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TOPIC 1.

GEOGRAPHY AS A SCIENCE

Active vocabulary

1. accuracy – точність

2. acquires – набувати

3. circumference – півколо

4. cultural geography – соціально-економічна географія

5. crops – посіви, врожай

6. diffusion – поширення

7. dimensions – розміри

8. distinguish – розрізняти

9. gradually spread – поступово поширюється

10. impact – вплив

11. imprint – відбиток

12. interact – взаємодіяти

13. keenly aware – добре знають

14. livestock – тваринництво, домашня худоба

15. minor – незначний

16. mental images – уявні зображення

17. naturally occurring – зустрічаються в природі

18. physical geography – фізична географія

19. ranks – класифікується

20. revolve – обертатися

21. significance – значення, важливість

22. scientist – вчений

23. scratched crude maps – видряпували грубо виконані карти

24. solids – тверді речовини

25. surroundings – оточення, середовище

26. the solar system – сонячна система

27. to collapse – розпадатися

28. tiny – крихітний

29. universe – всесвіт

30. variety – різновидність

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Task 1.

a) Before reading the text try to discuss the following questions:

- What is geography about?

- What kind of science is geography?

- What does the term “geography” mean?

b) Read and translate the text.

THE SCIENCE OF GEOGRAPHY

Geography, which comes from the Greek words geo, meaning “earth”, and

graphein, meaning “description”, is literally a study of the planet Earth. As trained

scientists, geographers describe and analyze the physical characteristics of our planet

and the ways in which people interact with these physical characteristics and with

each other.

Throughout history people who went even short distances from where they lived

became keenly aware of differences that distinguish one place from another and one

group of people from another. Many of these travelers formed mental images of the

places that they had visited and told others what they had seen. They sometimes

scratched crude maps on rocks or on pieces of cloth or leather to improve the

accuracy of their descriptions.

Geography, the study of the relationship between people and their physical

surroundings, or environments, grew directly out of these attempts by early explorers

to describe what they had seen on their travels. Today those who study geography

describe and analyze the earth to explain what is where, why it is there, and what

significance it has.

The study of the earth. Earth is only one of nine planets in our solar system

that revolves around the sun – a minor star in the universe. A planet is an object or

body that is made of various solids and gases and that circles a star. A star and the

planets and other related bodies such as asteroids that revolve around it are known as

a solar system.

Earth is the third planet in distance from the sun, which is 150 million

kilometers away. Even though the sun ranks as one of the smaller stars in the

universe, it is huge when compared to Earth. The sun’s heat and light provide most of

the energy that makes life on Earth possible. It is this life and the physical features of

the earth that geographers attempt to describe and analyze.

Most geographers focus on one of the two major branches of geography,

physical geography and cultural geography, or on one of its more specialized fields.

The earth offers many different natural, or physical, features. Low-lying jungles mark

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some places on the earth. Ice-covered mountain peaks dominate other places. Each

location derives its physical character from combinations of the shapes of the land,

climate, soils, plants, animals, and other naturally occurring phenomena. These

combinations of physical features and their variations from place to place are the

subject of physical geography, the study of the physical features and changes of the

earth’s surface.

Cultural geography. In contrast to physical geography, cultural geography

focuses on the impact of human ideas and actions on the earth. The sum of what a

human group acquires through living together, such as language, knowledge, skills,

art, literature, laws, customs, and life styles, is known as that group’s culture. Cultural

features are evident in a group’s tools, foods, government, religions, and other

characteristics.

Each group of people leaves a distinct imprint (has a strong effect) on its human

habitat, or the place where that group lives. This imprint, or effect, is known as the

cultural landscape. Examples of cultural landscapes include the fields people clear

and farm, the crops and livestock they raise, and the style and distribution of the

villages and cities they build.

The skyscrapers of New York City’s cultural landscape, for example, show how

humans there have changed the environment. People constructed multistoried

buildings to make better use of a very limited amount of space. Even remote villages

in the Himalayas or in the Amazon Basin show how a society, or group of people

who share traditions, institutions, activities, and interests, changes its habitat.

Along with the cultural landscape, geographers also study the process of cultural

diffusion, or the spread of parts of a culture from one area to another. The spread of

Christianity from Palestine to other parts of the Middle East and to Europe between

the years A.D. 100 and 600 is one example of cultural diffusion. The spread of the

alphabet is another example. The alphabet originated in the Middle East about 2000

B.C. and gradually spread to most parts of the world. Today many different cultures

use various forms of the alphabet to write their languages. The process of cultural

diffusion continues. The spread of rock music from Great Britain and the United

States to other parts of the world illustrates modern cultural diffusion.

Task 2. Answer the questions:

1. What do geographers as trained scientists describe?

2. How did the study of geography develop?

3. What do modern geographers study?

4. What do geographers attempt to describe and analyze?

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5. What are the two main branches (subdivisions) of geography?

6. Give examples of cultural diffusion today.

7. What is known as group’s culture?

8. What is cultural landscape?

9. What is the subject of physical geography?

10. What is an example of cultural diffusion?

Task 3. Are these sentences True or False:

1. Geography is literally a study of the planet Earth.

2. Geographers describe and analyze the physical characteristics of our planet.

3. Travelers don’t formed mental images of the places that they had visited.

4. They didn’t scratched crude maps on rocks or on pieces of cloth or leather.

5. Earth is the third planet in distance from the sun, which is 150 million

kilometers away.

6. The sun’s heat and light didn’t provide most of the energy that makes life on

Earth possible.

7. Cultural geography focuses on the impact of human ideas and actions on the

earth.

8. Each group of people didn’t leave a distinct imprint (has a strong effect) on its

human habitat.

9. People constructed multistoried buildings to make worse use of a very limited

amount of space.

10. The process of cultural diffusion continues.

Task 4. Make the summary of the text.

Task 5. Fill in the correct word from the list below:

1.  interaction of humans, 2. to generalize, 3. attentiveness, 4. geographers,

5. interdisciplinary, 6. human, 7. systematic study, 8. nature, 9. man,

10.  temporal database , 11. geography, 12. preoccupation, 13. variety of topics

a. Geography is a … of the earth and its features.

b. Traditionally, … has been associated with cartography and place names.

c. Although many … are trained in toponymy and cartology , this is not their

main …. .

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d. Geographers study the space and the … distribution of phenomena,

processes, and features as well as the … and their environment .

e. Because space and place affect a …, such as economics , health , climate ,

plants and animals , geography is highly ….

f. The interdisciplinary nature of the geographical approach depends on an …

to the relationship between physical and … phenomena and its spatial patterns.

g. Geography has higher aims: it seeks to classify phenomena (alike of the

natural and of the political world), to compare, …, to ascend from effects to causes,

and, in doing so, to trace out the laws of … and to mark their influences upon … .

Task 6. Translate into Ukrainian:

1. Population geography is the study of geography that is mainly concerned with

the demographic distribution of the people. It includes the study of population

distribution, migration, origin and growth in a particular region.

2. Economic geographers study the manner in which different products and

services are produced and distributed in the various niche market. Additionally, this

branch also examines the manner in which wealth is distributed over various regions

across the planet.

3. Medical Geography is the branch of geography that deals with the study of

patterns and spread of diseases. This involves epidemics and pandemics and their

origins and distribution over a given geographical location.

4. Religious geography is the branch of human geography that studies the spread

and distribution of religious groups, their culture and the built environment.

5. Political geography − branch of human geography studies and investigates the

political aspects of humans. This involves the boundaries of countries, the

development strategies put in place and the voting patterns and behaviors within each

jurisdiction.

6. Biogeography is the study of animals and plants and their distribution and

patterns on the earth’s surface.

7. Water resources geography is the branch of physical geography that deals

with water resources and how the various water resources are managed and

distributed across the physical earth. This also involves the study of how water is

collected, distributed and used in different places spread across the planet.

8. Climate Geography is a branch of physical geography that deals with the

study of the weather patterns and how these weather patterns affect the climate of a

region on the planet. This also includes the study of all the activities that take place

within the atmosphere and the atmospheric composition.

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9. Geomorphology is a branch of physical geography that deals with the study of

land and the processes that different land formations go through. It also studies the

various land forms and the subsequent disappearance of these forms through such

factors as erosion.

10. Environmental geography is the study of spatial aspects of interactions

between humans and their immediate environment and the resultant repercussions of

this interaction. This branch of geography helps in understanding the various types of

human activities over an area and their resultant effect on this area.

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TOPIC 2.

THE ROUND EARTH ON FLAT PAPER

Active vocabulary

1. aerial photographs – фотографії, зняті з повітря

2. ante meridiem (a.m.) – до полудня

3. bulky – громіздкий, великий

4. can be folded – можуть бути зігнуті

5. to carry around – носити з собою

6. to carry out – виконувати, здійснювати

7. concerns – стосуватися

8. distortions – спотворення

9. the earth’s curved surface – вигнута поверхня землі

10. the earth’s grid – сітка Землі

11. an easy-to-use reference – простий у використанні довідник

12. the entire earth – вся земля

13. inaccuracies – неточності

14. inevitable – неминучий

15. landmasses – землі, суша

16. latitude – широта

17. longitude – довгота

18. map projections – картографічні проекції

19. obvious – очевидний

20. overlapping – перекриття

21. post meridiem (p.m.) – після полудня

22. preserved – збережений

23. related – пов’язані

24. remote sensing – дистанційне зондування

25. rotates – обертається

26. rugged terrain – пересічена місцевість

27. satellite images – супутникові знімки

28. strips – смужки

29. to scale – вимірювати, масштабувати

30. three-dimensional object – тривимірний об’єкт

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Task 1.

a) Before reading the text try to discuss the following questions:

- Do geographers use any tools?

- What is a “globe”?

- What are “maps”?

b) Read and translate the text.

THE ROUND EARTH ON FLAT PAPER

Geographers use a variety of tools to carry out their work. The tools that most

people identify with geography are those that are still most important to geographers

today – globes and maps.

Modern geographers, however, also use tools such as aerial photographs,

satellite images, and computer programs to help them analyze the interactions

between people and their environments.

The best tool to use often depends on the geographic theme that is the focus of

the research.

Globes and maps are useful models of the earth. However, globes and maps do

not provide perfect representations of the earth. Each has specific advantages as well

as disadvantages.

Globes. The most important advantages of globes relate to their shape. A globe

is the only model of the earth in the shape of a sphere, just like the earth. A globe,

then, provides the most accurate representation of the shape of the earth. Because it is

true to scale, the landmasses and bodies of water the globe illustrates have the same

shapes as they do on the earth’s surface. When you look at Greenland on a globe, for

example, its true shape is what you see. You can also compare its size to any other

land body. In addition, a globe accurately represents the earth’s grid of parallels and

meridians, as well as direction and distance from one place to another.

Among the disadvantages of globes is that they often are not practical to use.

Globes are expensive and most are too big and bulky to carry around.

In addition, people can view only one-half of a globe at a time. This makes it

impossible, for example, to look at Canada and India at the same time because they

lie on opposite sides of the globe, just as they lie on opposite sides of the earth.

Another disadvantage of globes concerns the problem of detail. Because globes

represent the entire earth, the individual areas that they illustrate are relatively small.

As a result, globes cannot show the detailed features of an area, such as roads,

streams, forests, and parks.

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The oldest preserved globe is kept and displayed to the public in a museum in

Germany. This wooden globe was made in 1492. It is 15 cm in diameter. The

globemaker drew on it the land and water bodies that he thought existed. What is

interesting about this globe is that it shows the world as Columbus thought of it.

Maps. Maps are flat representations of the earth. Maps vary in size from small

maps that appear in pocket size to huge wall maps. Maps also vary in purpose.

Despite their variety, all maps have similar components, or parts. These include

a title; a legend or key; a direction indicator; and a scale.

One of the most obvious advantages of maps over globes is that they are more

convenient to use.

Maps can be rolled and folded and are easy to carry around.

Maps and related material can also be collected in an atlas to provide an easy-to-

use reference. Another advantage of maps is that they can show the earth’s entire

surface at one time, or can show specific details.

Maps can also present information about a wide range of topics related to both

physical and cultural features of the earth.

Using different colors and symbols, maps can illustrate many kinds of topics,

including rainfall, mineral resources, and religions. Presenting such a variety of

information about an area often helps geographers to see regions and relationships

otherwise difficult to visualize.

On the other hand it is impossible to accurately show a three-dimensional object

like the earth on a flat, two-dimensional map. For this reason all maps have one or

more inaccuracies, called distortions. The problem of distortion remains the major

disadvantage of maps.

Task 2. Answer the questions:

1. What tools do geographers use?

2. What are useful models of the earth?

3. Do globes and maps provide perfect representations of the earth?

4. What are the major advantages and disadvantages of globes?

5. Where the oldest preserved globe is kept?

6. How do maps vary?

7. What components do maps have?

8. What are the major advantages and disadvantages of maps?

9. Why is cartography related to all the fields of geography?

10. Why do maps have distortions?

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Task 3. Are these sentences True or False:

1. Geographers didn’t use a variety of tools to carry out their work.

2. The best tool to use often depends on the geographic theme that is the focus

of the research.

3. The most important advantages of globes relate to their shape.

4. A globe didn’t provide the most accurate representation of the shape of the

earth.

5. Globes are not practical to use.

6. The oldest wooden globe was made in 1492.

7. Maps are flat representations of the earth.

8. Maps aren’t easy to carry around.

9. Maps can’t illustrate many kinds of topics.

10. The problem of distortion remains the major disadvantage of maps.

Task 4. Make the summary of the text.

Task 5. Fill in the correct word from the list below:

1. instrument, 2. new highways, 3. converts,

4. aerial photographs, 5. distorted, 6. pictures, 7. high-altitude airplanes,

8. the earth, 9. three-dimensional, 10. accurate and detailed,

11. relationships, 12. maps, 13. ground, 14. closer

a. Geographers use aerial photographs – … taken from above the earth – to

study … involving people and places that are not easily seen from … level.

b. Aerial photographs of traffic patterns, for example, can be used to help

plan … .

c. … even show features of the ocean floor.

d. Because aerial photographs provide such … information, cartographers rely

on them as a source of information when making ….

e. Most aerial photographs used to make maps are taken by cameras in … and

are developed in strips of overlapping pictures.

f. An instrument called a stereoscope … a pair of overlapping aerial

photographs into a … view of the area.

g. Elevations appear somewhat … on aerial photographs because the camera

taking the pictures is … to the tops of the mountains than to the valleys.

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h. This distortion is corrected by using a viewing … called a stereoplotter,

which gives a more accurate three-dimensional view of … .

Task 6. Answer the questions:

1. What does spherical mean?

a. accurate

b. flat

c. ball-shaped

d. imaginary

2. When was the first known globe made?

a. 250 B.C.

b. 150 B.C.

c. 250 A.D.

d. 1800

3. What does latitude show us?

a. mountains and oceans

b. location north and south of the equator

c. location east and west of the Prime Meridian

d. an accurate picture of the earth

4. What does longitude show us?

a. mountains and oceans

b. location north and south of the equator

c. location east and west of the Prime Meridian

d. an accurate picture of the earth

5. What are the advantages and disadvantages of globes compared to flat maps?

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TOPIC 3.

THE EARTH AND ITS STRUCTURE

Active vocabulary

1. cell – відсік

2. claimed – стверджувати

3. core – ядро

4. controversy – суперечки

5. crust – земна кора

6. dense – щільний

7. devised – розроблений

8. drags along – тягнути

9. discontinuity – розрив

10. diversity – різноманітність

11. eruption – виверження

12. fracture − тріщина

13. fossil – копалина, скам’янілість

14. heavy − важкий

15. inner core − внутрішня частина ядра

16. interior – внутрішній простір

17. liquid layer – рідкий шар

18. the mantle − мантія

19. molten – розплавлений, розтоплений

20. outer core − зовнішня частина ядра

21. piece together – з’єднувати

22. plateaus – плато

23. solid − твердий

24. spinning cloud – хмара яка обертається

25. split apart – розділити

26. towering – високий, що збільшується

27. tremendous – величезний

28. uppermost − верхній

29. vast – величезний, широкий

30. viscous − в’язкий

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Task 1.

a) Before reading the text try to discuss the following questions:

- What do you know about the surface of the Earth?

- What is the Earth’s interior?

- What do you know about drifting continents?

b) Read and translate the text.

THE EARTH AND ITS STRUCTURE

The features of the earth’s surface range from vast plains to towering mountain

peaks, from table like plateaus to deep ocean floors. For centuries scientists have

devised theories to help explain the diversity of the earth’s surface features and the

forces that change those features.

The Earth’s origin. Scientists have only theories, or scientific guesses, about

how the earth appeared. According to one theory, a hot, spinning cloud of dust and

gas formed in space. Parts of this dust and gas cloud separated, forming the sun, the

earth, and other planets. The part of the dust and gas cloud that became the earth

slowly cooled. As it cooled, it gradually became a solid mass. There are scientists

who believe the earth became a solid mass about 5.5 billion years ago.

The Earth’s interior. Scientists have studied the surface of the earth for

centuries. Yet each year brings new information about the earth’s surface that is

added to the data already known. Direct observation of the earth’s deep interior,

however, remains impossible. Currently scientists can gather information about the

center of the earth only through indirect evidence.

Vibrations of the earth caused by earthquakes, or seismic waves, tell what the

earth’s inner structure is like. These waves change speeds as they move through

different kinds of rocks: faster through solid material, slower through molten

material. By studying the wave patterns, scientists can learn a great deal about the

earth’s interior. From such studies they have concluded that the three major layers of

the earth’s interior are the core, the mantle, and the crust.

The earth consists of a series of layers, with an extremely dense, heavy ball

known as the inner core at its centre. This solid inner core has a radius of about 780

miles (1250 km) and is surrounded by a heavy liquid layer forming the outer core.

Incredible heat and pressure keep the heavy metallic material of this outer core in a

molten state to a thickness of nearly 1400 miles (over 2200 km). Outside the core lies

the mantle of the earth, where the rock material is lighter and less dense than in the

core; the complex mantle contains zones of viscous and liquid matter as well as solid

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rock. It is known that the mantle’s material is in continuous motion in giant

convection cells. The moving material in these cells drags along the bottom of the

solid crust and pushes and pulls pieces of the crust along. Seismic waves also indicate

that in the mantle there is a significant change (a discontinuity) at a depth of some

420 miles from the earth’s surface.

Drifting continents. The earth today is very different from the earth of millions

of years ago. The texture of the land, the locations of the landmasses, and the climate

have undergone tremendous changes – changes that scientists even now can only

begin to understand.

Most scientists are convinced that the earth’s continents are slowly moving, or

drifting. One of the first proponents of this idea was Francis Bacon, a seventeenth

century British scientist. After studying the latest maps of the earth and trying to

piece together the shapes of the continents, Bacon concluded that the continents once

were joined, forming one huge landmass.

In 1912 a German geographer named Alfred Wegener proposed the theory of

continental drift. Wegener believed that there was once a single supercontinent that

he called Pangaea, from the Greek words pan, meaning “all”, and ge, meaning “the

earth”. According to Wegener, Pangaea split apart millions of years ago to form two

huge continents – Laurasia in the Northern Hemisphere and Gondwanaland in the

Southern Hemisphere which later broke up to form continents. Wegener believed that

the landmasses drifted for millions of years to their present locations. He also claimed

that the continents are still drifting.

Wegener’s theory caused a storm of controversy. Despite fossil and geological

evidence, most scientists could not accept the idea. They argued that it was

scientifically impossible for the continents to move across the solid seafloor. At the

time Wegener and his supporters could not conclusively prove their arguments. New

studies of the seafloor, however, have given more scientific evidence to support the

theory of continental drift.

Task 2. Answer the questions:

1. How does the earth appeared?

2. How can scientists obtain information about the deep interior of the earth?

3. How do waves change speeds?

4. Why have scientists concluded that the interior of the earth consists of

different layers of solid and molten materials?

5. What are the three major layers of the earth?

6. What is outside the core?

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7. What is the mantle of the Earth?

8. What does the theory of continental drift state?

9. How did the work of Alfred Wegener support Francis Bacon’s theory?

10. Why did Wegener’s theory cause controversy?

Task 3. Are these sentences True or False:

1. Scientists have only theories about how the earth appeared.

2. Scientists have studied the surface of the earth for centuries.

3. The earth today is the same as it was millions of years ago.

4. The earth consists of one layer.

5. Inner core has a radius of about 780 miles.

6. Outside the core lies the mantle of the earth.

7. The complex mantle contains zones of viscous and liquid matter as well as

solid rock.

8. Most scientists aren’t convinced that the earth’s continents are slowly

moving, or drifting.

9. Bacon concluded that the continents didn’t form one huge landmass.

10. Wegener claimed that the continents aren’t still drifting.

Task 4. Make the summary of the text.

Task 5. Fill in the correct word from the list below:

1. plate tectonics, 2. takes place, 3. away, 4. cracks, 5. brush,

6. ocean floor, 7. plates, 8. observations, 9. spreading, 10. slowly,

11. moving, 12. separates, 13. seafloor, 14. collide, 15. sections

a. In the 1950s scientists began studying the … in more detail than ever before.

b. Their … showed that the seafloors were slowly … apart along well-defined

oceanic ridges.

c. The discovery of … spreading provided the evidence for the theory of … .

d. The theory of plate tectonics states that great faults, or … in the crust of the

earth, divide it into huge … called plates – 7 larger ones and several smaller ones.

e. According to this theory, these … , on which the continents and ocean lie, are

continuously …, as they “float” on the heavier rock of the earth’s mantle.

f. The plates move very …, perhaps no more than 1 to 6 cm a year.

g. Some plates move … from each other, while others move closer together.

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h. Plates moving closer together sometimes … .

i. Other plates … against each other as they move side by side.

j. This movement, for example, … along the San Andreas Fault, which … the

two plates in California.

Task 6. Put questions to the following statements:

1. The surface of the earth is the outer skin of the crust.

2. Liquid rock (lava) can penetrate through the vents of volcanoes and through

fissures to flow out onto the surface.

3. Chemical change generates the heat that keeps rocks in a viscous state.

4. Continuous movement of material in the mantle causes subtle changes in the

crust.

5. The solid inner core has a radius of about 780 miles (1250 km).

6. There is a significant change at a depth of some 420 miles from the earth’s

surface.

7. Incredible heat and pressure keep the heavy metallic material of the outer core

in a molten state.