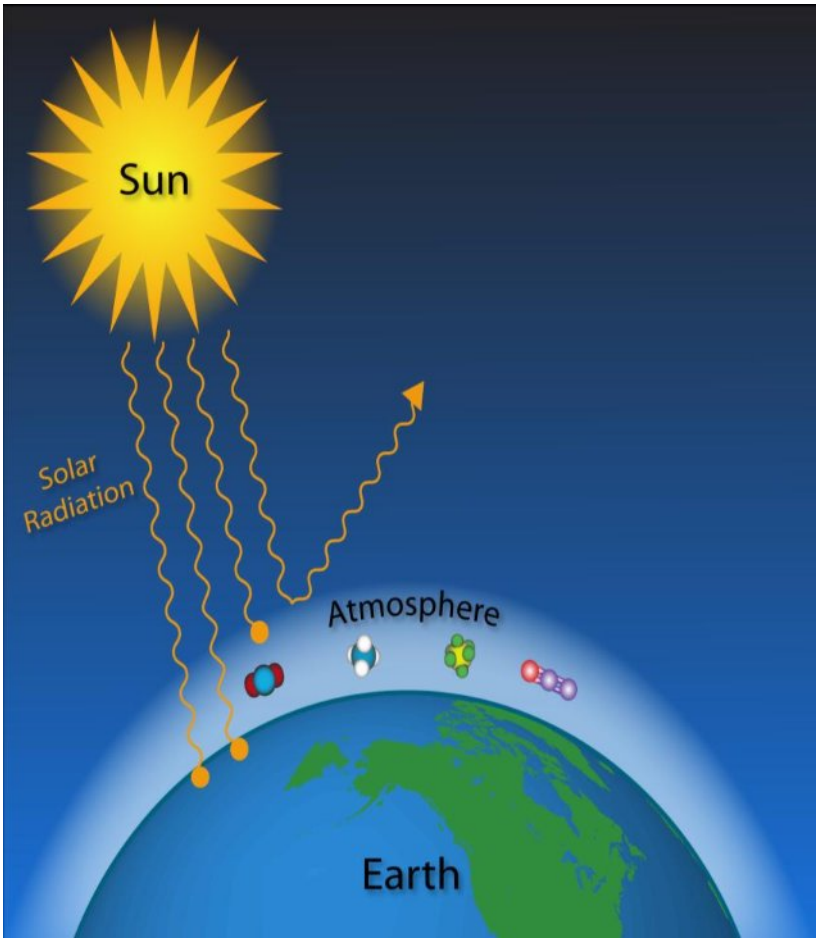
TOPIC 5: THE GASEOUS PART OF THE EARTH



CONTENTS:

Full name: ……..
Date: ……
Class: ……
School: ……
Teacher: ……

VOCABULARY

A
According to: según
Amount: cantidad
Average: media
B
Blindness: ceguera
Breathe: respirar

C
Can: poder, es posible
Change: cambiar
climate change: cambio climático
cloud: nube
CFC gases: gases contaminantes
D
Decrease: disminuir
Depressions: borrasca
Dew: rocío
due to: debido a
dust: polvo
E

F
Filter: filtrar
First: primeramente
Fog: niebla
Formed: formado/a
Found: encontrado
Frost: escarcha

G
Global warming: calentamiento global
Greenhouse effect: efecto invernadero
H
Heat up: calentar
Here: aquí
High: alfo/a
Hold: soportar, aguantar

I
Increase: aumentar
Is made up of: está hecha de

J

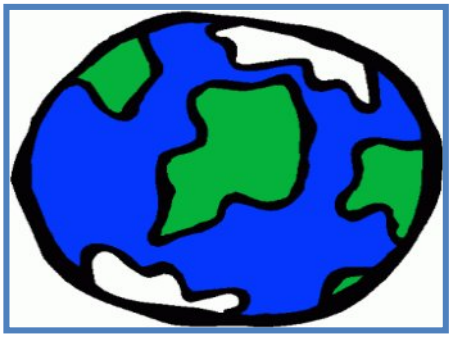
K

L
Later: después
Layer: capa
Less than: menos de
Like: como
Low: bajo/a

M
Made up of: hecha de
Measure: medir
Mixture: mezcla

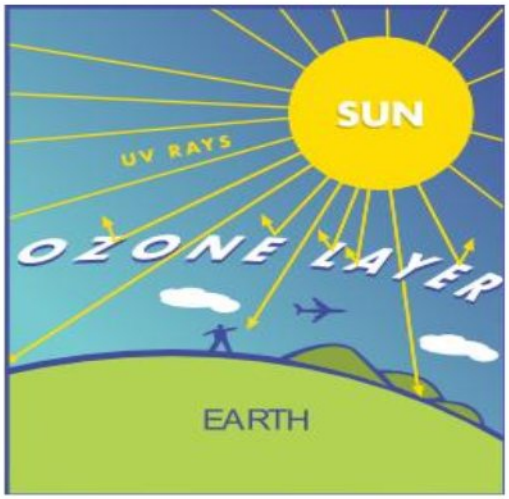
O
Orbit: dar vueltas alrededor
Other: otro/os/as
outer space: espacio exterior
P
Pressure: presión
R
Ray: rayo
Reach: alcanzar
Revolve: girar
Rise: subir, incrementar
S
Sand: tierra
Shape: forma
Show: mostrar, enseñar
Size: tamaño
Skin: piel
Speed: velocidad
Storm: tormenta
Strength: fuerza
Surface: superficie
Surround: rodear
T
Then: luego
Thin: fino/a
Through: a través de
V
Vane: veleta
W
Way: forma, camino
Warm: templado
Was composed: estuvo formada
Weight: peso
Where: donde
When: cuando
Without: sin

1.- Origin of the atmosphere



When the Earth first formed, the atmosphere was composed of dust clouds, gases, and water vapour from volcanic eruptions. Later, the atmosphere also included oxygen from photosynthesis.

2.-Composition and structure of the atmosphere.

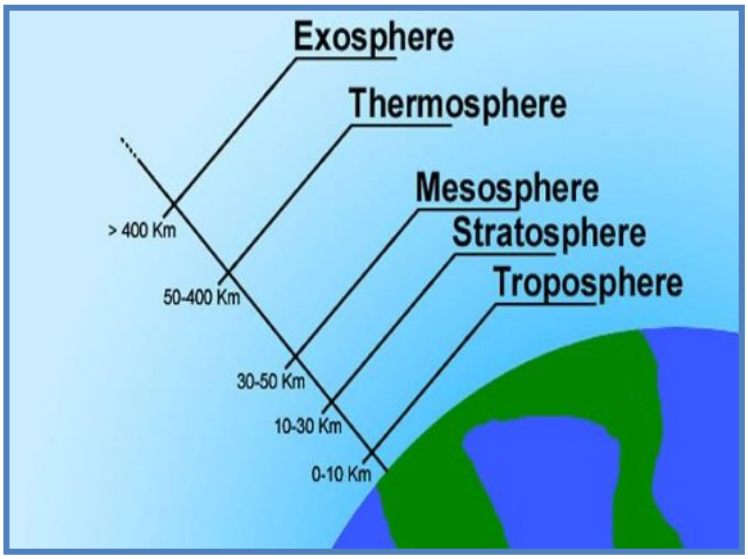


By atmosphere we understand the layer of gases that surrounds the earth. It contains air. Air is a mixture of gases. The most important ones are oxygen, nitrogen, argon, carbon dioxide and water vapor.

The atmosphere is important because:

-it contains the necessary gases to breathe.
-it filters ultraviolet rays from the sun.
-it regulates the temperature of the earth.
-It minimizes the impact of meteorites and other particles from space.

3.- Structure of the atmosphere.



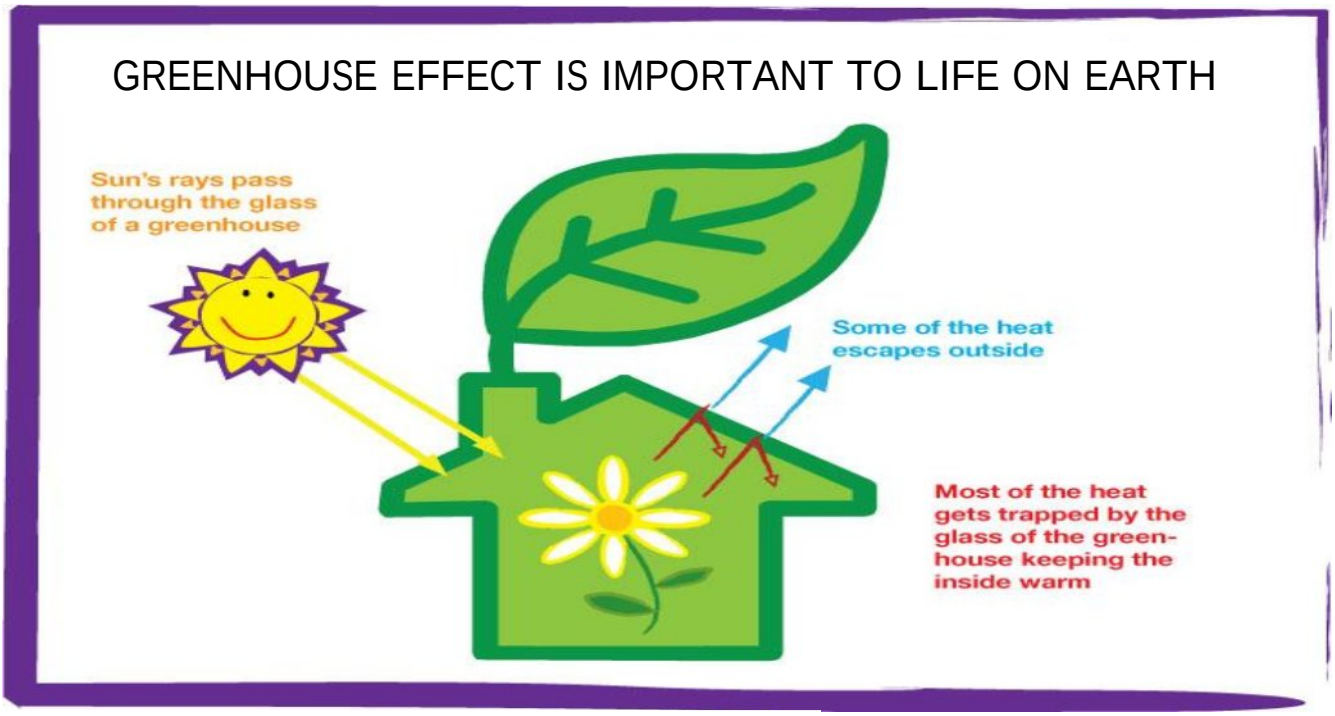
The atmosphere is made up of five layers:

-Troposhpere is the layer where weather occurs and people live.
-Stratosphere contains the ozone layer. Some planes fly there.
-Mesosphere:Hot air balloons fly here. Temperatures are cold.
-Thermosphere has a lot of energy from the sun. Temperatures are very high
-Exosphere: satellites orbit here. The air is very thin. The pressure is low.

4.- The atmosphere regulates the temperature.

The atmosphere regulates the temperature in two phases during the day and during the night.

Solar energy passes through the atmosphere and it heats up the earth. Some heat escapes into space. Some heat travels back to earth due to greenhouse gases like carbon dioxide and water vapor. The natural greenhouse maintains the Earth's temperature in 15 degrees Celsius.

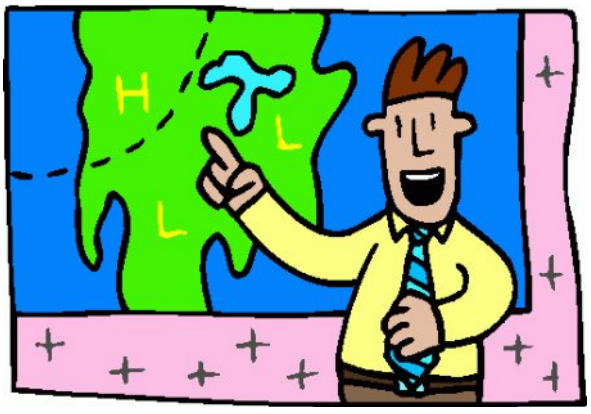


5.- Atmospheric pressure.

Atmospheric pressure is the weight of air on the earth's surface. We measure atmospheric pressure with barometers in millibars. The international unit for pressure is the pascal.

Atmospheric pressure varies with altitude. Pressure at the top of a mountain is less than at the beach.

Atmospheric pressure varies with temperature. Isobars show pressure on a weather map. Depressions are low pressure air masses but anticyclones are high pressure air masses.



weatherman

6.- Natural phenomena due to wind.

By wind we understand air in movement. We measure it with an anemometer and we express it in kilometers per hour. A wind vane indicates the direction of wind.

Hurricanes: violent tropical storms that form over the ocean.

Whirlwinds or dust storms. The air rises in a spiral and collects sand and dust particles.

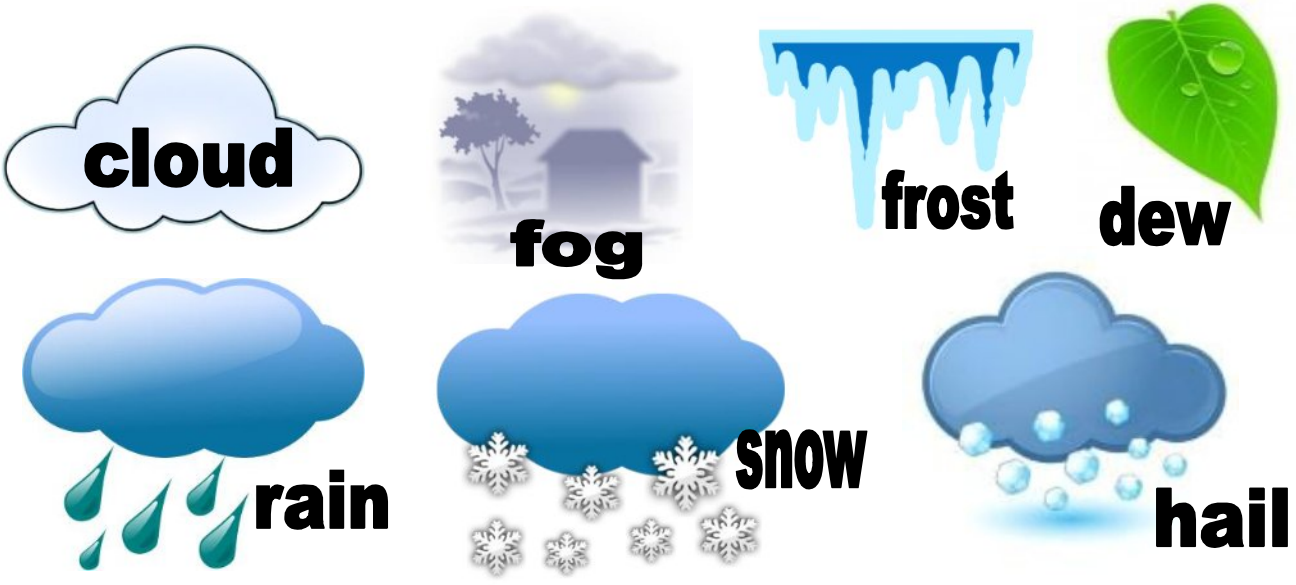
Tornadoes: violent storms with strong winds in a small area of low pressure. They have an inverted cone shape.

7.- Atmospheric humidity

By humidity we understand the amount of water vapor in the air. There are two ways to measure humidity. Relative humidity is the most common way to measure humidity. It refers to the amount of water vapor in the air in comparison to the maximum amount of water that air can hold. Absolute humidity refers to the maximum amount of water vapor found in the air.

8.- Atmospheric phenomena due to water vapour.

There are two types:
-Due to condensation: clouds, fog, frost and dew.
-Due to precipitation: rain, snow and hail



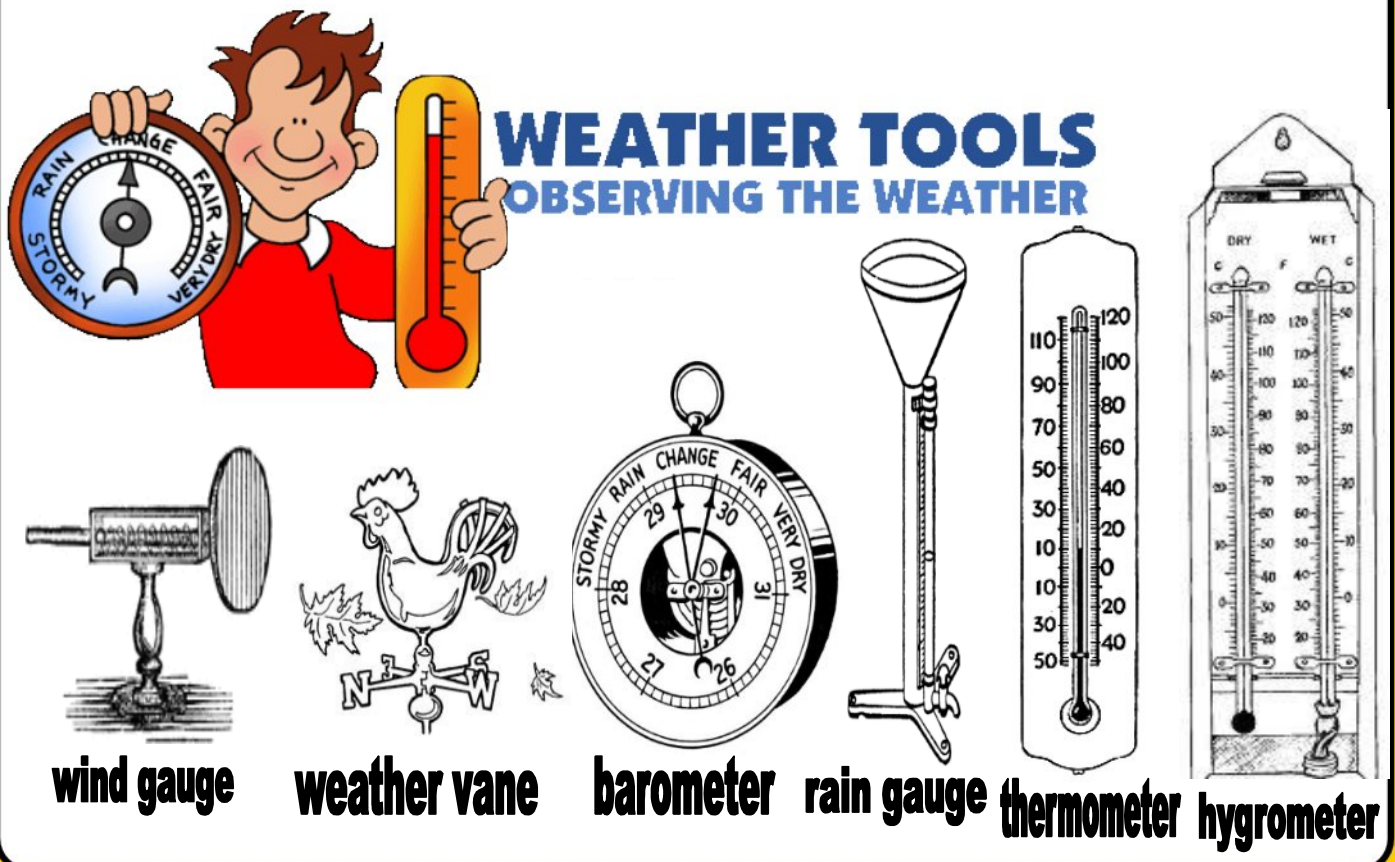
9.-Climate and weather

Weather is the situation of the atmosphere during a short period in a small surface of the Earth. It is very irregular and it changes a lot. The weather can be sunny, foggy, rainy, stormy

The climate is the situation of the atmosphere during a long period of time and a big surface. The climate can be Polar, Mediterranean, Oceanic…

There are some tools to measure atmospheric data and predict the weather:

- Thermometer: measures atmospheric temperature.
- Barometer: measures atmospheric pressure.
- Rain gauge (pluviometer): measures the amount of rain or snow.
- Hygrometer: measures atmospheric humidity.
- Weather vane: shows the direction of the wind.
- **Wind gauge** (anemometer)**:** measures the strength of the wind.



10.-Atmosphere and living things

The living things in an area refer to the vegetation, the fauna and human beings. Vegetation refers to the variety of plants found in a territory. We can classify these plants *according to* their size and appearance: forests, scrubland and grassland. Fauna refers to the variety of animals found in a particular region. The variety depends on the environment. Human beings are people who live in an area. They have a big influence on the environment.

11.- Air and health

The greenhouse effect and the ozone layer permit life in our planet. People are destroying the ozone layer because they often use CFC gases found in fridges, air conditioning units and aerosols.

The destruction of the ozone layer can cause a decrease in the number of algae, plankton and larvae, an increase in skin cancer, eye irritations, cataracts, and blindness.

The increase in the greenhouse effect has some causes: the release of carbon dioxide, deforestation, global warming and climate change.

Air pollution is greater in cities than in rural areas, so asthma, bronchitis, and lung cancer are more frequent in urban areas.

12.- Bibliography:

http://www.oupe.es/es/Secundaria/contenidosbilingues/contenidosbilinguesnaturalsciencesbiology/Galeria%20documentos/1natural%20sc_1%20ESO%20core_interiores.pdf

http://www.educalia.com/files/201212070913051.SCIENCE%20CORONADA%20Y%20AMALIA.pdf

http://es.scribd.com/doc/101033078/Natural-Sciences-1-ESO-Oxford-CLIL

http://www.oupe.es/es/Secundaria/contenidosbilingues/contenidosbilinguesnaturalsciencesbiology/Galeria%20documentos/1natural%20sc_1%20ESO%20core_interiores.pdf

Activity number 1. Fill in the gaps

altitude, troposphere, mesosphere, life, mixture, exosphere, measures stratosphere, temperature, due to

1.- Scientists say that air is a ……... of gases. Oxygen and nitrogen are the most important.

2.- The atmosphere has five layers. People live in the …… , satellites orbit in the ……..……., planes fly in the……. and hot air balloons fly in the ……..……..

3.- Greenhouse effect is important to ……... on earth.
4.- Atmospheric pressure varies with …… and ……

5.- Hurricanes, whirlwinds and tornadoes are natural phenomena …… wind.

6.- A pluviometer is a weather ……..... . It ……... the amount of rain or snow.

Activity number 2. Are these sentences TRUE or FALSE. Correct the false statements

1.-The living things refer to vegetation and fauna. ……

……

2.- climate change is a consequence of the increase in the greenhouse effect. …….

……

3.- Asthma, bronchitis and lung cancer are more frequent in cities. ……..

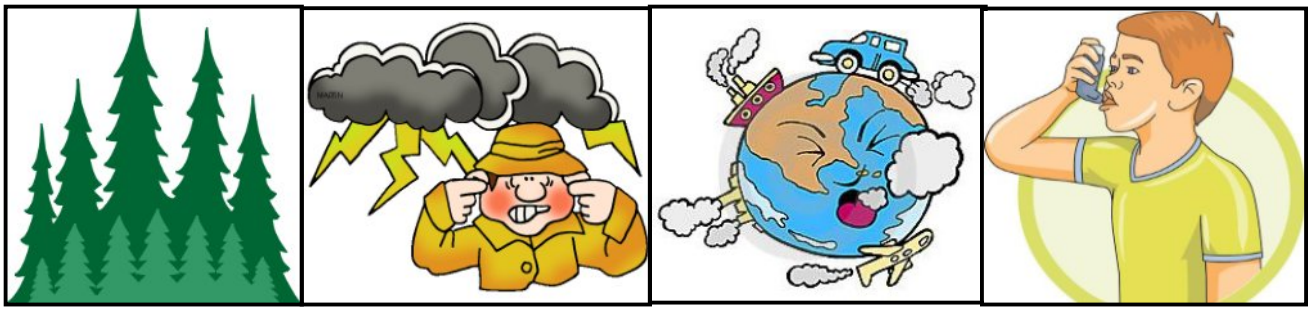
……

4.- The use of CFC aerosols is destroying the ozone layer. ……

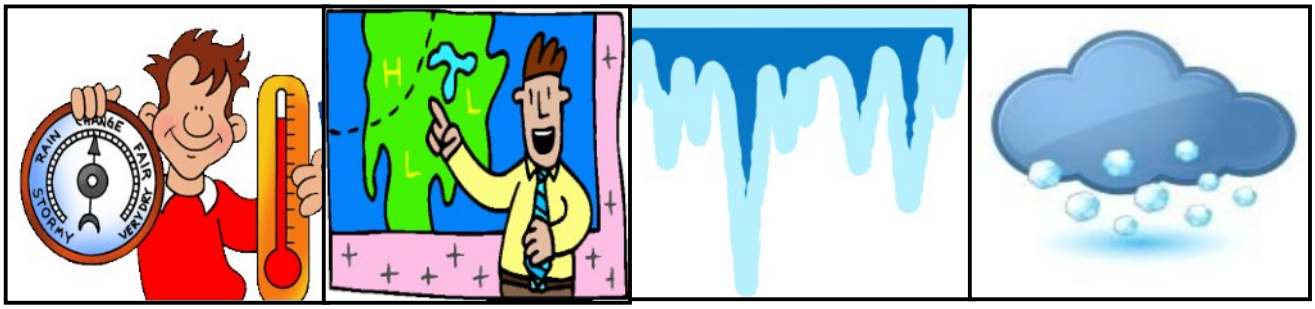
……..

5.- Human beings cannot influence on the environment . ……..

Activity number 3. Pictogram. Fill in the missing vowels



f_r_st st_rm _r p_ll_t_n _sthm_



w_ _ th_ r t_ _ ls w_ _th_rm_n fr_st h_ _l

Activity number 4. Wordsearch. Find these words. Form the secret message with the remaining letters.

T A N E M O M E T E R A T H E
A N O I T U L L O P E T A R T
H L E H I S O U R M O M T H E
R W T M U E M U S T T O A K E
C A R I N M E P R E S S U R E
O F H E T O I R U L L P W D P
S E Y F S U R D V G S H H C X
T Q B E S N D I I K M E V I P
F E Z W C L Z E V T G R V B W
G R A S S L A N D N Y E R M R
S K Z J C B T F R I E A H W P
E N A C I R R U H Z F V X W M
T E E L K Q N J Y O M Q U E Q
P Z W B B R S X Q Y C H Y T S
N O I T A T I P I C E R P O F

ALTITUDE ANEMOMETER
ATMOSPHERE ENVIRONMENT
GRASSLAND HUMIDITY
HURRICANE POLLUTION
PRECIPITATION PRESSURE

Hidden message

THE _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ HER