THE ATMOSPHERE

1.- Explicar a los alumnos qué es la atmósfera y los gases que la componen. Escribirlo en la pizarra para que ellos lo copien.

2.- Explicarle que la atmósfera se divide en cinco capas y que van a ir rellenando un cuadro comparativo. Para rellenarlo tu vas a preguntar a ellos y si lo saben lo vas escribiendo en la pizarra, capa por capa, y si no lo saben tú se lo dices y lo escribes.

LAYER	**ALTITUDE**	**TEMPERATURE**	**CHARACTERISTICS**
TROPOSPHERE			
STRATOSPHERE			
MESOSPHERE			
THERMOSPHERE or IONOSPHERE			
EXOSPHERE			

For example:

- What's the name the first layer of atmosphere?
- How long is it?
- How is its temperature?
- Do you know any characteristics?
- What altitude does the plane fly? (10- 12 km)
- Is there oxygen in all the atmosphere? Where is there the most of the oxygen? (in the troposphere).
- What is the ozone? What is the ozone layer for?...

3.- Una vez relleno el cuadro comparativo cada alumno en su cuaderno, se les reparte una fotocopia con ejercicios sobre la atmósfera.

THE ATMOSPHERE

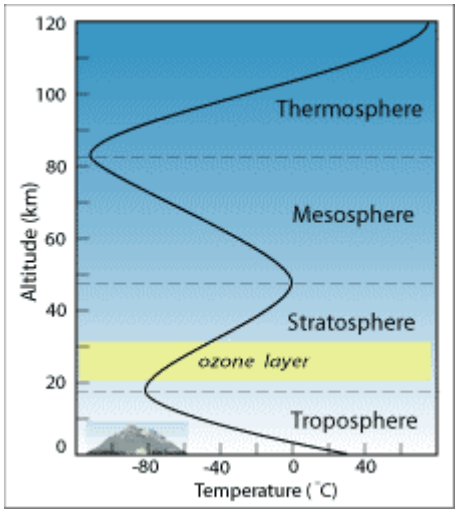
The **atmosphere** is the gaseous envelope that surrounds the Earth and constitutes the transition between the surface of the Earth and the vacuum of the space.
The atmosphere is made of air and this is a mixture of **gases**:
GASPERCENTAGE IN ATMOSPHERE

Nitrogen 78%
Oxygen 21%
Argon 0.9%
Carbon dioxide0.03%
Water Vapor 0.01%

Nitrous Oxide
Ozone
Methane
Neon
Helium

The atmosphere is divided into **five layers**

LAYER	ALTITUDE	TEMPERATURE	CHARACTERISTICS
TROPOSPHERE	From 0 m to 12 km	The temperature decreases when ascending.	It is the first layer above the surface and contains half of the Earth's atmosphere. It's the layer in which we live. Weather occurs in this layer (rain, wind, cloud)
STRATOSPHERE	From 12 km to 50 km	The temperature increases from -60ºC to about 80ºC. Warmer temperatures are due to ozone's reaction with UV light.	Many planes fly in the stratosphere because it is very stable. Also, the ozone layer absorbs harmful rays from the Sun and protects us against the dangerous solar UV-radiation.
MESOSPHERE	From 50 km to 80 km	The temperatures decrease to – 77ºC.	Meteors or rock fragments burn up in it.
THERMOSPHERE or IONOSPHERE	From 80 km to 500 km	The temperature increases up to 1000ºC.	It is a layer with auroras. The upper atmosphere is ionized by solar radiation. It is also where the space shuttle orbits.
EXOSPHERE	From 500 km to 1000 km (above 500 km to the space)	The temperature changes: during the day is 2.500ºC and at night is -273ºC.	In this layer the Earth's atmosphere becomes very thin. The atoms and molecules escape into space. This is the upper limit of our atmosphere, it's a transitional layer that separates the Earth from outer space.



http://www.windows.ucar.edu/tour/link=/teacher_resources/graphs/teach_atmosph_temper.html

juegos interactivos sobre la atmosfera
http://www.windows.ucar.edu/tour/link=/games/games.html

THE ATMOSPHERE

1.- Layer of atmosphere where weather, clouds and smog occur	a) air pressure b) ionosphere c) atmosphere d) nitrogen e) ozone f) stratosphere g) ultraviolet radiation h) exosphere i) troposphere
2.- Force of air determined by temperature and distance above sea level	
3.- Layer of atmosphere that has a high concentration of electrically charged particles	
4.- Most common gas in the atmosphere	
5.- Layer of atmosphere that includes the ozone layer	
6.- The upper layer of atmosphere near the space	
7.- This gas is naturally in the stratosphere but is considered a pollutant in the lower atmosphere	
8.- The ozone layer absorbs	

living beings oxygen ultraviolet rays warming

The atmosphere is very important for _____ because:

1. It contains the_____ we need to breathe.
2. It favours the _____ of the Earth.
3. It protects us from the _____

The main gas in the atmosphere is:

A. Hydrogen
B. Oxygen
C. Water
D. Nitrogen

The atmospheric pressure:

A. It is higher at the bottom of the atmosphere
B. It is the same in any place in the atmosphere
C. It is lower at the top of the atmosphere

The Earth atmosphere is plenty of a gas which doesn't appear in other planets. Which gas is it?

A. Oxygen
B. Nitrogen
C. Carbon dioxide
D. Methane

Why our planet is rich in oxygen?

A. Because it is near the Sun.
B. Because of the plants.
C. Because of the volcanoes
D. Because it is far from the Sun.

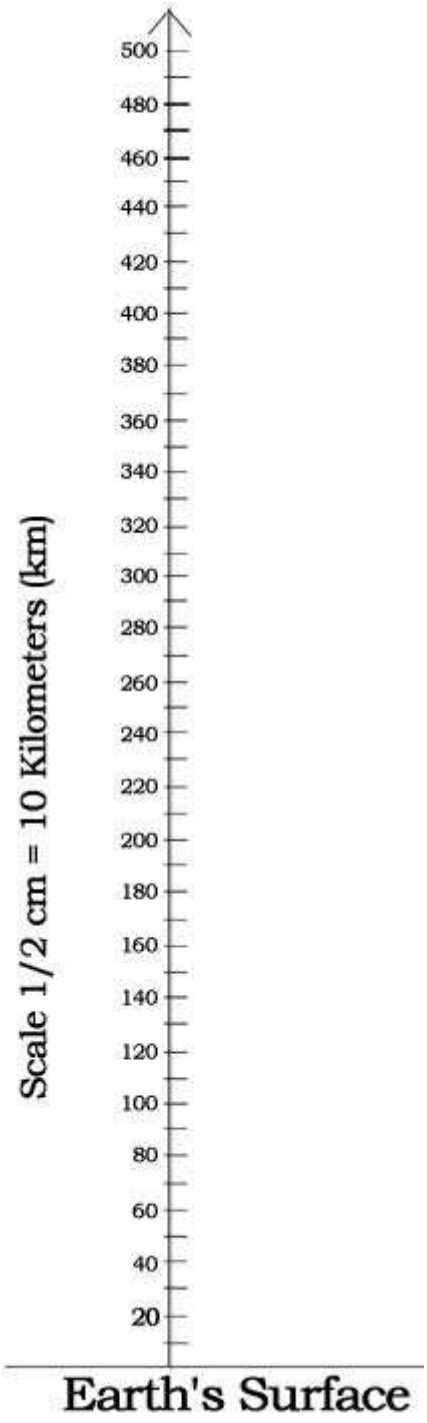
BINGO

Bingo using 15 words. Each student draws a 3x3 table with nine words. Then you define one of the fifteen words. They have to guess which word you are talking about. The students who have this word have to tick it on their paper. Then you choose another word and repeat the process. The students can say LINE or, at the end, BINGO.

ATMOSPHERE
TROPOSPHERE
STRATOSPHERE
MESOSPHERE
THERMOSPHERE
EXOSPHERE
OZONE LAYER
AIR
NITROGEN
OXYGEN
WEATHER
AIR PRESSURE
WATER VAPOR
ULTRAVIOLET RAYS
GASES

1. Approximately 21% of the troposphere is this gas. (oxygen)
2. The mixture of gasses that surround the earth. (Atmosphere)
3. It protects us from the ultraviolet rays (ozone layer)
4. Layer of atmosphere where weather, clouds and smog occur (Troposphere)
5. Approximately 78% of the troposphere is this gas. (nitrogen)
6. It's a mixture of gases. It is in the atmosphere (air).
7. The upper layer of atmosphere near the space (Exosphere).
8. In this layer the temperature increases up to 1000ºC (Thermosphere)
9. Layer of atmosphere that includes the ozone layer (Stratosphere).

Atmosphere



1. Label the following on the model.

- 0 - 12 kilometers (km) troposphere
- 12 – 50 km stratosphere
- 50 – 80 km mesosphere
- 80 – 500 km thermosphere
- above 500 km exosphere

2. Mark the ozone layer at the top of the stratosphere.

3. Mark the orbit of the International Space Station between 309 and 436 km.

Divertida página web en inglés sobre qué es the weather y todos los elementos del clima
http://www.bbc.co.uk/schools/whatisweather/aboutweather/flash_menu.shtml