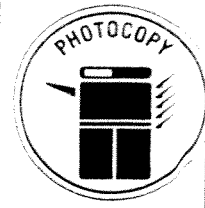


Topic 2: Patterns in Physical Geography (Gr. 7) Unit 1: The Three Major Land-Forms



Introduction to the Three Major Land-Forms (page 2)

Introduction

The study of topographic relief (defined as the shape of the land surface) is of considerable importance to the geographer because it impacts on pattern of human activity. A mountain chain forms a physical barrier to human settlement. A plain (flat land) may be densely populated with rich farming soils. There are three major land-form groups: Plains, Plateaus + Hills and Mountains.

PLAINS

A plain is a land area whose surface is nearly flat or gently rolling and whose elevation is usually low. Most plains lie less than 300 metres above sea level. It is estimated that plains occupy 75 percent of the Earth's land surface. Plains may be formed as a result of prolonged erosion or deposition. The constant deposition fills surface cracks etc., making the land nearly flat. Most plains are not effected by tectonic forces (movement of the Earth's crust). Plains are found in the interiors of North America, South America and North Western Europe and Asia. Most plains border the Atlantic and Arctic oceans, very few border the Pacific Ocean.

Plains may be subdivided into three major types, based on the process of formation and elevation.

- 1) Coastal plains - formed when a continental shelf (shallow water at the edge of continents) is either uplifted by gradual forces or when the sea level lowers (e.g., after the Ice Age). Elevations are normally 100 metres above sea level.
Example: Coastal plain of the Eastern United States

- 2) Alluvial plains - formed by running water when a river slows down and deposits the suspended sediments along the river (flood plain) or at the mouth of river (delta). Elevations normally 100 to 300 metres above sea level.
Examples: Mississippi and Nile River deltas.

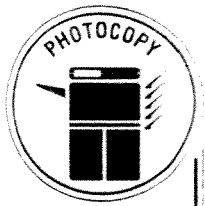
- 3) Interior plains - formed when extremely large sections of sedimentary rock are gradually uplifted. Elevations normally below 600 metres above sea level. In rare circumstances these plains may exceed 600 metres; for example, the high plains of West-central North America have an elevation of more than 1000 metres above sea level. This area has been gradually uplifted. Uplifts like this must have occurred recently and very gradually so that agents of erosion have not severely altered this land-form.
Examples: Interiors of South America and Australia.

PLATEAUS, UPLANDS and HILLS

A plateau is a tablelike surface area fairly flat or moderately rolling, and bounded on at least one side by a steep slope. Plateaus may also be bounded by mountains. Plateaus may have many deep valleys cut by flowing rivers, however if the area is reasonably flat and lie at about the same elevation, the region is called a plateau. Plateaus may be formed by the uplifting of ancient seabeds or by lava flows. Examples of uplifted plateaus may be found in areas of Bolivia, Mexico and Tibet (elevation 2000 to 5000 m). Examples of plateaus made by lava flows are the Columbia-Snake plateau and the Deccan plateau of India (elevation 1000 to 2000 m). Lower elevation plateaus are called uplands



Topic 2: Patterns in Physical Geography (Gr. 7) Unit I: The Three Major Land-Forms



Introduction to the Three Major Land-Forms (page 3)

and are found in Africa, the Laurentian plateau of Canada and the Meseta of Spain. Hills may occur within plateaus and are characterized by steep slopes with very short vertical elevations.

MOUNTAINS

Mountains are areas of moderate to steep slopes which meet to form narrow divides, ridges and peaks. A mountain range is a series of peaks and ridges with similar structure and geology (rock types) such as the Rocky mountains. The world's mountain ranges are located where the plates of the Earth's crust have collided, resulting in mountain building. Some mountain ranges like the Andes, Alps and Himalayas continue to form and gain elevation.

Mountains may be subdivided into four categories according to the process of their formation (see diagrams on page 4).

1) Fold mountains - formed when one or more plates of the Earth's crust collide causing the surface rock to buckle into giant folds. Most of the high and extensive mountain ranges of the world are fold mountains. Elevations are normally greater than 3000 metres above sea level.

Example: the Andes, the Rockies, the Himalayas and the Alps.

2) Fault Block mountains or Horst - formed when colliding plates build up pressure along parallel cracks (faults) in the Earth's surface. The extreme pressure causes large blocks of land to slip and be uplifted. Elevations are normally greater than 3000 metres above sea level.

Example: The Sierra Nevadas of California.

3) Intrusive Volcanic mountains or Batholiths - formed when molten magma does not reach the surface of the Earth. Intrusions of magma solidifies, causing the overlying surface rock to buckle or bulge. Erosion later exposes the solidified magma. Elevations are normally between 1000 and 2000 metres above sea level.

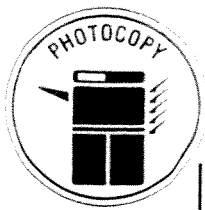
Example: The Coastal Mountain Range of British Columbia is a giant batholith that has been uplifted and subsequently eroded.

4) Extrusive Volcanic mountains or Continental mountains - formed when molten magma flows onto the Earth's surface. They may be found as part of coastal or fold mountain ranges. Elevations are normally greater than 2000 metres above sea level.

Examples: Rocky Mountains, Mt. Vesuvius, Mt. St. Helens, Mt. Shasta.

The land-forms in this unit have been greatly simplified. The complexity of each land-form will be discussed in greater detail in a High School Geography course.

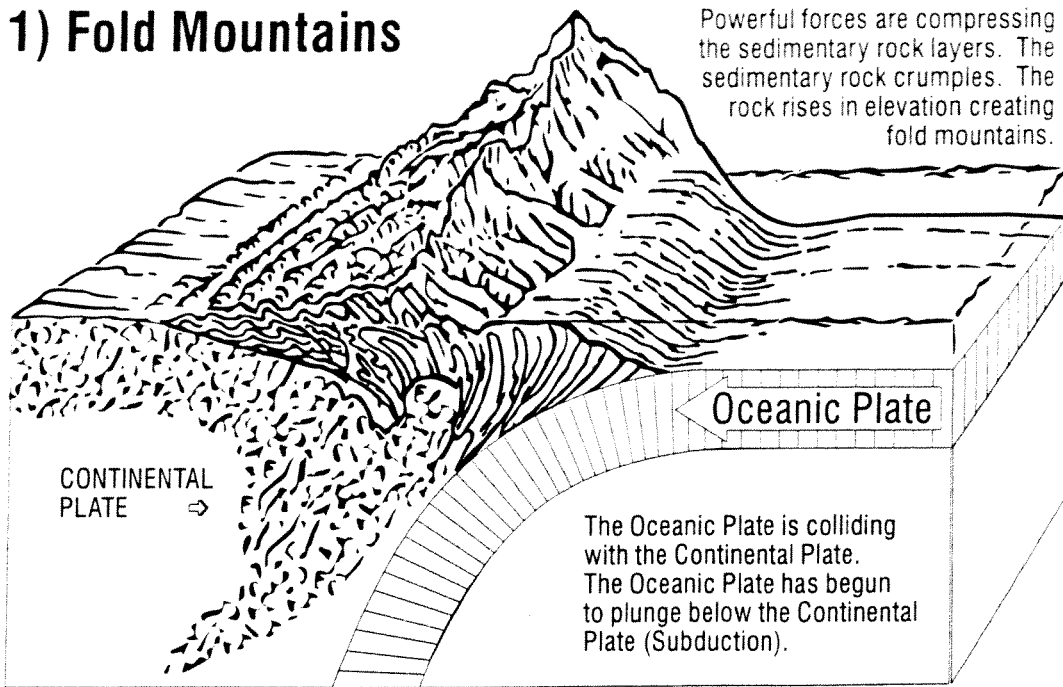




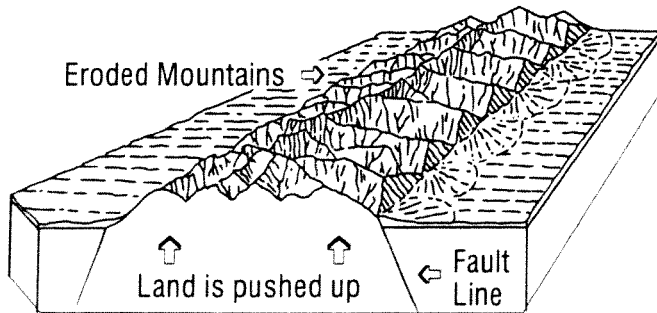
Diagrams of the Four Categories
of Mountains (page 4)



1) Fold Mountains



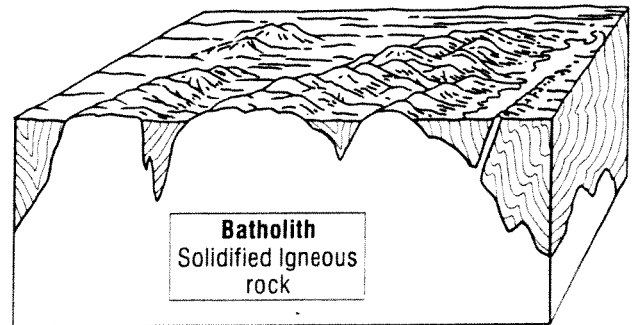
2) Fault Block Mountains



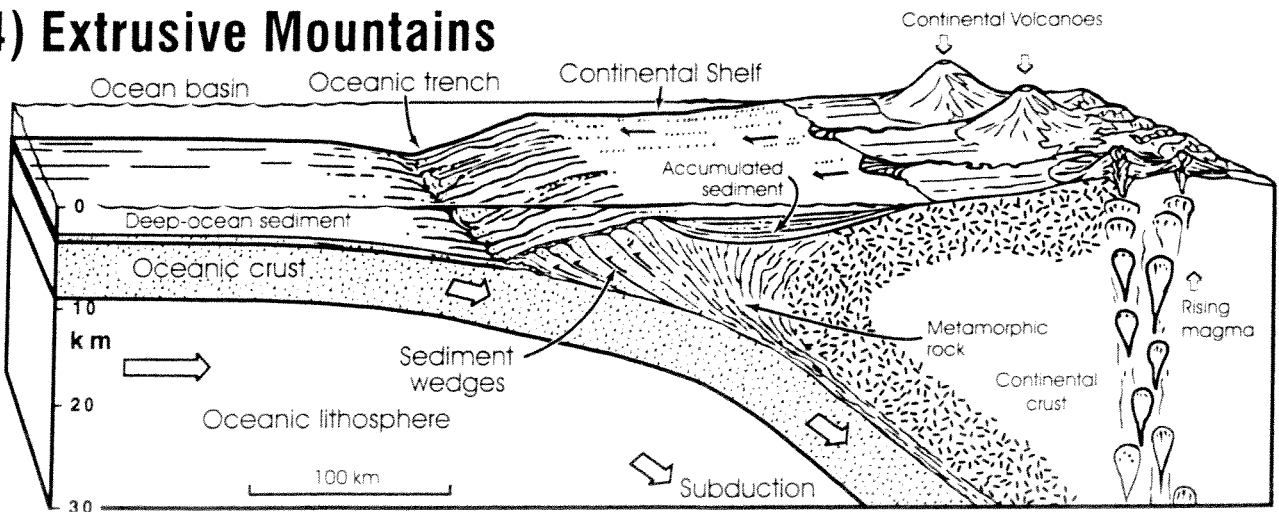
This once flat landmass has been elevated and forces of erosion have carved the land into mountains.

3) Intrusive Mountains

Erosion very gradually erodes the soft rock to expose hard igneous rock (Batholith). Erosion forms these mountains



4) Extrusive Mountains





**The Three Major Land-Forms;
Study Organizer (page 5)**

DAY 1

PHOTOCOPIY THIS PAGE COMPLETE THE CHART

- Category 3: Communication of Required Knowledge
- 1 rarely communicates with clarity and precision
 - 2 rarely uses appropriate terminology, vocabulary and units
 - 3 sometimes communicates with clarity and precision
 - 4 sometimes uses appropriate terminology, vocabulary and units
 - 5 usually communicates with clarity and precision
 - 6 usually uses appropriate terminology, vocabulary and units
 - 7 consistently communicates with clarity and precision
 - 8 consistently uses appropriate terminology, vocabulary and units

Student Name: →

Today's Date: →

Instructions: Read the fact sheets (pages 2+3) and complete the chart below (time allotment 40 minutes).

MAJOR LAND-FORM	A BRIEF DESCRIPTION ON HOW THIS LAND-FORM WAS FORMED OR CREATED	ELEVATION (metres)	EXAMPLE(S)
Coastal plains			
Alluvial plains			
Interior plains			
Plateaus, Uplands & Hills (uplifted plateaus)			
Plateaus, Uplands & Hills (lava flow plateaus)			
Fold Mountains			
Fault Block Mountains			
Intrusive Volcanic Mountains			
Extrusive Volcanic Mountains			