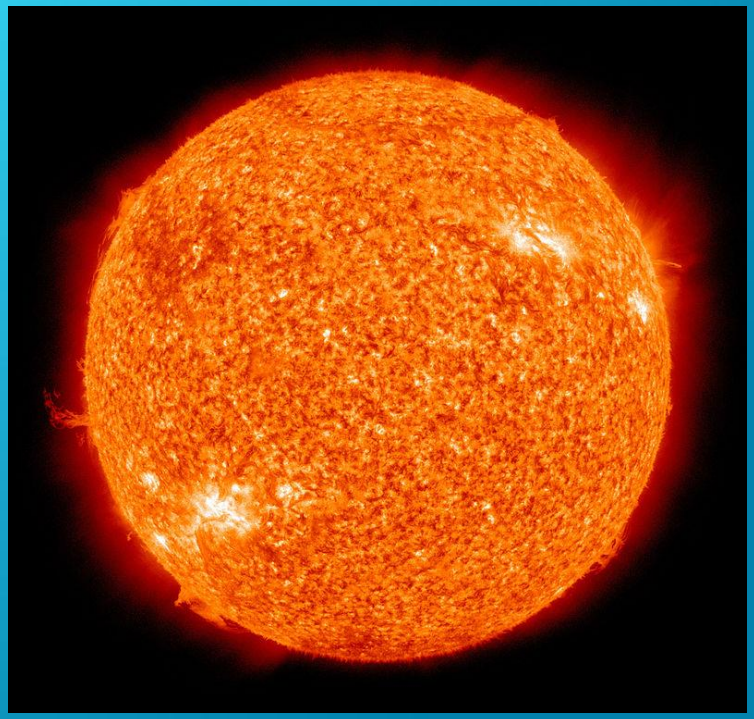
than nature can absorb.

Using non-renewable energy sources we produce more CO2…

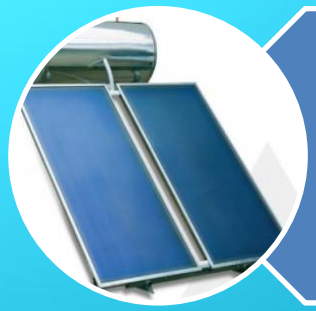
Renewable energy sources



Solar energy



This form of energy can be exploited in two ways:



With thermal solar systems which, the use of suitable collectors, absorb solar energy and store it in the form of liquid heat.

With photovoltaic systems, which convert solar energy into electrical using the photovoltaic phenomenon.

Wind power

Wind power is the energy created by kinetic energy due to wind speed. Solar radiation heats the earth's surface unevenly, and this causes large wind masses to move at high speed from one area to another. This kinetic energy was exploited by humans ever since the ancient times, using windmills and sailing ships.

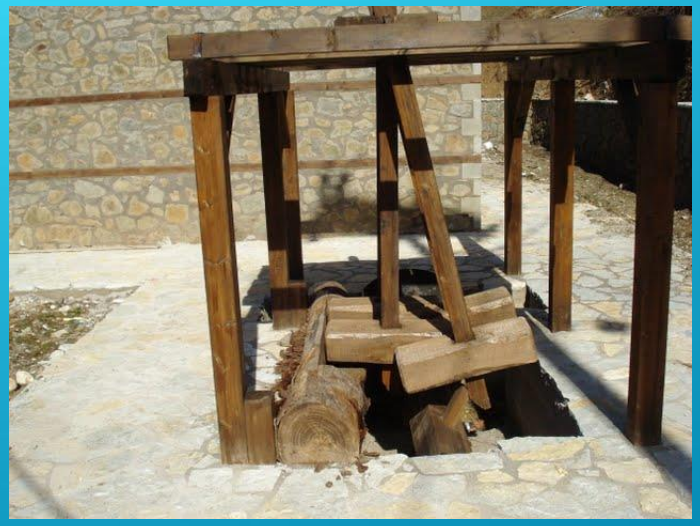
Today the exploitation of the wind's kinetic energy is done by wind turbines. A wind turbine converts kinetic energy into mechanical, and this in turn is converted mainly into electrical.

Hydroelectric energy

Hydroelectric energy exploits the mechanical energy of river and lake water

The water found in any height above sea level has dynamic energy.

Exploitation of hydraulic energy in earlier times

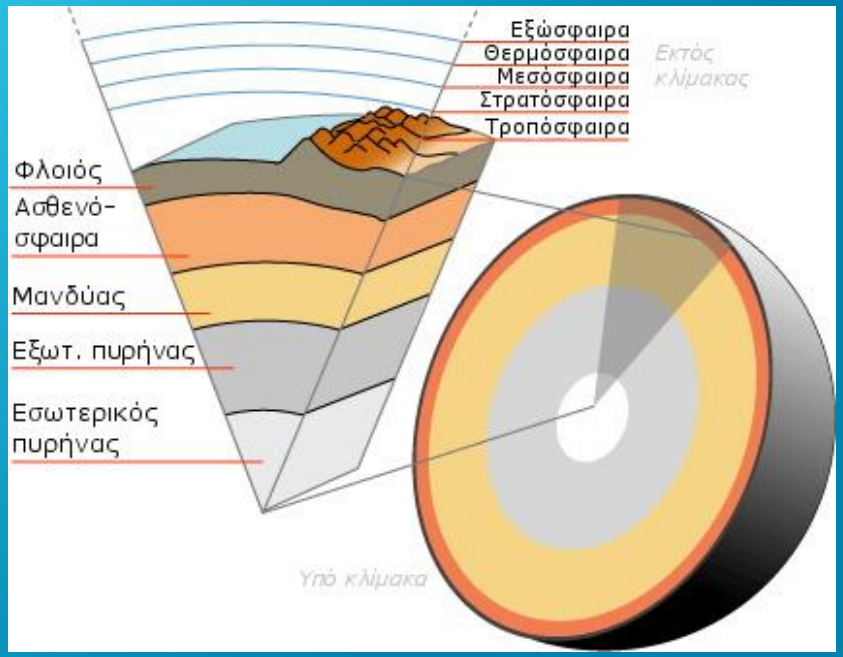


Hydroelectric factory

Today the exploitation of this energy type is through the use of hydroelectric plants.

Geothermal energy

It exploits the energy found in underground hot waters or depositories. Sometimes we can exploit hot steam present inside the earth.



Geothermal energy

Geothermal energy indications are seen in the volcanic activity but also form the geysers of hot water and gas

Geothermal energy applications

Greenhouses

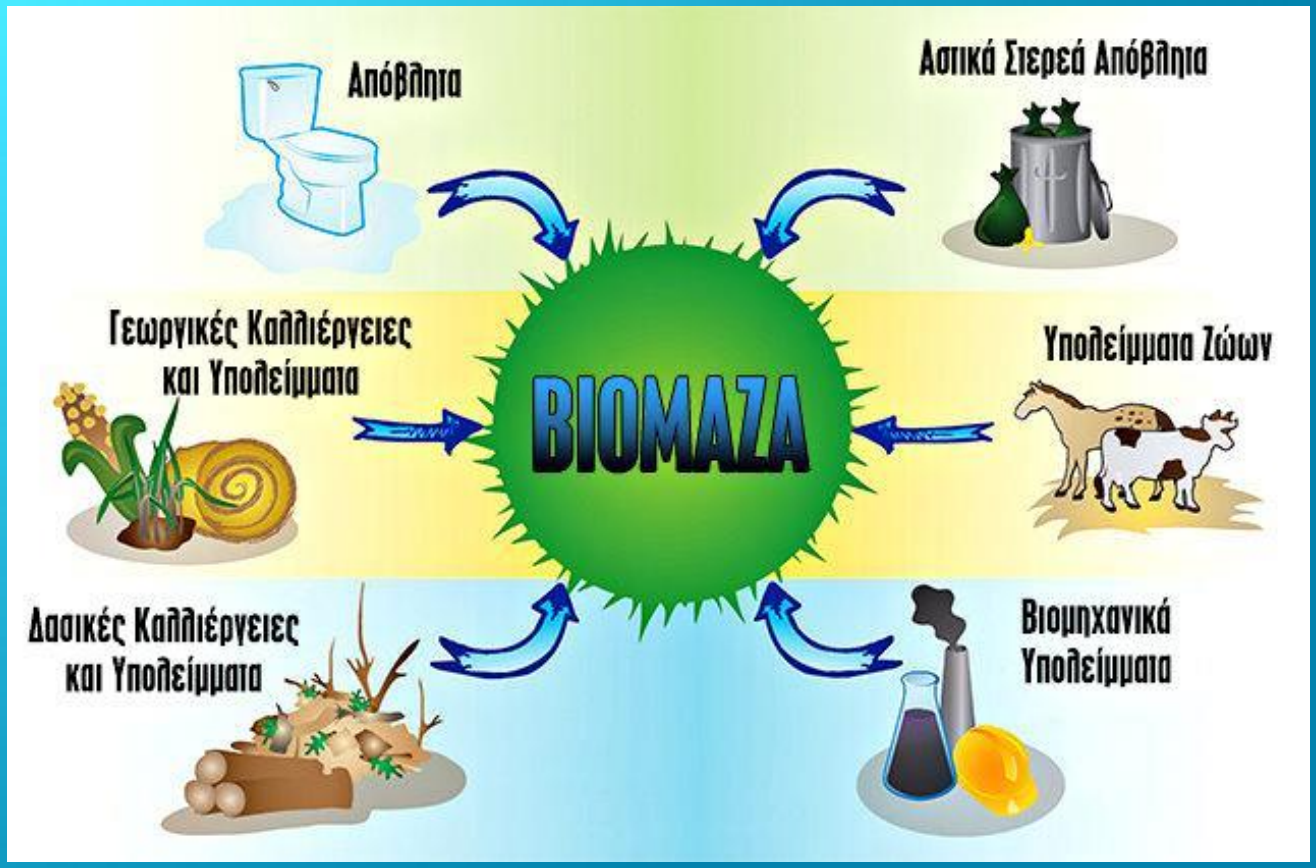
Product drying

Fish breeding

Biomass energy

The energy stored in the form of chemical energy and comes from plants, directly or indirectly

Usually, the biomass chemical energy is converted into thermal through its burning



To save energy we must:

Exploit the winter sun

Close the shutters during the night to prevent energy loss

Open the shutters during the day

To save energy we must:

“Hide” from the sun in the summer

Open the window at night to create natural cooling

Roll down the tents during the day to protect ourselves from the sun

To save energy we must:

Use electric lights with caution

Change lamps to LED

Turn off unnecessary lights in our school and in our house

To save energy we must:

Replace energy-costly appliances with ‘smart’, type A ones

Energy efficiency of electrical appliances

- Aims at informing consumers about their consumption
- Appliances are listed in categories from A to G

To save energy we must:

Recycle and re-use materials

1. Re-use product packages
2. Print and photocopy on both sides of the paper
3. Use recycled materials
4. Recycle plastic, glass, paper, aluminum, batteries.

To save energy we must:

Choose the right way of transport

We go on foot, by bike, and we use public means of transport or, if this is not possible, we share our car with others

To save energy we must:

Inform our family and friends

Take every opportunity to inform people about the energy we can save doing simple things and without spending money

We hope you found this information useful

Thank you!!!