

Understanding the Earth's Atmosphere

1. Use the words below to complete the paragraph.

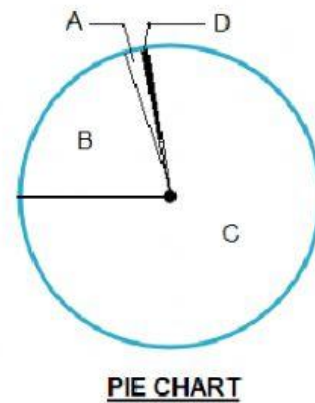
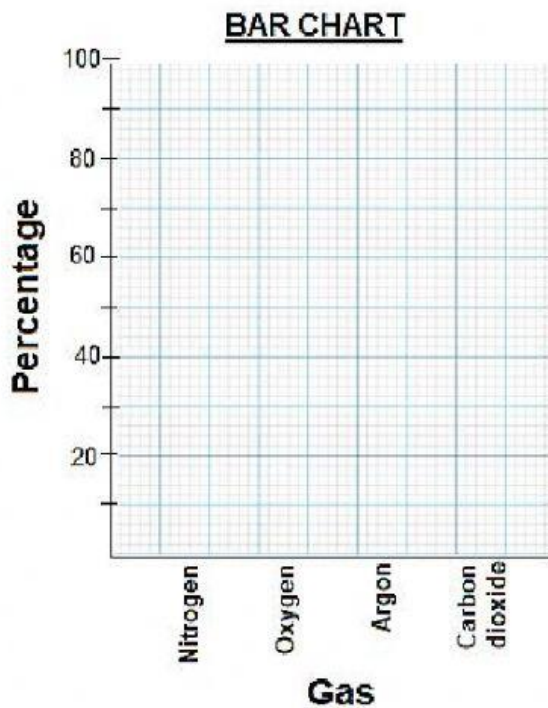
atmosphere	carbon dioxide	condensed	molten	Mars
nitrogen	oxygen	photosynthesized	Venus	volcanic

The two most abundant gases in our _____ today are _____ and _____. The remaining gases, including _____, are found in much smaller amounts. Originally the Earth was a _____ mass and its early atmosphere was probably formed from the gases released by _____ activity. At one point, the atmosphere of Earth was like that on the two planets _____ and _____. When the gases cooled, water vapour in the atmosphere _____ to form the oceans. The amount of oxygen in the atmosphere increased because plants _____, producing oxygen as a “waste” product.

2. Complete the table below showing the percentage of each gas in the atmosphere.

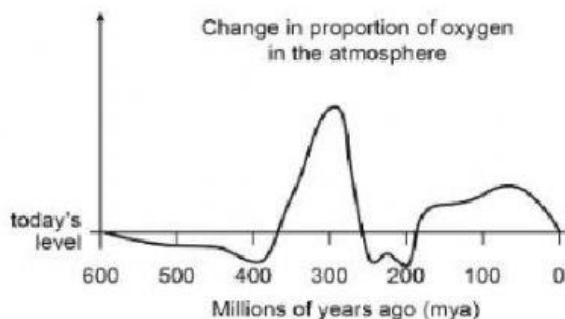
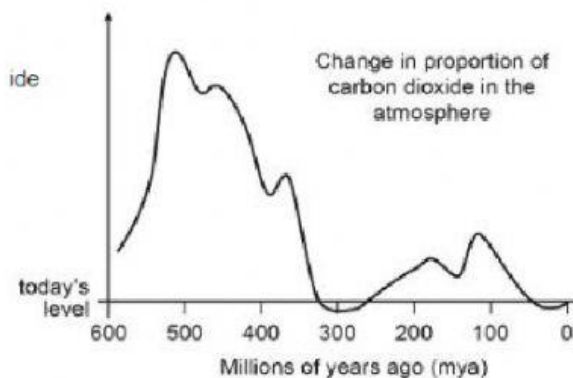
GAS	PERCENTAGE
Nitrogen	
Carbon dioxide	
Argon	
Oxygen	

3. Use the data from the table above to complete the bar graph on the left and the pie chart on the right below.



Gas A _____
 Gas B _____
 Gas C _____
 Gas D Carbon dioxide

4. Look at the graphs and answer the following questions.



- What two gases are being described in the graphs?
 _____ and _____
- Which gas was most abundant 600 million years ago?

- In which year was the amount of oxygen at its highest?

- In which two years was the amount of oxygen at its lowest?
 _____ and _____

4. Below are descriptions of how the Earth's atmosphere and life formed. Drag the descriptions in order from what happened FIRST to LAST.

Jumbled Order

A Carbon dioxide levels rise due to pollution of the atmosphere by human activity. The Earth starts to warm up and this affects weather patterns.

B Life begins in the oceans. Cyanobacteria (very simple plant-like organisms) use carbon dioxide to produce glucose by photosynthesis. Oxygen is a by-product and its levels start to rise.

C There is a balance between the carbon dioxide and the oxygen in the atmosphere due to the processes of photosynthesis and respiration.

D The Earth begins to cool but it is still over 100 °C – too hot for any surface water. Its surface is covered in volcanoes, which release gases to form the atmosphere.

E The Earth starts to cool down below 100 °C. Water vapour can condense and the oceans are formed.

F Land plants start to evolve and begin to photosynthesise. More oxygen is released into the atmosphere and its levels rise rapidly.

G Animals start to evolve due to the increase in oxygen from photosynthesis. They use oxygen during respiration and release carbon dioxide.

H Earth is a ball of molten rock. There is no atmosphere at this time.

Correct Order

5. Find the following keywords in the puzzle below.

ATMOSPHERE OXYGEN NITROGEN MOLTEN CARBON DIOXIDE

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

6. Are the following statements TRUE or FALSE?

- a. The Earth is 3 billion years old. _____
- b. Oxygen is the most abundant gas in the atmosphere. _____
- c. Volcanic activity released the gases into our early atmosphere. _____
- d. Our Early atmosphere was like that on the planets Saturn and Neptune. _____
- e. Plants used up most of the oxygen in early atmosphere, reducing it. _____