UNIT 5.

Exercise 1. Read and translate the text. Learn unknown words.

The Atmosphere Makes Life on Earth Possible

The Earth is a unique planet in the universe. The presence of a stable atmosphere is an exceptional peculiarity of the Earth. The atmosphere is made up of various gases that surround our planet. So, the atmosphere of the Earth defines the weather, climate, and vegetation patterns and makes our life possible. The changes occurring daily are possible due to the presence of air. If there was no air on the Earth, there would be no oxygen and no carbon dioxide to support human and plant life.

Components of the atmosphere. A vast amount of various gases surrounding the earth forms the earth's atmosphere. More than 98 per cent of these gases are found within 26 km of the earth's surface. Farther above the earth, the gases — and the air — gradually thin out. Air in its natural state is a mixture of gases that has no color, odor and taste. Nitrogen makes up 78 per cent of dry air, oxygen makes up 21 per cent, and other gases such as carbon dioxide, helium, and ozone make up the remaining 1 per cent.

Apart from gases, air is always composed of small amounts of water vapor, dust, soot, pollen, and other particles. These particles get into the air naturally through winds, forest fires and volcanic eruptions. Other particles are released from chimneys, automobiles, and other polluters. Together they are the cause of air pollution, the example of which can be haze and smog that hangs over many cities today.

Weather is the condition of the atmosphere for a short period at a specific location. The average weather in a given area over a longer period of time is defined as climate. While the weather can change in just a few hours, climate takes hundreds, thousands, even millions of years to change.

Exercise 2. Give equivalents for:

the universe, оточувати планету, various gases, впливати, particles, виверження вулкану, haze and smog, лісові пожежі,

tasteless mixture of gases, невелика кількість води, carbon dioxide, забрудники, the earth's surface, рослинність, to thin out gradually, надзвичайно спекотно, oxygen.

Exercise 3. Answer the questions:

1. What are the components of the atmosphere?
2. Name the characteristic feature of the Earth that makes it exceptional among other planets.
3. Why are some scientists concerned about the atmosphere's levels of carbon and ozone?
4. What is the role of oxygen in our life?
5. What is the atmosphere? Where is it found?
6. What does the air contain?
7. Give the definitions of weather and climate.

Exercise 4. Insert the prepositions if necessary:

smog … cities, the condition … the atmosphere, small amounts … dust, to influence … the distribution … climates, the planets … the solar system, very cold … night, thousands … miles, tasteless mixture … gases.

Exercise 5. Rearrange the letters in the anagrams to form equivalents for the Ukrainian words.

asruec - поверхня
seapicltr - частинки
osrelutlp - забрудники
nyemcih- димохід, комин
titedalu - широта
egevnotati - рослинність
gyxoen - кисень
turexim - суміш

Exercise 6. Choose the correct words to complete the sentences. Translate them into your native tongue. Say whether you agree or disagree with the following statements.

1. The atmosphere is …… of gases.
   consists of *made up* *comprise*
2. Two of them that modern scientists ……. are carbon dioxide

and ozone.

look forward *keep up* *concern about*

3. Temperature, wind, moisture and atmospheric pressure are those conditions that …… the creation of weather.

generates *insist on* *promote to*

4. Changing atmospheric conditions can create ……. weather.

vivid *violent* *virtual*

5. Such …… as thunderstorms, typhoons, tornadoes and hurricanes can be very dangerous and destructive for everything on their way.

natural disasters *natural habitat* *natural reserves*

6. Tornadoes are rotating flows of air. Winds of a tornado can reach the …… speed of up to 480 km per hour.

speed *length* *hight*

Exercise 7. How much do you really know about the atmosphere surrounding you? Read the information below to find some interesting facts about Earth's atmosphere.

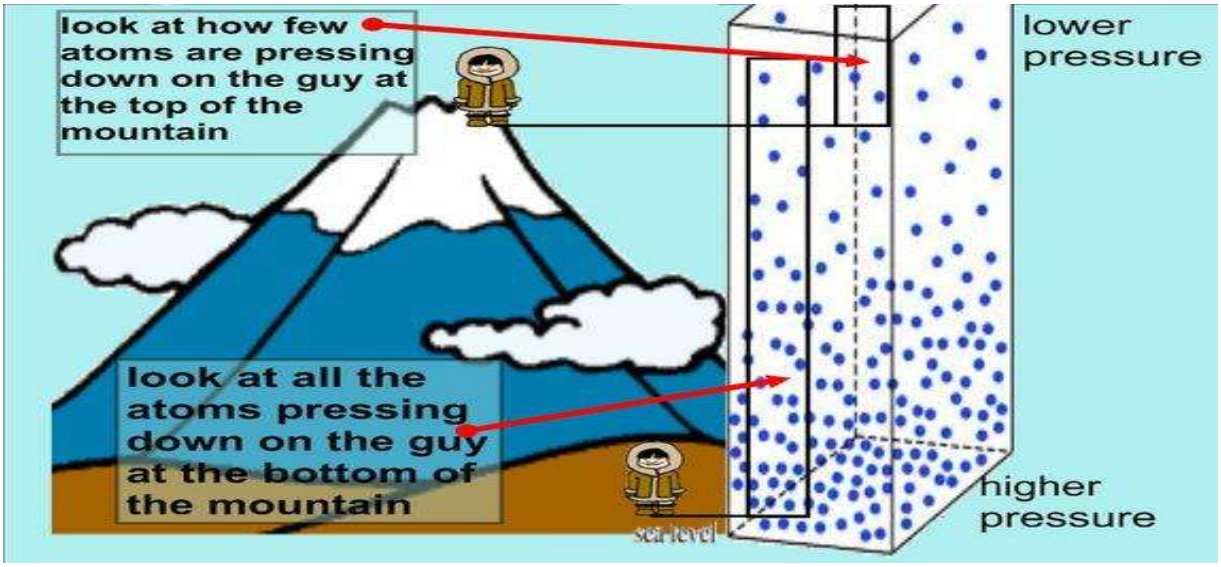
Fill in: *stroke, greenhouse gases, altitude, speed, are formed, seen, mix, undergone, to destroy, thicker,*

1. The Earth's Atmosphere is a …… of gases and is 480 km thick. Some of them are Nitrogen, Oxygen, Argon, Carbon dioxide, Neon and many others.

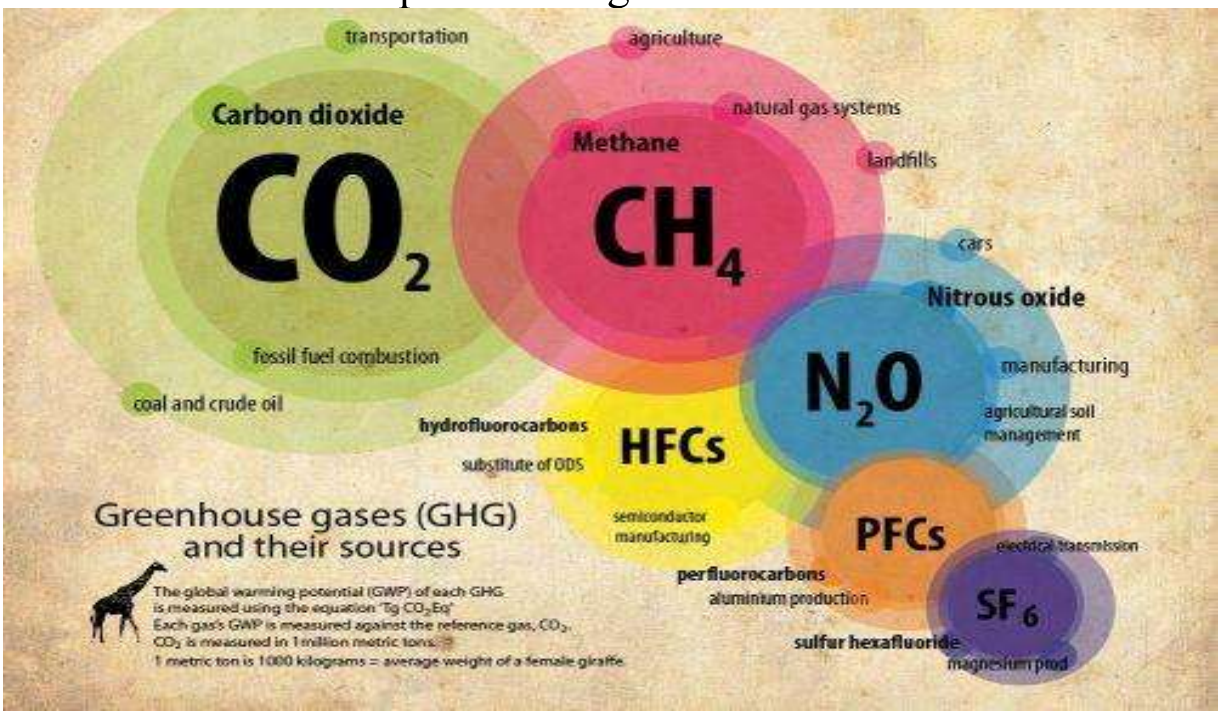
2. Have you ever seen jets leaving white trails? They are usually formed as a result of mixture of the cold atmospheric air and the hot humid exhaust. The more humid the atmosphere, the ……. the contrails.

3. Polar light, also known as Auroras, can be …… in regions of high latitude. It is the shimmering light seen at night. Auroras are formed due to charged particles from the Sun striking the upper atmosphere above the poles.

4. With the increase of ……. the atmosphere becomes thinner. The air pressure in the highest layer is extremely low due to its high altitude and the distance between the molecules it has.

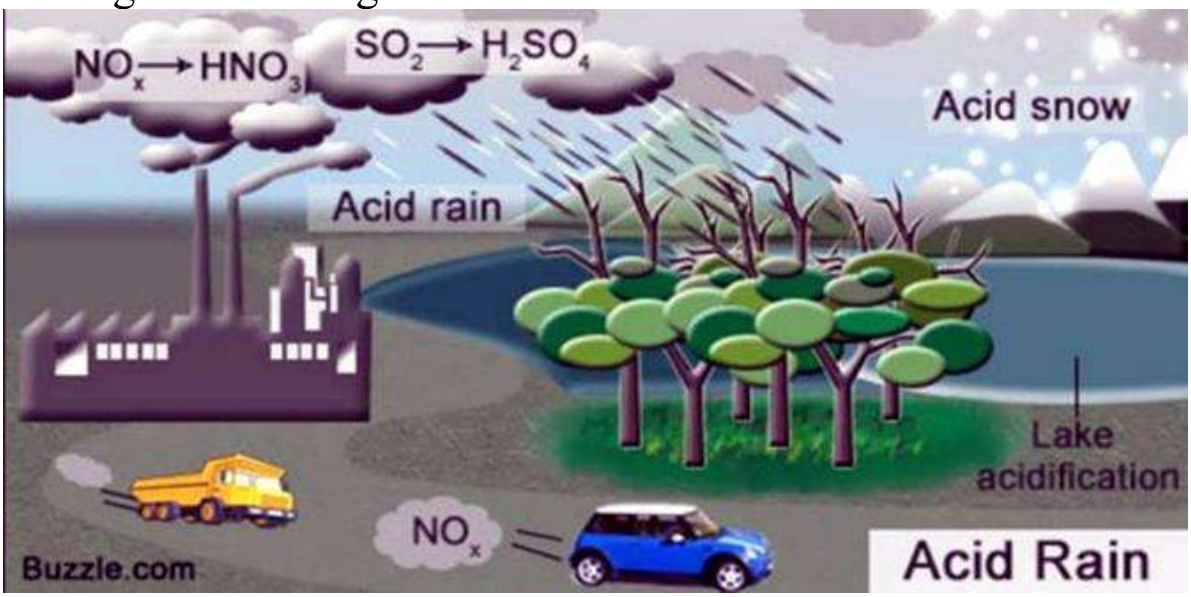


5. The global climate has ……. changes throughout history. Nowadays human activity results in an increased level of …… that causes unusual rapid warming.



6. Acid rains ……. as a result of a chemical reaction between sulfur dioxide and nitrogen oxides with water vapors.

7. Acidic rains are able …… animal and plant life and even kill organisms living in oceans.



8. A single ……. of a lightning can heat the surrounding air to 27,000 degrees Celsius. Since the lightning travels at extremely fast …… (299,792,458 m/s), the heated air has no time to expand. This rapid heating causes an explosive expansion of the nearby air, which forms a shock wave of compressed particles in all directions. Similar to an explosion, the rapid expanding waves produce a very loud, booming burst of sound.

Exercise 8. Find out more interesting information and get ready to share your findings with groupmates.

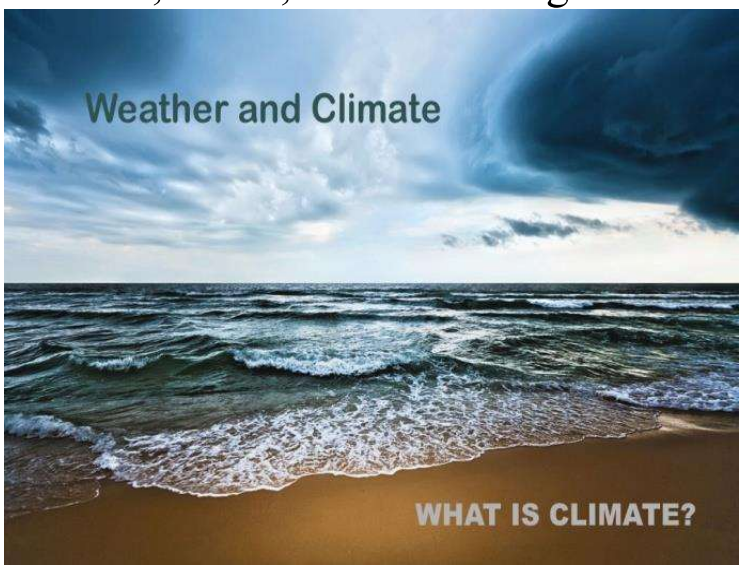
UNIT 6.

Exercise 1. Read and translate the text. Learn unknown words.

Climate's Role in the Environment

Climate is related all other parts of the earth. It is closely connected with its atmosphere, land and water. These relationships work in two ways.

Land, water, and the changes that take place in the air play a significant role in shaping climate. At the same time, climate is essential in shaping landforms and soils. Climate is of great assistance in keeping the water cycle working. It also helps to determine what changes take place in the air from month to month and from year to year.



The relationships between land, water, air, and climate have a direct influence on the plant and animal species living on a particular territory. Climate is also vital for making decisions and choices concerning the use the land, water and life forms found in a region.

Today scientists are aware of some climate changes in the past.

The cooler periods were characterized by the formation of ice on the earth. Huge glaciers covered large parts of the Earth's land surface. But the glacial periods were always followed by warmer periods. These cycles characterized by consecutive warming, cooling, and warming again repeated several times in the past. The last glacial period was followed by a warming period about 11 000 years ago.

The present day climates emerged after the last continental glaciers had moved back to the territories around the poles.

Nowadays, hot climates are observed around the equator, cold climates can be felt around the poles, and climates with warm and cold seasons are the characteristic feature of middle latitudes.

On the areas characterized by hot and warm temperatures as well as heavy or moderate precipitation, forests cover the land. Tall grasses can be found in areas where temperatures are warm enough but precipitation falls only in one season. Very hot but dry places are the habitat for special species of plants which can store water in their stems or take moisture from the air. In very cold places, tiny mosses manage to survive.

Every climate region gives a shelter to special forms of animal life. Animals climbing up and down the trees cannot be found in grasslands. In very dry regions animals are adapted to live without water for long periods of time. Moreover, every climate region has its own communities of insects and birds.

Exercise 2. Give equivalents for:

great continental glaciers, ховатися поміж трав, certain climate regions, комахи та птахи, tree trunks, зберігати (утримувати) воду, to take moisture from the air, виживати, tiny mosses, середні широти, the glacial periods, to have a direct influence, визначати, scientists, to survive.

Exercise 3. Develop your reading skills. Read the following text and do the comprehension tasks.

1. Climate has no impact on atmosphere. ***True / False***
2. In dry areas of the world different species of plants use their stems to store water. ***True / False***
3. Every climate region has its own flora and fauna. ***True / False***
4. Climate started influence the environment only several decades ago. ***True / False***
5. The present day climates appeared after the last warming. ***True / False***
6. Scientists don't know anything about climate changes in the past. ***True / False***

7. The plant and animal species living on a particular territory greatly depend on the direction of winds on that territory. ***True / False***
8. Dry places are the habitat for lush greenery and variety of birds. ***True / False***
9. Huge glaciers covered only Polar regions of the Earth's land surface. ***True / False***

Exercise 4. Insert the prepositions if necessary:
parts … the earth, to have a direct influence … the kinds … plants and animals, the cycle … warming and cooling, special forms … animal life, to live … forests, to survive … grasslands, … very dry regions, to go without water … long periods … time, to live … very cold regions, communities … insects and birds.

Exercise 5. Use the appropriate English equivalents:
1. Climate has (взаємозв'язки) to all other parts of the earth.
2. After the last great continental glaciers (відступив) to the lands around the poles, the climates we know today emerged.
3. Special forms of animal life, too, live in (певних кліматичних регіонах).
4. Where temperatures are hot to warm and where (опади) is heavy to moderate, (земля вкрита лісами).
5. Today (вчені) know some things about climate changes in the past.
6. The relationships between land, water, air, and climate (мають прямий вплив на) the plant and animal species living on a particular territory.

Exercise 6. Look at WEATHER COLLOCATIONS.
A) Choose the odd word out.
B) Use the collocations in sentences of your own.
cold – thick – fresh – freezing **air**
low – high – freezing – good **temperatures**
strong – heavy – dense – thick **fog**
lovely – bad – strong – dry **weather**

strong – foggy – chilly- rough **wind**
heavy – light – torrential – wet **rain**

Exercise 7. Read short texts about weather and climate and decide which answer (A, B, C or D) best fits each gap. There is an example at the beginning (0).

What exactly is weather?

Weather is the (0) __B__ of events that happen each day in our atmosphere. Even though there's only one (1) _____ on Earth, the weather isn't the same all around the world. Weather is different in different parts of the world and (2) _____ over minutes, hours, days, and weeks.

Most weather happens in the part of Earth's atmosphere that is closest to the ground — (3) _____ the troposphere. And, there are many different factors that can change the atmosphere in a certain area like air pressure, temperature, (4) _____, wind speed and direction, and lots of other things. Together, they determine what the weather is like at a given time and location.

0	A	measure	B	mix	C	moor	D	means
1	A	climate	B	atmosphere	C	temperature	D	island
2	A	alters	B	starts	C	covers	D	over
3	A	used	B	left	C	found	D	called
4	A	honesty	B	humidity	C	hoover	D	hey

What is climate?

Whereas weather (5) _____ to short-term changes in the atmosphere, climate describes what the weather is like over a long period of time in a (6) _____ area. Different regions can have different climates. To describe the climate of a place, we might say what the temperatures are like during different seasons, how windy it usually is, or how much rain or snow typically (7) _____.

When scientists talk about climate, they're often looking at averages of (8) _____, temperature, humidity, sunshine, wind, and other measures of weather that occur over a long period in a

particular place. In some instances, they might look at these averages over 30 years.

5	A	insists	B	follows	C	refers	D	goes
6	A	specific	B	spontaneous	C	strategic	D	spare
7	A	feels	B	fault	C	foul	D	falls
8	A	precaution	B	precipitation	C	pollution	D	portion

Why do we study climate?

Climate, climate change, and their impacts on weather events (9) _____ people all around the world. Rising global temperatures are expected to further (10) _____ sea levels and change precipitation patterns and other local climate (11) _____. Changing regional climates could alter forests, (12) ____ yields, and water supplies. They could also affect human health, animals, and many types of ecosystems. Deserts may (13) _____ into existing rangelands, and features of some of our National Parks and National Forests may be permanently altered.

9	A	affect	B	effect	C	afford	D	adore
10	A	raid	B	rode	C	eraser	D	raise
11	A	regulations	B	conditions	C	rules	D	caves
12	A	creek	B	mint	C	crop	D	mite
13	A	extreme	B	expand	C	exclude		engrave

Exercise 8. Be ready to speak about the *Climate's Role in the Environment* and *Climate of Ukraine.*

1. What is the name of the science that studies the atmosphere, monitors and predicts the weather and climate?

Hydrology
Meteorology
Demography

2. The term used to define the average weather conditions in a particular area is ……
weather climate temperature humidity

3. The term …….. is used to describe the movement of air from a high pressure to a low pressure zone.
whirl wind wave glacier

4. Climate and weather usually describe the same natural phenomena. ***True False***

5. Ice sheets melting leads to …….
rise in the sea level diminishing in the sea level

6. The average global temperature has increased since the 18 century. ***True False***

7. What factor is considered to be the most important to influence climate?
Air masses Latitude Ocean currents Moisture

8. Snow is an example of the key weather element known as _____.
atmosphere portion precipitation moisture

9. _____ refers to the atmospheric conditions of a specific place over a considerable period of time usually up to 30-35 years.
Weather Climate Temperature

10. The amount of water vapor in the air is _____.
humidity precipitation gravity water drops

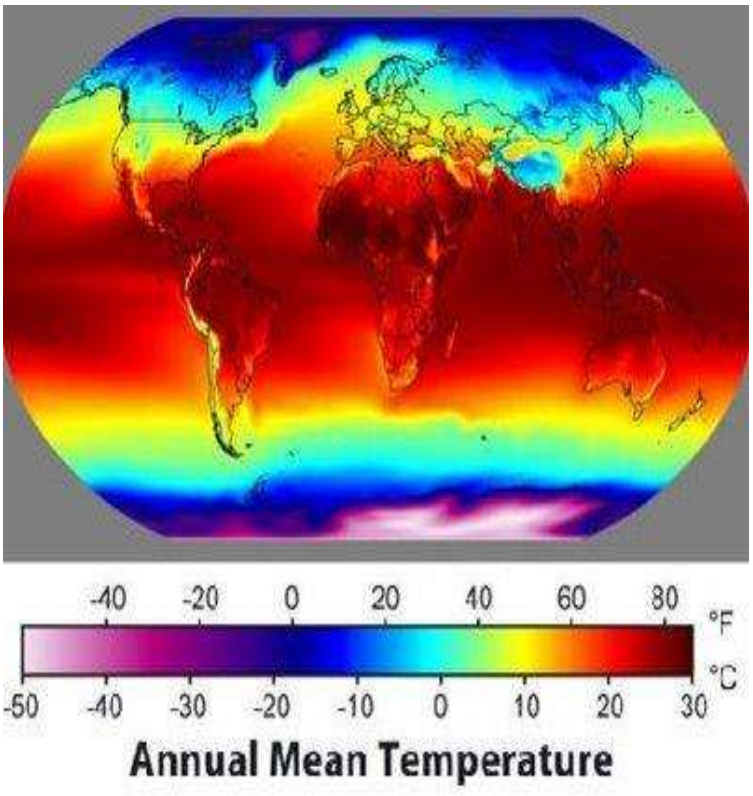
UNIT 7.

Exercise 1. Read and translate the text. Learn unknown words.

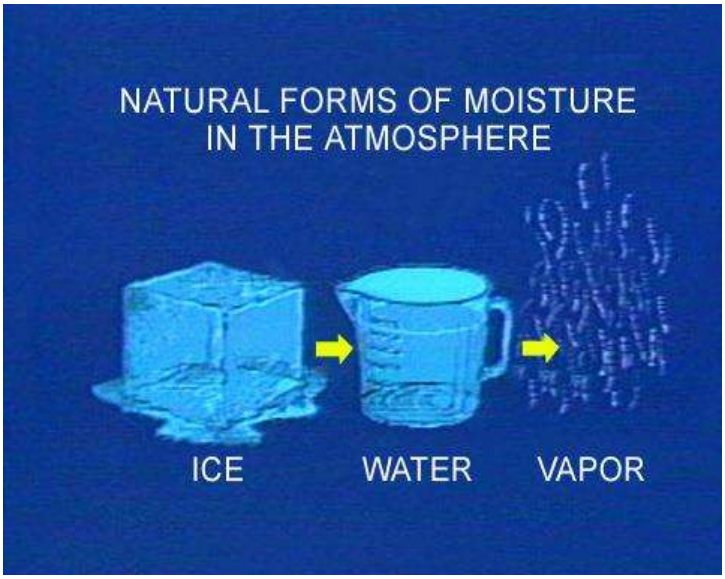
Conditions Causing Weather:
Temperature and Moisture

You have probably heard a saying: "If you don't like the weather, wait an hour." It proves that weather conditions can change very quickly. By its nature, weather changes constantly. The term "weather" describes the condition of the atmosphere for a short period of time in a specific area. As the atmosphere changes constantly, the weather, consequently, changes constantly as well. An area's weather is affected by 4 variable conditions in the atmosphere: temperature, moisture, atmospheric pressure and wind.

Temperature. The earth receives its warmth from sunlight, or solar radiation. The process by which sunlight warms the Earth is called insolation.



Only about 48 per cent of all sunlight actually reaches the earth's surface. Gases in the atmosphere either absorb or reflect the rest back into space. Land and water absorb the sunlight that reaches the Earth's surface and change it into heat energy. This heat energy radiates back into the atmosphere, where it warms the air. At night the Earth and the air slowly cool.



Moisture. It is the second variable element of weather. Moisture in the atmosphere exists in several forms, for example water vapor, liquid water and ice, and it controls most aspects of our weather and climate. However, air higher than 6.4 km above the earth's surface rarely contains moisture. On average, water vapor makes about 4% of the molecules in the air. The amount of moisture in the air is called ***humidity.***

Usually scientists use two terms: ***absolute humidity and relative humidity. The absolute humidity*** is the actual amount of water vapor per unit volume of gas at given temperature and pressure, and is expressed in g/m3. ***The relative humidity,*** on the other hand, is the ratio of the amount of water vapor present in the air to the amount present at a given temperature, and is expressed as a percentage.

Exercise 2. Give equivalents for:

weather conditions, постійно змінюватися, to affect an area's weather, випаровування води, to receive warmth from sunlight, волога, to reach the earth's surface, відносна вологість, to contain some amount of moisture, співвідношення, actual amount of water, містити вологу, absorb the sunlight, існувати в різних формах, water vapor.

Exercise 3. Answer the questions:

1. Name four factors that affect the weather.
2. Where does the Earth receive its warmth from?
3. What is insolation?
4. Give the definition of humidity. How is it measured?

5. Describe the process of forming precipitation.
6. What types of precipitation do you know?
7. What type of precipitation is common to your country?

Exercise 4. Guessing the meaning of unknown words.

A. Match the words with their meanings.

1	moisture	a	the amount of energy from the sun that reaches the earth
2	humidity	b	the conditions in the air above the earth such as wind, rain, or temperature, especially at a particular time over a particular area
3	insolation	c	water that falls from the clouds towards the ground, especially as rain or snow
4	weather	d	a liquid such as water in the form of very small drops, either in the air, in a substance, or on a surface
5	precipitation	e	a measurement of how much water there is in the air

B. Choose the right word to complete the sentence.

1. The animal's thick fur provides very good ***insolation / insulation*** against the arctic cold.
2. ***Insolation / insulation*** is a measure of the solar energy that is incident on a specified area over a set period of time.
3. Not all of the solar energy that ***reaches / riches*** the Earth actually ***reaches / riches*** the surface of the Earth.
4. It doesn't matter ***whether / weather*** you're invited to the party or not. I won't allow you to go until you finish your homework.
5. I checked the ***whether / weather*** for this week because I want to start my work in the garden.
6. The island of Newfoundland is commonly known for its wet and cold ***whether / weather.***
7. Children didn't know ***whether / weather*** the ice on the pond was thick or not.

8. According to the weather forecast some kind of frozen ***participation / precipitation*** is expected tomorrow.
9. The sun dries the ***moisture / humidity*** on the ground.
10. Plants use their roots to absorb ***moisture / humidity*** from the soil.
11. Last summer was characterized by murderous heat and ***moisture / humidity***.
12. There is heavy ***precipitation / moisture*** in some parts of the country.
13. The weather forecast promises dry weather with no ***precipitation / moisture***.

Collocations are phrases used commonly in speech. They will help you understand others and sound more natural.

Weather Collocations

Weather the storm (to be strong and face something difficult)	*This old wrinkled man sitting on the bench weathered lots of storms in his lifetime.*
Good/bad weather	*We had good weather during our last journey.* *It's going to be bad weather this week.*
Weather permitting	*They will be having the match outdoors, weather permitting.*

.

When **weather** is used as a verb, it can mean to change the appearance or structure of something that is exposed to the outdoors for a period of time.
When things are left outside for a long period of time, wind, rain and sun can destroy or change them. This is **weathering**.

*The sun **weathered** and faded the cushions that were left outside on the Granny's favourite arm-chair under the old linden.*

Exercise 5. Find and cross the odd word in each line. Find the heading for it from the suggested below.

forests	grasses	trunk	mosses
chimneys	haze	smoke-stacks	automobiles
colorless	endless	tasteless	odorless
helium	dust	pollen	soot
heavy	tall	light	moderate
snow	hail	wind	sleet
ozone	helium	nitrogen	carbon dioxide
latitude	altitude	magnitude	proximity to land

1. Particles contained in the air.
2. Polluters (contaminants).
3. Degree of precipitation (rainfall or snowfall).
4. Different kinds of vegetation.
5. Gases that make up 1% of dry air.
6. Quality of the air in its natural state.
7. Forms of precipitation.
8. Climatic controls.

Exercise 6. Choose the right word to fill in the gaps:

1. If you don't like the weather, wait an … (age, second, hour, minute).
2. When the … (flows, tons, cups, drops) of water condensing in cooling air become large enough, they form (waves, precipitation, oxygen, humidity).

3. (Weather, Forecast, Climate, State) describes the condition of the atmosphere for a short period of time in a specific area.
4. The amount of moisture in the air is called (precipitation, humidity, rainfall, moisture).
5. Hail is formed when condensation takes place (above 0°C, below 1°C, below 0°C).
6. The weather of a particular area is affected by (three, four, five, six) variable conditions in the atmosphere.

Exercise 7. Read the weather conversation and decide which answer (A, B, C or D) best fits each gap.

Ted and Jane are going camping and deciding what to take.

Ted: Have you heard the weather forecast? What kind of weather are we going to have?

Jane: (1) _____ said that it would be hot and dry.

A. the map on television
B. the meteorologist on television
C. the precipitation on television
D. all the neighbours
E. the prediction of tourists

Ted: Yes, (2) _____.

A. it should be lovely weather
B. it should be terrible weather

C. it must be heavy storm
D. it will be very cold
E. it must be windy

Jane: But the weather forecast is normally wrong, so (3)_____.

A. we should have good weather
B. we should go outside and check
C. we should stay at home
D. we should call our friends
E. we should expect rain and fog

Ted: I also think it might be quite cold at night. We might even get frost in the mornings.

Jane: We should take (4)_____.

A. some sunglasses then
B. some fizzy drinks
C. some warm clothes then
D. some extra food then
E. some fireworks then

Ted: And (5)_____ rains.

A. some umbrellas for if it
B. some shorts for if it
C. some swimming costumes for when it
D. some extra hamlets for if it
E. some fishing rods for if it

Jane: I don't normally go camping early in the spring because the weather is so changeable. We can't rely on the weather forecast.

Ted: Yes, I understand you. I agree that it is rather difficult to pack necessary things.

Jane: I'm sure we'll have a good time.no matter how good or bad the weather is.

Ted: Sure, we will.

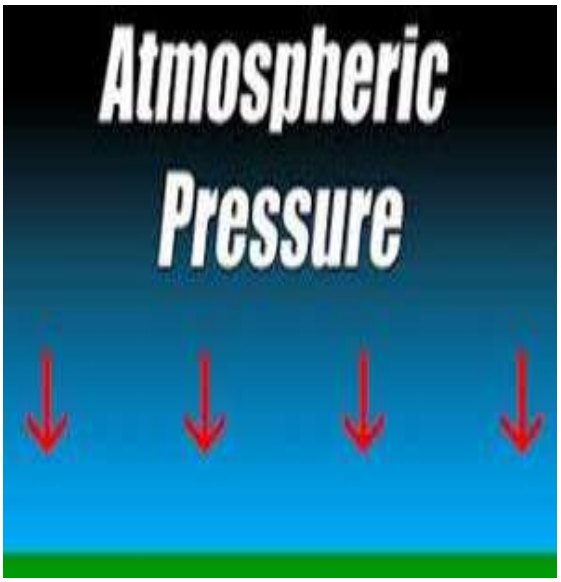
Exercise 8. Prepare a short report about the influence of temperature or moisture on weather.

UNIT 8.

Exercise 1. Read and translate the text. Learn unknown words.

Four Conditions Causing Weather:
Atmospheric Pressure and Wind

Another two atmospheric variable conditions affecting the area's weather are atmospheric pressure and wind.



Atmospheric pressure. The air around us has weight, and it presses against everything it touches. That pressure is called atmospheric pressure, or air pressure. It is the force exerted on a surface by the air above it as gravity pulls it to Earth. The standard pressure exerted by the atmosphere at sea level is 760 millibars.

The atmospheric pressure is greatly affected by the distance above the Earth's surface, in other words by altitude. (At high altitudes pressure is lower.) It is also affected by temperature. Warm air weighs less and exerts less pressure than cool air. As the light, warm air rises, a low-pressure center forms below it. Cool air forms a high-pressure area. Low-pressure areas are characterized by unstable weather with clouds, rain and storms. High-pressure areas usually have clear and calm weather.

Wind. The wind is caused by differences in atmospheric pressure. When this difference exists, air moves from the higher to the lower pressure area, resulting in winds of various speeds. And the bigger the difference between the pressures,

the faster the air will move from the high to the low pressure.

Unequal heating of land and sea greatly affects weather conditions and causes the seasonal winds, such as monsoons, and also many types of local winds.

Exercise 2. Guessing the meaning of unknown words.

A. Find the words 1-6 in the text and guess their meanings.		**A. Now match the words 1-6 with their meaning a-f.**	
1	adjacent	a	alter, change
2	reverse	b	regularly
3	affect	c	existing, prevalent
4	continually	d	act on, influence
5	prevailing	e	shifting, fluctuating
6	variable	f	close to

Exercise 3. Give equivalents for:

unequal heating of land and sea, пасати, the global circulation of the atmosphere, західні вітри, low-pressure areas, спричиняти сезонні вітри, complicated, мусони (дощовий сезон), due to the influence of various factors, атмосферний тиск, altitude, важити менше.

Exercise 4. Answer the questions:

1. Is atmospheric pressure a stable factor affecting the weather?
2. What is the atmospheric pressure?
3. What is it influenced by?
4. What are the peculiarities of low-pressure areas?
5. When do winds occur? How are they formed?
6. How important are weather and climate to the agriculture and industry of your region?

Exercise 5. Insert the prepositions if necessary:

… example, affect … an area's weather, the weight … the air, … sea level, a major effect … atmospheric pressure, the circulation

… the atmosphere, the influence … various factors, many types … local winds.

Exercise 6. Read short texts about wind and decide which answer (A, B, C or D) best fits each gap. There is an example at the beginning (0).

There are many names (0) ___B_____ the wind, from a breeze to a gust. But all winds (1) _____ in a similar way.

What is Wind?

In a hurricane, it can reach (3) _____ of more than 130 miles per hour. In a tornado, it can swirl at more than 200 miles per hour. Do you know what it is? It is the wind! This natural phenomenon is defined as the movement of air caused by differences in air pressure.

Meteorologists use an anemometer to (4) _____ wind speed. It (5) _____ a pole with a few cups on top.

When the wind blows, it goes into the cups, making them (6) _____ on the pole. A specialist then can count how many times the cups spin over a set period of time to figure out how fast the wind is blowing.

The speed of the wind can vary significantly from gentle to hard. When it is strong enough it can even knock down a building. But (6) _____ the wind's speed, wind wouldn't be possible without the sun.

0	A	to see	B	to describe	C	to derive	D	to speak
1	A	creates	B	are created	C	created	D	is create
2	A	center	B	slope	C	speeds	D	squirrel
3	A	measure	B	movement	C	maintain	D	medieval
4	A	looks around	B	looks about	C	looks like	D	looks for
5	A	spin	B	to spin	C	spinning	D	spam
6	A	regarding to	B	regardless of	C	paying attention	D	without

What Causes Wind?

It takes only eight minutes for sunlight to travel from the Sun to the (7) _____ of the Earth. When it gets here, it warms all the things on the surface.

As the Earth's surface warms, so does the air that touches it. And when air gets warm (8) _____, it rises high into the sky. When warm air (9) _____, nearby air that is cooler rushes in to fill the empty space left behind. The rushing air is what we call wind.

7	A	flat	B	surface	C	plane	D	wave
8	A	although	B	though	C	thought	D	enough
9	A	arises	B	rises	C	raised	D	rose

Exercise 7. Choose the correct option.

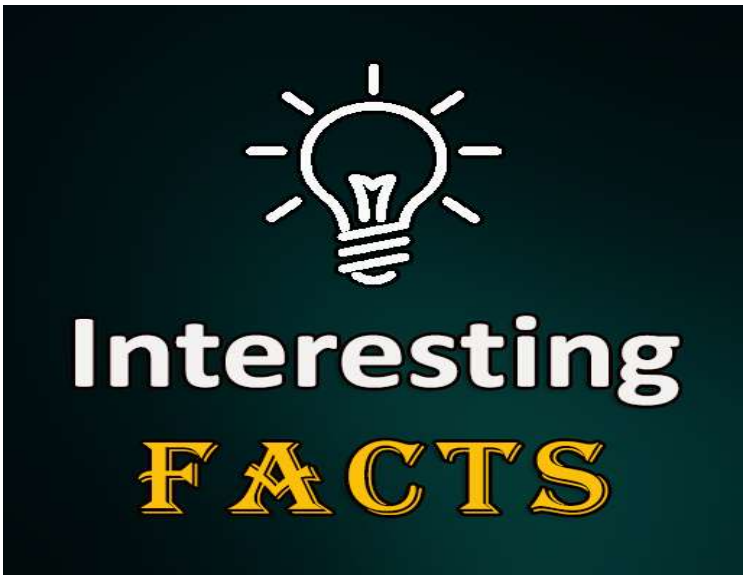
1. The wind is the movement of air caused by differences in _____.
   air pressure *the Earth's gravity*
   the Earth's precipitations *greenhouse gases*

2. Meteorologists use instruments like _____ to measure wind speed.
   a thermometer *a barometer*
   an anemometer *a compass*

3. The wind blows because the Sun heats _____ faster than ____. This is the cause of air pressure changes.
   water, land *land, water*
   air, land *water, air*

Exercise 8. Find more facts about winds and get ready to share your findings with the groupmates. You are to speak about

- ***types of winds in your country;***
- ***different speeds of wind;***
- ***how people use the power of the wind;***
- ***what sports and recreational activities make use of the wind.***



Violent weather

Thunderstorms, tornadoes, hurricanes, and typhoons can be rather dangerous. They occur as a result from certain combinations of temperature, moisture, atmospheric pressure and wind.

A thunderstorm is characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere, known as thunder. 16 million thunderstorms occur worldwide each year. About 10% of them reach severe levels.

Tornadoes and hurricanes are not the same things. They differ in size and their duration. Hurricanes are generally hundreds of miles in diameter. They are characterized by high winds and heavy rains over the entire region. They occur throughout the world and the speed of the wind varies in the range between 480 and 800 km per hour. They rank first among the most violent of nature's storms.

The largest hurricane ever to hit the United States was Sandy in 2012. It was 1,000 miles wide and caused more than 175 deaths and the damage in the amount of more than $70 billion.

Hurricanes can last for days or even weeks. Tornadoes usually last no more than a few minutes. A hurricane typically starts in the regions over the tropical oceans. It is characterized by a wave of low pressure air in the warm, and rich in moisture atmosphere.

These large low-pressure areas with strong winds can create violent storms over tropical ocean areas usually in the late summer and early autumn. The storms formed over the Atlantic Ocean and the Gulf of Mexico are called hurricanes. Similar storms formed over the Pacific Ocean are called typhoons. The route of hurricanes and typhoons is unpredictable. They reach coastlines with high winds, high waves, and heavy rains. and can cause tremendous damage to coastal areas.

Find material about different kinds of violent weather phenomena: thunderstorms, tornadoes, hurricanes, typhoons, etc. and describe some cases of weather hazards.

Desert Landscapes

If you hear a word "desert", the first thing that springs in your imagination is a barren space with no people around. But this description could be equally used for polar or mountain regions as well. What is then a distinctive feature of a desert?

Geographic definitions. When geographers use the word desert, they imply something special. A geographer's desert may be crowded with people. For example, Egyptian cities Cairo and Alexandria are both in a desert, but they are crowded with millions of people. So "place without people" really do not provide a useful geographic definition of desert.

To the geographer a fundamental factor that defines a desert is the lack of water. Deserts have a very small amount of surface water, limited groundwater, and unreliable rainfall.

Unreliable precipitation.
People describe deserts as hot, dry and empty areas which receive no more than 25 centimetres of precipitation every year. Very often the amount of evaporation greatly exceeds the annual rainfall. This is true to some extent. Some deserts are very hot and the daytime temperature can increase up to 55°C, other deserts have cold winters or are cold year-round. Despite these characteristics deserts are a habitat for a great variety of plants, animals and other living organisms. And though there is little water available for plants and other organisms, they have adapted for such heavy conditions during the thousands of years.

Colors of the desert. Two colors symbolize life and death in many desert areas. The primary desert color — brown — illustrates the lack of water. Often this color stretches as far as the eye can see. And even though the brown desert may burst into bloom after a rain, the colorful outburst is short-lived and brown soon returns.

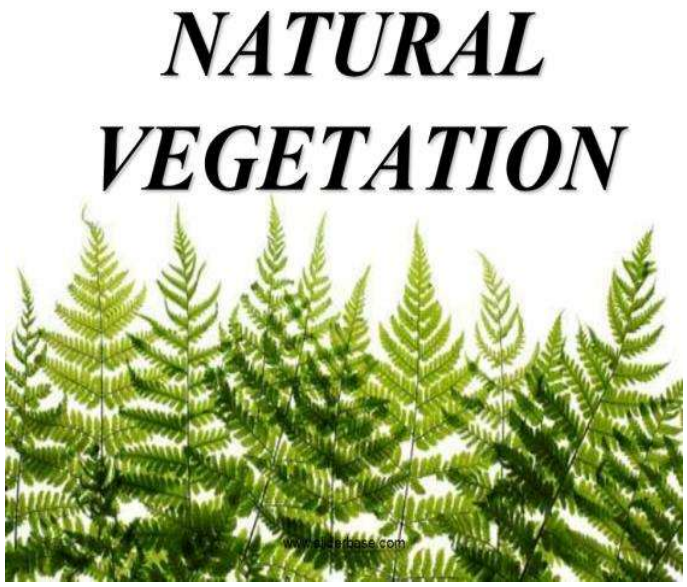
The other desert color — green — identifies the few arable areas. Here life-giving water is available from rivers such as the Nile or from underground reserves.

The line between green and brown is often sharp in desert regions. The rich green of an irrigated oasis or river valley suddenly ends. Beyond is the vast, dry emptiness of brown terrain.

UNIT 9.

Exercise 1. Read and translate the text. Learn unknown words.

Vegetation and Soils



Natural vegetation regions. Vegetation is plant life. The kind of natural vegetation a place has depends upon several factors: climate, relief, soils. Climate plays a particularly important role in the distribution of vegetation, as different kinds of plants need different amounts of heat and moisture in order to grow well. Trees generally need more moisture than grasses. For areas with a heavy and well-distributed rainfall and at least one month per year with average temperatures above 10°C the natural vegetation is forest where the trees are dominant plants.