

(version 3)

I. HUMAN - ENVIRONMENT INTERACTION



A. LANDFORMS

1. Earth's topography is made up of many different types of landforms.
2. While the planet is covered primarily with water, the four major types of landforms are:
 - a) **mountains** -huge towers of rock; highest landform
 - b) **hills**-lower and more rounded
 - c) **plains** -flat lowlands
 - d) **plateaus**-flatlands at higher elevations



3. Minor landforms include

a) **buttes** (isolated hill with steep sides and a flat top)



b) **valleys** (long stretch of land lower than the land on either side),



c) **canyons** - a gorge; a deep cleft between two cliffs

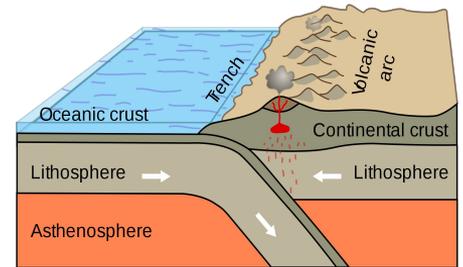


d) **basins**- A region drained by a river and its tributaries. A low-lying area on the Earth's surface in which thick layers of sediment have accumulated.



4. These landforms can be formed by a variety of natural forces, including **erosion from water and wind**, **plate movement**, **folding and faulting**, and **volcanic activity**.

5. Humans settle on all types of landforms:



a) Peninsula -A peninsula is a piece of land surrounded by water on the majority of its border while being connected to a mainland from which it extends.

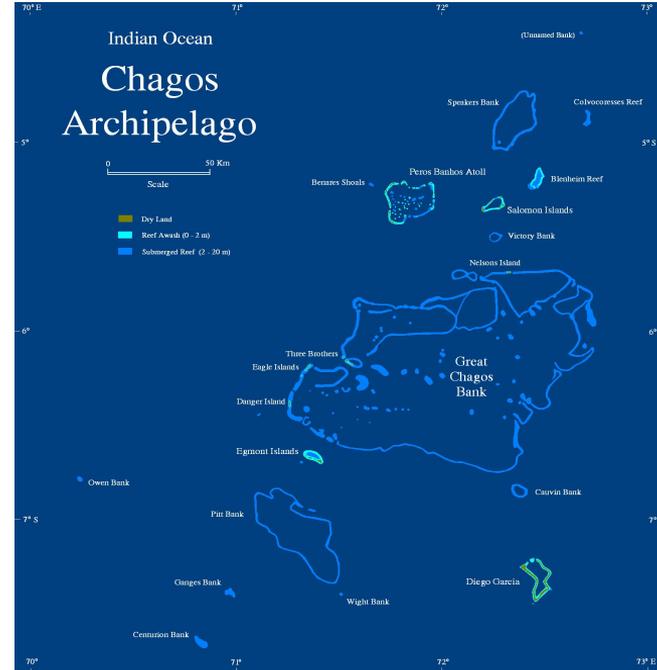
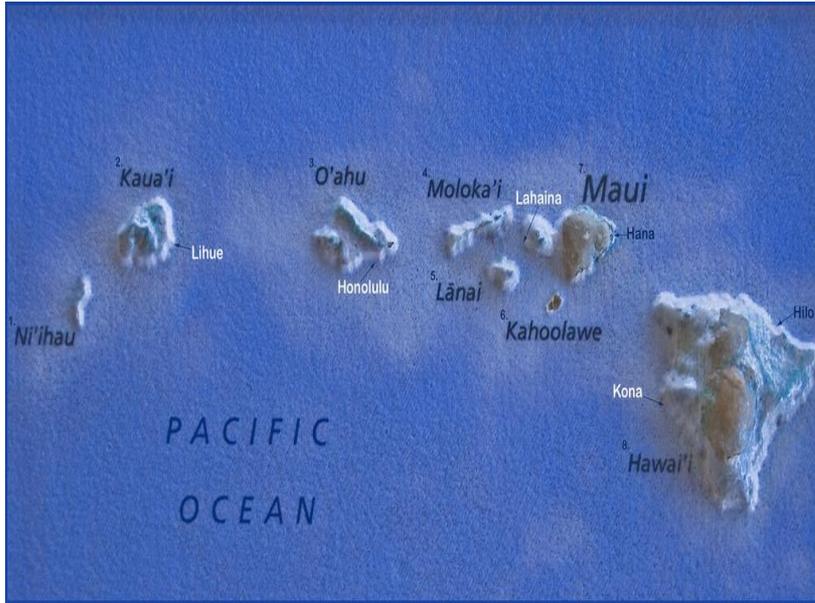
Example: Florida



b) **isthmus**- a narrow strip of land with sea on either side, forming a link between two larger areas of land.



c) **archipelago**- sometimes called an island group or island chain, is a chain, cluster or collection of islands



B. SHAPING LANDFORMS

1. Forces acting both inside and outside the Earth work to change the appearance of the Earth's surface.
2. Both of these processes happen over a **long period** of time, sometimes millions of years:
 - a) **Tectonic plate movement** under the Earth can create landforms by pushing up mountains and hills.
 - b) **Erosion** by water and wind can wear down land and create landforms like valleys and canyons.

4. Some changes are due to **rapid processes**, such as

a) landslides

b) volcanic eruptions

c) earthquakes.

<https://www.youtube.com/watch?v=Q7txs0SPaJw>

* Now Using the green/purple textbooks look up the following definitions in your notes

1. Plate tectonics

2. Erosion

3. Earthquakes

4. Weathering

5. Faults

6. Landslide

7. **Volcano**—A volcano is a rupture in the crust of a planetary-mass object, such as Earth, that allows hot lava, volcanic ash, and gases to escape from a magma chamber below the surface.

C. THE WATER PLANET

1. About **70%** of the Earth's surface is covered by water, but only some of the water is usable
2. Water exists in many different **liquid** forms:

- a) Streams
- b) Rivers
- c) Lakes
- d) Seas
- e) Oceans



3. The atmosphere holds water **vapor**, or water in the form of gas



4. **Glaciers and ice sheets** are masses of water that are frozen in **solid** forms.



WORKSHEET ON LANDFORMS

<https://www.mrnussbaum.com/wlandforms/>

Define all landforms and cite examples

D. LANDFORMS AND CLIMATE

1. Humans depend on the land and water for basic necessities:
 - a) Food
 - b) Clothing
 - c) Shelter

2. People settle on all types of landforms based on:
 - a) **Climate**- average temperatures, precipitation for a region
 - b) Availability of **Resources**- freshwater, grow or catch food, raise animals/fish

3. **Weather** refers to the changes in temperature, wind direction/ speed, and air moisture that takes place over a short time

4. **Climate** is the weather in an area that is looked at over many years

5. Earth's climate is directly linked to the **sun**.

6. **Wind** is the movement of air across the Earth

a) **Trade winds** (east to west)

b) **Westerlies** (west to east)

7. **Storms** usually occur when warm moist air rises

- a) Thunder and lightning, rain
- b) Tornadoes
- c) Blizzards
- d) Hurricanes
- e) typhoons

8. **Ocean currents** are steady flowing streams of water in the world's seas and they can affect **climate**

- a) **El Nino (the boy)** changes in normal wind and water patterns in the Pacific Ocean causing unusual weather and producing heavy rains and floods
 - b) **La Nina (the girl)** in some years the opposite occurs producing cool waters and low rainfall
9. **Sun, wind, water, and the shape of the land** affect climate.
10. The effects of the wind, water, latitude and landforms combine to create different **climate zones**.

11. The Earth has three main climate zones—**tropical, temperate, and polar**. These zones can be further divided into smaller zones, each with its own typical climate. A region's climate, together with its physical characteristics, determines its plant and animal life.

a)POLAR AND TUNDRA

Polar climates are cold and dry, with long, dark winters. In the tundra (a treeless region bordering the Arctic), temperatures rise above freezing for only a few months each year.

b)BOREAL FOREST

Boreal (cold coniferous) forests lie south of the tundra, stretching across much of northern Canada, Scandinavia, and Russia. Temperatures fall below freezing for 4–6 months a year.

c) MOUNTAIN

On mountains, the temperature decreases with altitude (height), and many high peaks are always covered in snow. Mountain climates are usually wetter and windier than lowland regions.

d) TEMPERATE FOREST

Temperate climates have warm summers and cool winters with year-round rain or snow. Temperate forests are characterized by deciduous trees, which lose their leaves during the winter.

e) MEDITERRANEAN

A Mediterranean climate is found in regions bordering the Mediterranean Sea, and in Australia and California. It is characterized by hot, dry summers and cool, wet winters.

f) DESERT

Earth's deserts are hot and dry year-round, and usually receive less than 10 in (250 mm) of rainfall a year. Deserts are often found in the center of continents, far from the sea.

g) DRY GRASSLAND

Dry grasslands are found in the center of continents where temperate variations are extreme. They have hot summers, cold winters, and little rainfall, so very few trees can grow there.

h) TROPICAL GRASSLAND

Tropical grasslands, such as the African savanna, lie between desert areas and tropical rainforests. The climate is hot all year, but with a distinct wet season and dry season.

i) TROPICAL RAINFOREST

Tropical rainforests are found in regions near the equator. Here, the climate is hot and wet all year, with temperatures remaining at around 80–82°F (27–28°C).

12. Large **cities** show significant climate difference from surrounding areas in their climate zones. These **urban climates** are marked by higher temperatures and other differences.

E. HUMAN IMPACT ON ENVIRONMENT

1. Human activity can have a **negative** impact on the air.
 - a) **Air pollution** is when people burn oil, coal and gas and chemicals are released into the atmosphere
 - b) **Smog** is the polluting chemicals combined with the ozone
 - c) **Acid rain** is when chemicals in the air mixing with precipitation
 - d) **Chlorofluorocarbons (CFC's)** destroy the ozone layer which protects us from harmful rays

2. Gases in the atmosphere trap the sun's warmth causing a **Greenhouse Effect** which helps warm the Earth

a) Pollution is strengthening the Greenhouse Effect raising the temperatures around the Earth. This is known as **global warming**.

b) Some of the effects of global warming are:

More frequent and severe weather

Higher sea levels

More acidic oceans

Dirtier air

Higher wildlife extinction rates

Higher death rates

The Greenhouse Effect

Some solar radiation is reflected by the Earth and the atmosphere.

Some of the infrared radiation passes through the atmosphere. Some is absorbed and re-emitted in all directions by greenhouse gas molecules. The effect of this is to warm the Earth's surface and the lower atmosphere.

Most radiation is absorbed by the Earth's surface and warms it.

Infrared radiation is emitted by the Earth's surface.

