UNIT 24.

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

Water - Supply Problems

Humans are facing a worldwide water crisis, according to the United Nations. Many people do not have access to clean water to drink or to wash with. Sometimes there just is not enough water and sometimes the available water is unclean and unhealthy.

Humans use six times as much water today as they did 100 years ago. People living in developed countries use a far greater proportion of the world's water than people in less developed countries. Water scarcity is a problem now and will become an even larger problem in the future as water sources are reduced or polluted and population grows.

Water Distribution

Water is unevenly distributed around the world. Large portions of the world receive very little water from rainfall or rivers relative to their population. This includes much of northern Africa and central Asia. Over time, there will be less water per person within many river basins as the population grows and global temperatures increase so that some water sources are lost. Over time, many nations, even developed nations, are projected to have less water per person than now.

Global warming will change patterns of rainfall and water distribution. As the Earth warms, regions that currently receive an adequate supply of rain may shift. Regions that rely on snow melt may find that there is less snow and the melt comes earlier and faster in the spring, causing the water to run off and not be available through the dry summers. A change in temperature and precipitation would completely change the types of plants and animals that can live successfully in that region.

Water Shortages Key Facts

Four billion people — almost two thirds of the world's population — experience severe water scarcity for at least one month each year.

Over two billion people live in countries where water supply is inadequate.

Half of the world's population could be living in areas facing water scarcity by as early as 2025.

Some 700 million people could be displaced by intense water scarcity by 2030.

By 2040, roughly 1 in 4 children worldwide will be living in areas of extremely high water stress.

Exercise 2. Give equivalents for:

Розподіл водних запасів, unevenly distributed, гостра нестача води, relative to the population, стикатися з проблемами нестачі води, patterns of rainfall and water distribution, бути переселеним, to shift, зменшувати (скорочувати), precipitation, басейн річки, inadequate water supply.

Exercise 3. Rearrange the letters in the anagrams to form equivalents for the Ukrainian words.

зазнавати, страждати - **xeepeencri**	доступний, наявний - **liavaleba**
недостатній, незадовільний - **deainateuq**	дефіцит, нестача **- yccrasit**
lynuneve - нерівномірно	**tipreonicipta** - опади

Exercise 4. **Guessing the meaning of unknown words.**

A. Match the words with their meanings.

1	**water scarcity**	a	confront and deal with or accept a difficult or unpleasant task, fact, or situation.
2	**face**	b	the way in which something is shared out among a group or spread over an area.

3	**supply**	c	water that falls from the clouds towards the ground, especially as rain or snow.
4	**distribution**	d	a stock or amount of something supplied or available for use.
5	**precipitation**	e	a water deficiency or a lack of safe water supplies.

B. Look at the following examples, translate them and make up your own sentences with new terms.

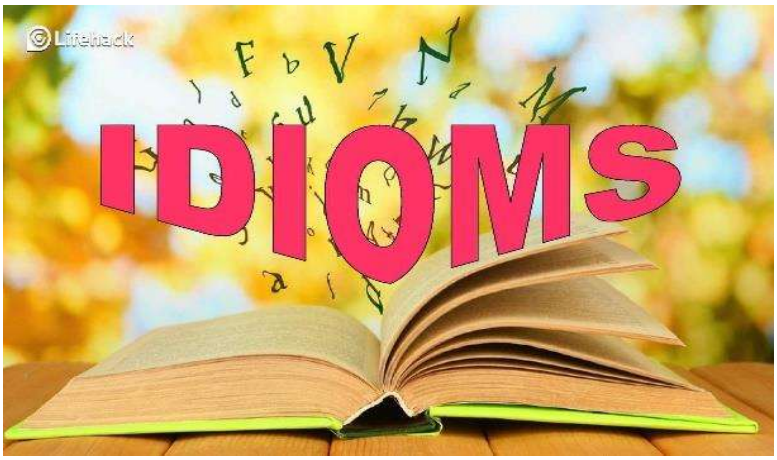
1. Are you permitted to distribute the leaflets on the territory of the university campus?
2. The map shows the distribution of this species across the world.
3. Acid precipitation may cause a reduction in crop yields.
4. The forecast is for dry, cloudy weather with no precipitation expected.
5. There is a great scarcity of food in the drought-stricken areas.
6. Regions where water scarcity is a threat should pay much attention to the problem and make necessary policy changes.
7. She stays calm when facing a crisis.
8. Our water supply is becoming polluted with nitrates.

C. Choose the right word to complete the sentence.

1. Climate change is ***disrupting/disregarding*** weather patterns, leading to extreme weather events and exacerbating water scarcity.
2. Such ***intact/impacts*** can drastically affect the quantity and quality of water that children need to survive.
3. Around 74 percent of natural disasters between 2001 and 2018 were water-related, including ***drafts/droughts*** and floods.
4. The ***facility/frequency*** and intensity of such events are only expected to increase with climate change.
5. Around 450 million children live in areas of high water ***vulnerability/perceptibility.***
6. This means they do not have enough water ***to meet/require*** their everyday needs.

7. ***Rising/Arising*** temperatures can lead to deadly pathogens in freshwater sources, making the water dangerous for people to drink.
8. Contaminated water ***poses/possesses*** a huge threat to children's lives.

Exercise 5. Study the material, choose 5 idioms to your liking and make up your own sentences.



An idiom is a phrase, saying, or a group of words with a metaphorical (not literal) meaning, which has become accepted in common usage.

An idiom's symbolic sense is quite different from the literal meaning or definition of the words of which it is made. There are a large number of Idioms, and they are used very commonly in all languages. There are estimated to be at least 25,000 idiomatic expressions in the English language.

In deep water = to be in a difficult or serious situation *The football team is in deep water; there's no way they can come back from a 3-1 score to win.*	**In hot water** = in trouble because you have done something wrong *If you don't finish your history project, you're going to land in hot water with Mrs. Smith.*
Feel like a fish out of water = to feel uncomfortable because you feel like you don't belong in a place or situation	**Blood is thicker than water** = family relationships are more important than all others

Robert felt like a fish out of water surrounded by the girls who had been doing judo for years.	*Even though I know my brother is annoying, blood is thicker than water, and I will always defend him when people tell him to shut up.*
Take to (an activity) like a duck to water = to learn or adapt to something new very quickly *Even though she'd never played guitar before, Louise took to it like a duck to water, and was soon playing with a rock band.*	**Keep your head above the water** = to just manage to survive in a difficult situation, especially concerning money *Thanks to a donation from the charity after Mrs. Hudson lost her job, the family are keeping their heads above water.*
Pour cold water on something = to criticize someone's idea or plan so much they no longer feel excited about it *I know you don't think the camping trip is exciting, but there was no need to pour cold water over Billy's suggestion. He planned it all himself!*	**Pour oil on troubled waters** = to try to stop an argument by calming people down *Mum always manages to pour oil on troubled waters when my siblings and I get into a fight.*

Exercise 6. Watch the video and do the following tasks.
https://www.youtube.com/watch?v=OCzYdNSJF-k
A. Decide whether the following statements are TRUE or FALSE. Suggest correct answers.

1. 43% of the world's population endures extreme water scarcity.
2. People cannot consume 97% of water because it's full of minerals.
3. 3% of water can be found in ice caps and glaciers.

4. The existing sources of water are slowly replenished by rain and snowfall.
5. The amount of water is evenly distributed around the globe.
6. Agriculture is the biggest consumer of water supplies.
7. Agriculture poses the smallest threat to the regional water supplies.

B. Explain the meaning of the following words and word combinations, use them in your own examples.

To run out of something, to be depleted, finite, ingenious ways.

Exercise 7. Find the information about reasons of water pollution and present it in the classroom. Suggest ways of solving the water supply problems.

UNIT 25.

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

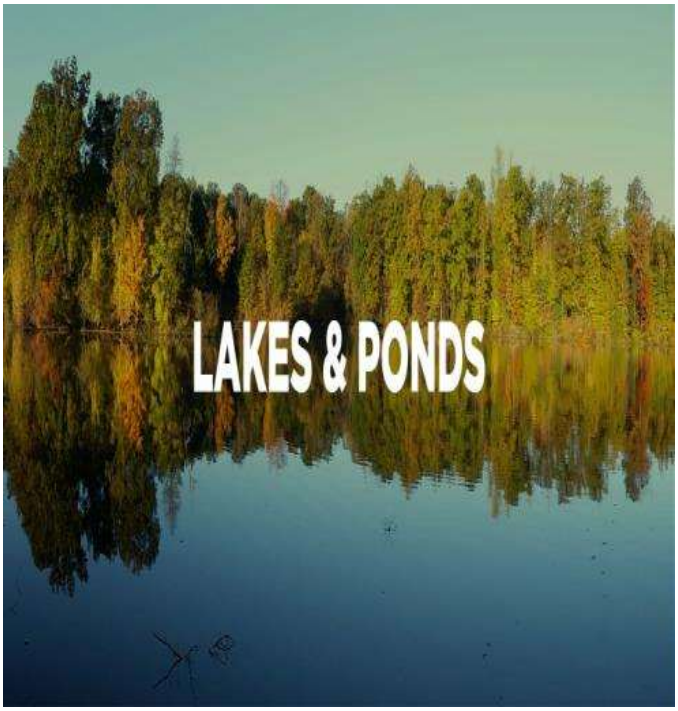
Water on Land

A drop of water is constantly circulating in its journey from sea to land and back to the sea. This journey can take thousands of miles. A drop of water may make several stops on land, staying in one place for some period of time. But eventually, every drop of water finds its way back to the sea. Let's consider the stops a drop of water may take after rising from the sea as water vapor and falling back to earth in some form.

One possible stop for a drop of water is a lake. Lakes are bodies of slowly moving or standing fresh water. Lakes can be found in all continents and in all ecosystems. But the continents of North America, Africa, and Asia contain about 70 percent of the total lake

water. Lakes also occur far beneath the ice sheets of Antarctica. However, the data related to their volume and other characteristics remain incomplete.

Lakes vary in size. Some of them are very small and people can even relax near them at the backyards. Others are big enough to be called seas. The Caspian Sea with an area of more than 370,000 square kilometres is considered to be the world's largest lake.



Most of the world's lakes are freshwater lakes. Freshwater lakes have surface rivers or underground streams and springs flowing into and out of them.

A few of the world's lakes are saltwater lakes. Saltwater lakes have streams flowing into them. But they have no streams flowing out.

The Caspian Sea, the Dead Sea, and the Aral Sea are really lakes because they are surrounded on all sides by land. They are called seas only because their water is salty. The Dead Sea, the lowest surface lake in the world, is nearly 390 m below sea level.

Lakes, especially large ones, modify the climates of their surrounding lands. They are viewed as an important part of water cycle. These water bodies are important in preserving wildlife. They serve as migration stops for many birds and as refuges for a wide variety of other animals. They provide homes for a diversity of organisms, from microscopic plants and animals to fish that may weigh hundreds of kilograms.

Throughout the centuries lakes have provided routes for travel and trade. Farmers use lakes to irrigate the crops. Lakes are also popular recreation and vacation spots. People enjoy boating, swimming, water-skiing and fishing. Many public parks are built

near lakes, allowing people to picnic, camp, hike, bike, and enjoy the wildlife and scenery the lake provides.

Exercise 2. Give equivalents for:
to vapor, inland seas, below sea level, ice sheets, to enjoy the scenery, recreation and vacation spots, diversity of organisms, to provide homes, to preserve wildlife, moving or standing water.

Exercise 3. Rearrange the letters in the anagrams to form equivalents for the Ukrainian words.

забезпечувати	**irodepv**	поверхня	**rusfcea**
оточувати	**dounrsru**	струмки	**assretm**
прохолода	**looc**	різномаїття	**tydisirev**

Exercise 4. Decide which answer (A, B, C or D) best fits each gap.

Lakes are found all around the world. You can find them in all environments, in deserts, great plains, and mountains. The most common continents to find lakes are in North America, Africa, and Asia. These continents (1) _____ around seventy percent of the (2) _____ lakes in the world. You can even find lakes underneath ice sheets in Antarctica.

Lakes are a body of water that is (3) _____ by land. They (4) _____ in size and shape, some small enough to fit in your back garden and some two kilometers deep.

But what (5) _____ do they have to us? Farmers make use of lake water to irrigate their crops. Water is vital for the production of crops, without this water we wouldn't be able to feed the world and keep the supply of crops needed to (6) _____ our ever growing population. Many people see lakes as a tourist (7) _____. There are plenty of examples around the world of famous lakes that have now become a place of travel.

1	A	host	B	ghost	C	hostess	D	boost
2	A	average	B	approximate	C	total	D	common

3	A	delivered	B	surrounded	C	sent	D	supplied
4	A	blast	B	swing	C	vary	D	crawl
5	A	stage	B	craft	C	shape	D	benefit
6	A	aggravate	B	exaggerate	C	sustain	D	convert
7	A	agency	B	destination	C	plot	D	site

Exercise 5. Answer the questions:

1. What is the water cycle?
2. Give the definition of the term “lake”.
3. Name the territories rich in lakes.
4. Why are some lakes saltwater lakes?
5. Are there any saltwater lakes in Ukraine?
6. What functions do lakes play for environment (economy)?
7. What is the world’s largest natural lake? Where is it found?
8. What is the biggest (the deepest) lake of Ukraine? Present information about it to your group mates.

Exercise 6. Read the abstract, translate it in written form and do the following tasks.

A. Make up your own example sentences with the underlined words.

B. Prepare a short report about any lake in Ukraine and make a list of its uses.

The Use of Lakes

Lakes serve many of the purposes. People use them for swimming. They draw fish from lakes for sport and food. They build summer homes around them. Lakes also serve as transportation routes. For example, along with the St Lawrence River, the Great Lakes form an important inland waterway in the United States.

The freshwater lakes of the world have other uses. Lakes provide water for drinking and home use, for irrigation, and for industrial purposes. People living in the area around Lake Titicaca even harvest the reeds growing in the lake and use them to make boats.

UNIT 26.

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

Rivers and Streams

Rain falls on the earth, snow and ice melt, and springs gush out of the ground. The water from these sources flows down mountainsides and hillsides, forming tiny streams that run into bigger ones. These streams join small rivers that flow into still larger rivers. Eventually they join a main river, one that empties into the sea. A main river and all its tributaries, or branches, form a river system.

All of the rivers and streams flowing into a main river form a larger drainage basin, one usually determined by the higher peaks and ridges of a mountain range. Every river and stream has a river source — a place where it begins, a river's mouth — a place where it empties into another body of water and a river's flow.

Rivers and streams are always at work on the land, destroying rock and soil (erosion), washing them away (transportation), and putting them down someplace else (deposition). The first two processes — erosion and transportation — wear down the land, changing highlands into lowlands. The last process — deposition — builds up the land. Together these three processes keep a balance between the high places and the low places of the earth.

The world's great rivers. There are many different things that make a river great. One thing is length. Even though the Amazon flows through an area where few people live, it is a great river. It is not only about 6,440 km long, but it also carries more water in its

system than the Mississippi River, the Nile River, and the Yangtze River put together. The flow of the Amazon River is so powerful that the water of the Atlantic Ocean is fresh to many miles past the river's mouth.

On the other hand, the Rhine River in Europe is only about 1,500 km long. But it, too, is a great river. It flows through an area where great numbers of people live. Its waters are used to manufacture many industrial products, to generate power, to transport goods and people, and to provide water for home use, for sport and recreation, and for agriculture. Use is another measure of a river's greatness.

Exercise 2. Give equivalents for:

знищувати ґрунт, for sport and recreation, вимір, powerful, виробляти, to generate power, транспортувати товари, to change highlands into lowlands, гирло річки, keep a balance, приєднуватися до маленьких річок, a river source, відкладення, a river's flow.

Exercise 3. Match the words in A with their opposites in B.

A. abundant; surface; dry; safe; shallow; rugged; tiny; high; narrow; fresh

B. dangerous; wide; low; flat; scarce; underground; huge; rainy; deep; salt

Exercise 4. Answer the questions:

1. What is a river system?
2. What is a drainage basin?
3. What is a stream or river called if it flows into another stream or river?
4. What is it called if it flows out of a stream or river?
5. How do erosion, transportation, and deposition help rivers do their work of shaping the land?
6. What makes a river great?
7. What are some of the ways people use rivers?

Exercise 5. Cross out a word in a line, which is different. Number each line according to the headings given below.

evaporation	precipitation	irrigation	condensation
irrigation	fishing	pollution	transportation
tributary	nest	source	mouth
shore	insect	estuary	floor
diffusion	erosion	deposition	transportation
fertilizer	nitrate	wetland	waste
polluted	available	fertile	fresh
stream	snow	glacier	ice

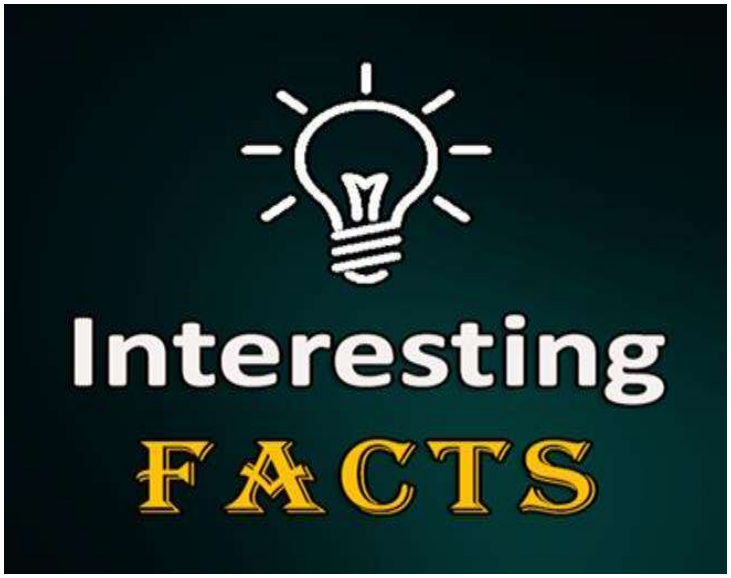
1. Words associated with rivers.
2. Work of rivers and streams.
3. Adjectives describing water.
4. Something that can melt.
5. Purposes that lakes serve.
6. Words associated with seas.
7. Water pollutants.
8. Processes involved in the water cycle.

Exercise 6. Translate the sentences into your native tongue and write down your own sentences with the underlined words:

1. Because of its special qualities, water supports all forms of life, shapes and reshapes the crust of the earth, influences weather and climate, and makes other natural resources usable.
2. Water's special qualities include its ability to store and release energy; its presence on the earth as a liquid, gas, and solid; its dissolving power.
3. The water cycle is the movement of water from earth to the air and back again to earth by the processes of evaporation, condensation, and precipitation.
4. The earth's water supply stays the same year after year because of the water cycle.
5. Polluted water carries germs. People who drink polluted water often get sick and may even die.

Exercise 7. Using different sources find the necessary information to complete the table. Choose any river from the suggested list and get ready to speak about its role in the economy of the country.

The world's largest rivers	
The Amazon river	is in South America. It is the second-longest river in the world, measuring at 6347 km.
The Colorado river	is in the United States. It runs through the Grand Canyon and is 2.334 km long.
The Dnieper	
The Danube	
The Thames	
The Nile	
The Seine	



VATERFALLS

In places a river may descend vertically giving rise to a waterfall. The term cataract, usually designating a series of rapids in a large river, is often applied to waterfalls of large volume. Waterfalls develop due to many causes. The most common one is the presence in the river's course of rocks of unequal hardness or resistance.

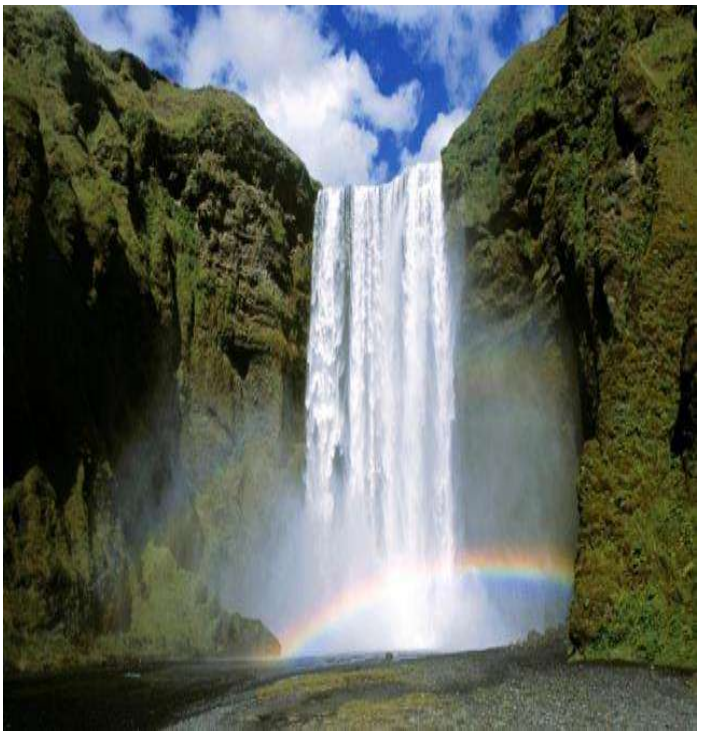
The beautiful Lower Falls in the Yellowstone National Park appeared due to a body of resistant, igneous rock which here extends across the Yellowstone River. The rocks on either side of the river are of a rich yellow color, giving the river its name.

Some waterfalls appear as a result of different rates of erosion

where a resistant layer of rock in a streambed lies over a less resistant rock. Subsequent erosion of the softer rock by the falling water periodically breaks off portions of the harder cap rock.

Some of the largest cataracts in the world, Niagara Falls in North America and Victoria Falls in Zimbabwe, Africa, originated in this way.

Niagara Falls. Between Lake Erie and Lake Ontario the Niagara forms the famous Niagara Falls. The Niagara River was born near the end of the Glacial Period; it flowed northward as now, and about 10 km below the present falls it plunged over the edge of a limestone, which there forms an escarpment, or steep rock-slope. The limestone is resistant, but the swirling water at the base of the fall gradually undercuts the softer rocks below and the heavy limestone, robbed of its support, breaks off in huge blocks. Each time this occurs the crest of the cataract recedes a few feet farther upstream. Century by century the fall has worked its way upstream, leaving a deep gorge.



At the present time the cataract is divided into two parts. The lesser falls is on the American side and the great horseshoe fall is on the Canadian side. So much more water pours over the latter that its crest is receding faster than that of the American fall. Millions of people come each year to see this spectacular natural wonder.

Victoria Falls. One of the world's largest and most magnificent waterfalls Victoria Falls lies on the border between Zambia and

Zimbabwe in South Africa. These falls of the Zambezi River are said to be more imposing than Niagara. Beautiful Victoria Falls lies at the southern end of the Great Rift Valley. They are formed due to inequalities in a vast body of solidified lava in which the river is cutting this portion of its channel. The mist and noise produced by the 122-m drop of the Zambezi River inspired the waterfall's alternate name "smoke that thunders". Many tourists visit the falls each year.

UNIT 27.

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

Impact of Human Activity

A new study shows that 86 per cent of the world's rivers have been damaged by human activity. The study was conducted by researchers from a university in Toulouse, France. They examined data on over 2,500 rivers around the world. They did not look at rivers in the polar regions of the Arctic and Antarctica or in deserts. The scientists looked into changes to biodiversity over the past 200 years. They discovered that biodiversity in over half of rivers has been seriously damaged by humans. The researchers said there were many reasons for this damage. A big reason is the introduction of new species of fish into rivers. Other reasons include pollution, dams, overfishing, farming and climate change.

The researchers say the worst-hit rivers are in western Europe and North America. This is because these regions have large and rich towns and cities. The lead researcher said: "Rivers which have the most economic development around them, like the Mississippi River, are the most strongly impacted." The River Thames in London was one of the worst-affected rivers in the study. The least-

impacted rivers are in Africa and Australia. The researcher said: "This is probably due to a slower rate of industrialization in Africa and low population density around rivers in Australia." He added that rivers in many rich nations are unrecognizable compared with how they were 200 years ago.

Exercise 2. Develop your reading skills. Decide whether the following statements are *True or False.*

1. A half of the world's rivers has been damaged as a result of human activity. ***True / False***
2. Researchers looked at data on more than 2,500 rivers and lakes. ***True / False***
3. Scientists looked at biodiversity loss over the past 2 millenniums. ***True / False***
4. Farming is one reason for the damage done to rivers. ***True / False***
5. The worst-hit rivers are those in South America. ***True / False***
6. The rivers with the least damage are in Africa and Australia. ***True / False***
7. Rivers today look very different to how they looked 200 years ago. ***True / False***

Exercise 3. Match the words with their meanings.

1	study	a	The variety of life in the world or in a particular habitat or ecosystem.
2	conducted	b	Dirty, harmful or poisonous things in the air, rivers, countryside, etc.
3	biodiversity	c	Organized and carried out.
4	examined	d	About the North or South Pole.
5	polar	e	A detailed checking and look of a subject or situation.
6	pollution	f	Looked at in detail.
7	data	g	Facts and statistics.

Exercise 4. Look at these words and write their synonyms, a definition or your own sentence to show that you understand their meaning.

1. damaged
2. conducted
3. discovered
4. reason
5. due to
6. impacted
7. species

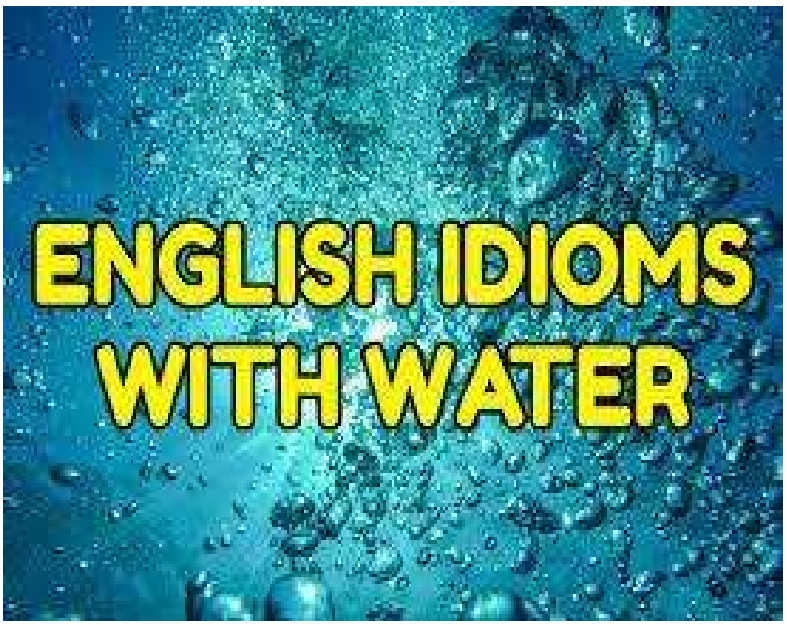
Exercise 5. Scan the text again and write down some questions you would like to ask the class about the text. Ask your groupmates to answer them.

Exercise 6. Fill in the blanks with the correct words from the table suggested below.

release	***dumped***	***caused***
safety threshold	***crucial***	***consuming***

1. Rivers are considered to be a major source of life. They provide fresh water which is ……. for all living organisms.
2. The rapid increase in human population as well as its activity have ……. massive pollution of rivers throughout the world.
3. The ……. of toxic chemical wastes from industries have led to the lack of clean drinking water.
4. The Mississippi River is one of the most polluted rivers in the world. More than 12.7 million pounds of poisonous chemicals such as mercury, fertilizers, sediments etc. have been ……. into the Mississippi River in just one year.
5. The Danube is the most polluted river with antibiotics in Europe. The water samples taken from this river in Austria show the traces of seven antibiotics surpassing the …….

6. The toxin levels in the water make it dangerous for both living creatures having their habitat in water bodies and people ……. it.



Exercise 7. Study the explanations of some idioms, translate the examples and make your own sentences.

1. Keep your head above the water = to manage to survive in a difficult situation, especially concerning money

2. It's water under the bridge = what happened in the past should be forgotten

3. **Dead in the water** = to describes a plan or idea that is unlikely to be successful

4. Uncharted waters = a situation or activity you've never tried or experienced before

5. To be as/like oil and water = if two things or people are like oil and water, they are very different and they cannot exist together or be mixed with each other successfully.

Examples:

1. Many students entered uncharted waters with online education.
2. Don't worry about that stupid mistake, it's water under the bridge.
3. I consider his plan to win the next elections is dead in the water.
4. Nobody expected to see them together at that party, they were like oil and water.
5. Tom lost his job two months ago. But thanks to some savings, he is keeping his head above water.

Exercise 7. Write a magazine article about biodiversity in rivers and how governments should spend huge amounts of money cleaning them up. Include imaginary interviews with people who are for and against this.

Exercise 8. Role Play
You think rivers are those things that require the protection from human activity most of all. Give at least three reasons of it. Tell your groupmates what is wrong with the river waters in your region.

UNIT 28.

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

Fresh Water Problem

Water covers 70% of our planet, and you might think that it is a plentiful resource we will never run out of. However, freshwater used by people for meeting their needs — drinking, cooking, hand-washing, bathing, irrigating the fields — is incredibly rare. Only 3% of the world's water is fresh water.

What is water scarcity? ***Water scarcity*** is defined as a water deficiency or a lack of safe water supplies. As the population of the world grows and the environment becomes further affected by climate change, access to fresh drinking water dwindles.

In 2000, the World Health Organization estimated that 1.2 billion people were not able to meet their needs for safe water. Every day, over 800 children die from dirty water, due to diarrhea caused by poor water, sanitation and hygiene and scarce or

unreliable water and sanitation facilities in many communities around the world.

The impacts of water scarcity affect families and their communities. Without clean, easily accessible water, they can become locked in poverty for generations. Children drop out of school and parents struggle to make a living.

As the international authority on public health and water quality, WHO leads global efforts to prevent transmission of waterborne disease, advising governments on the development of health-based targets and regulations.

WHO produces a series of water quality guidelines, including on drinking water, safe use of wastewater, and safe recreational water environments.

Exercise 2. Guessing the meaning of unknown words.

A. Find the words 1-6 in the text and guess their meanings.		**B. Now match the words 1-6 with their meaning a-f.**	
1	teeming	a	indigence
2	waterborne	b	measure, try to value
3	poverty	c	indigent
4	dwindle	d	swarming with
5	impoverished	e	carried by or through water
6	estimate	f	decline, diminish

Exercise 3. Put these words into the spaces in the paragraph below.

shift mission trend confirmed
acronym areas massive result

The USA's space agency NASA has (1) _____ that human activity is responsible for a (2) _____ redistribution of freshwater across Earth. It said the redistribution is continuing as populations (3) _____ and demand for food increases. In particular, equatorial regions were drying, while tropical (4) _____ and higher latitudes were gaining water supplies. NASA warned that if this (5) _____ continued, many highly populated urban areas could struggle to find sufficient water in the future. NASA's claims are the (6) _____ of a 14-year study into shifting locations and depleting resources of freshwater. It was part of a (7) _____ conducted between 2002-2016 called GRACE, which is an (8) _____ for Gravity Recovery and Climate Experiment.

Exercise 4. Discussion questions.

1. What images are in your mind when you hear the word 'fresh'?
2. Do you take having freshwater for granted?
3. How fresh is the water in your area?
4. What do you think of having to buy water?
5. Why do people need so much water?
6. Should humans change their activity to conserve water?
7. What would you do if water were scarce?
8. How can we use less water?
9. What will happen to populated areas without water?
10. Should there be a big tax on water use?

Exercise 5. Pay attention to water collocations. Write your own example sentences.