

Atmospheric Regions

1. ELEMENTS THAT MAKE UP AIR

- Write down as many English names of chemical elements as you know.

- What do these symbols stand for?

H	N	O	C
Ca	Mg	Hg	Na
Cl	Si	S	Fe
He	Ar	Ne	Cu

- Which gases make up air and what are the proportions of the components?

- Compare your answer with the percentages in the following text.

The air of the atmosphere is a mixture of many 1 _____. In addition, the air holds many suspended liquid 2 _____ and solid particles. However, only two gases make up about 99% of the 3 _____ of air near the Earth. This air is composed primarily of nitrogen (78%) and oxygen (21%), with nitrogen being almost four times as 4 _____ as oxygen. Atmospheric nitrogen and oxygen are diatomic (two-atom) 5 _____, N₂ and O₂. The other main 6 _____ of air are argon Ar (0.9%) and carbon dioxide CO₂ (0.03%). Minute quantities of many other gases are found in the atmosphere, along with 7 _____ matter. Some of these gases, especially water 8 _____ and carbon monoxide CO, vary in concentration, depending on conditions and locality.

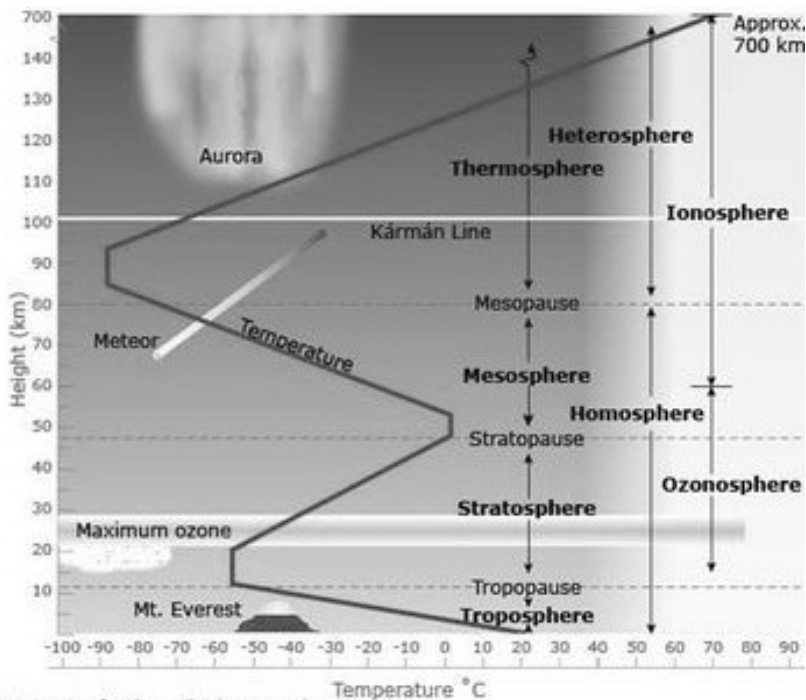
- Complete the text - 3 words will not be needed. This is one of the types of exam tasks.

<i>vapor</i>	<i>pollutants</i>	<i>droplets</i>	<i>volume</i>	<i>gases</i>	<i>particulate</i>
<i>frequent</i>	<i>abundant</i>	<i>molecules</i>	<i>by-products</i>	<i>constituents</i>	

2. STRUCTURE OF THE ATMOSPHERE

- What regions can the atmosphere be divided into? Draw a curve showing the temperature changes in different parts.

- Describe the atmosphere with the help of the diagram. Include the information which answers the questions beside the graph.



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1. What are the different divisions according to:
 - The concentration of ozone and ions
 - Temperature variations
 - Uniformity of composition (how well the parts are mixed)
2. In which section is the greatest mass of the atmosphere? Why?
3. In which part do weather phenomena occur?
4. How does the temperature change in different divisions?
5. Where is the layer of maximum ozone amount?
6. Where do the auroras (beautiful displays of light) form?

3. READING

Source Shipman, Wilson, Todd p. 530

- Match the words and the description of their meanings.

associate ionize charge discharge ionization dissociate charged

- | | |
|--|--|
| 1. property of matter responsible for electric phenomena | 5. to separate or cause to break |
| 2. having an amount of electricity | 6. to change into ions |
| 3. the release of stored energy by a flow of electricity | 7. separation into ions by heat, electrical discharge or chemical reaction |
| 4. to link or connect | |

LISTENING Aurora Borealis Explained <https://www.youtube.com/watch?v=1DXHE4kt3Fw>

eddy - a circular movement of air or water

funnel - a cone-shaped utensil with a tube used for pouring liquids through a small opening in a bottle

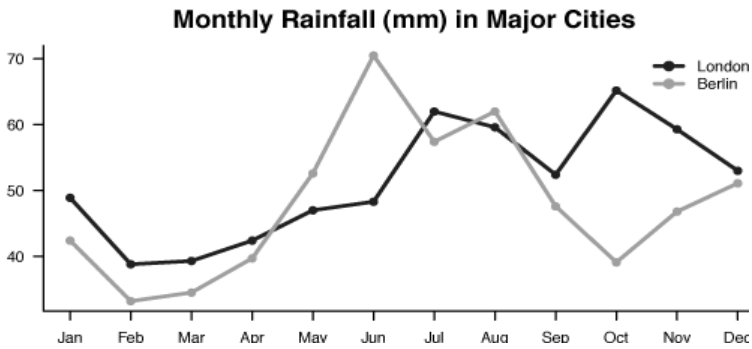
hurl out - to throw something out of a place

1. What do you know about the formation of auroras?

2. Express these sentences in English. Then watch and check your translation.

- Slunce se chová jako obří elektrárna.
- Jaderná reakce uvolňuje energii.
- Světlo vyzařuje ven z jádra Slunce.
- Elektricky nabitý plyn se nazývá plazma.
- Magnetické pole Země odkloní sluneční bouři.
- Plyn ze sluneční bouře proudí podél siločar k pólům.

3. In pairs describe the course of annual rainfall in London and Berlin.



4. Make up a graph showing a changing phenomenon by means of a curve. Do not show it. Describe the graph and the course of the curve to a partner who will draw it according to your instruction. *Say what quantities there are on x-axis and y-axis.*

Sample answer ex.3

In the first month, the average amount of rain fall is 50 mm in London but 43mm in Berlin. In February, we have a considerable decline in both cities. For the next two months we can see a slight rise. In May, MRF of Berlin goes up to 53 mm which is a dramatic growth. On the other hand, MRF in London has a slight growth of 5 mm. In this point MRF of Berlin gets more monthly rain fall than London. Going to June, Berlin's MRF peak at more than 70 mm, but London's has a just small increase. We have some fluctuations for the remaining months with Berlin dropping sharply to 40 mm in October while London's MRF at this time reaches its maximum value.

<https://med-tehuni.wikispaces.com/Tech+2-+Single+Line+Graph-G.105>