NCERT Class 11 Geography Chapter 6: Geomorphic Processes YouTube Lecture Handouts

Get video tutorial on: https://www.youtube.com/c/Examrace

Watch video lecture on YouTube: NCERT Class 11 Geography Part 1 Chapter 6: Geomorphic Processes NCERT Class 11 Geography Part 1 Chapter 6: Geomorphic Processes

Find this video at: https://www.youtube.com/video/tDkDLEjeyMo?rel=0

- Exogenetic & endogenetic forces act on earth
- Exogenic forces – degradation or aggradation (gradation – variation by erosion) – weathering, mass wasting, deposition & erosion
- Endogenic = Diastrophism & volcanism
- Variations = opposing action of exogenic & endogenic
- Geomorphic Process = Physical action + chemical action + changes in configuration
- Geomorphic Agents = Wind, water, ice, waves, curents

Basics:

Watch video lecture on YouTube: Geomorphology - Types & Components of Folds and Faults Geomorphology - Types & Components of Folds and Faults

Find this video at: https://www.youtube.com/video/7zJopKCR9aU?rel=0

What is must?

Gravity & Gradient

Endogenic Processes:

Radioactivity, rotational and tidal friction and primordial heat from the origin of the earth

Diastrophism – move, elevate & build – PVT (Pressure, volume & temperature)

- Orogenic: mountain building - folds
- Epeirogenic: Uplift – continental building
- Earthquake

- Plate tectonics

Volcanism: Movement of magma to earth

Exogenic Forces:

- Gravity, sun & gradient by tectonic forces
- Stress = force per unit area (push & pull – deformation)
- Shear Stress: Breaks rock & angular displacement
- Molecular stress by temperature, crystallization & melting
- 2 main factors are temperature & precipitation

All exogenic process are denudation (uncover)

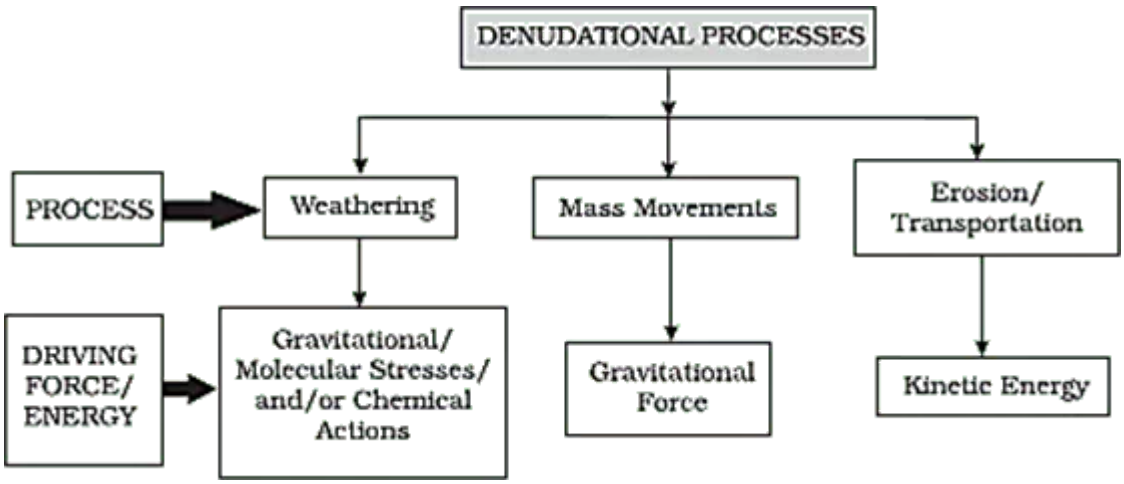

Image of Denudational Processes

KEY: Differences on earth surface though originally related due to crustal evolution continue to exist in some form or other due to differences in type and structure of earth materials, differences in geomorphic processes and rates of operation

Weathering: Mechanical disintegration and chemical decomposition of rocks

- Chemical
- Physical
- Biological: earthworm, rodents – burrow; decaying plants and animals; algal growth; plant roots

Physical Weathering:

forces- gravitation, expansion & water pressure

- Unloading & expansion: vertical -> fractures & horizontal -> exfoliation (unloading)

- Temperature Change & Expansion: rise in temp. -> expansion & fall in temp -> contraction ; differential heating (boulders called tors due to thermal expansion)
- Freezing, Thawing & Frost Wedging: Growth of ice in rocks; rapid freezing cause expansion and high pressure
- Salt Weathering: salt expand due to thermal action, hydration and crystallization; NaCl & gypsum crystals in desert heave up

Chemical Weathering:

- Solution: contents are dissolved with water/acid – nitrate, sulphate/potassium; calcium carbonate & NaCl
- Carbonation: reaction of carbonate & bicarbonate breaks down feldspar
- Hydration: Addition of water, rock expands
- Oxidation & Reduction: Reduction in areas of below water table – stagnant water & waterlogged ground with no oxygen (iron on reduction changes to bluish green)

Benefits of Weathering:

- Formation of soil & regolith
- Prepare for erosion & mass movement
- Increase deposits of minerals
- Enrichment: Mining as economically viable

Weathering & Erosion:

Watch video lecture on YouTube: Weathering & Erosion - 3 Types and 6 Agents Weathering & Erosion - 3 Types and 6 Agents

Find this video at: https://www.youtube.com/video/MuPUtNi8LM0?rel=0

Mass Movement

Transfer of debris down the slope under gravity

Debris may carry with it air, water or ice

Purely by gravity & no geomorphic agent

Forms of movement: Heave, flow & slide

- Slow Movement: Creep (leaning of poles) & solifluction (slow downslope flowing soil mass)
- Rapid Movement: humid areas – earthflow (water saturated clayey soil at low angle), mudflow (no vegetation with heavy rainfall), avalanche (narrow track on steep slopes – faster

than mudflow)

- Landslides: Rapid & perceptible with dry material – discontinuity & steepness in rock, slump (slipping of unit with backward rotation wrt slope)

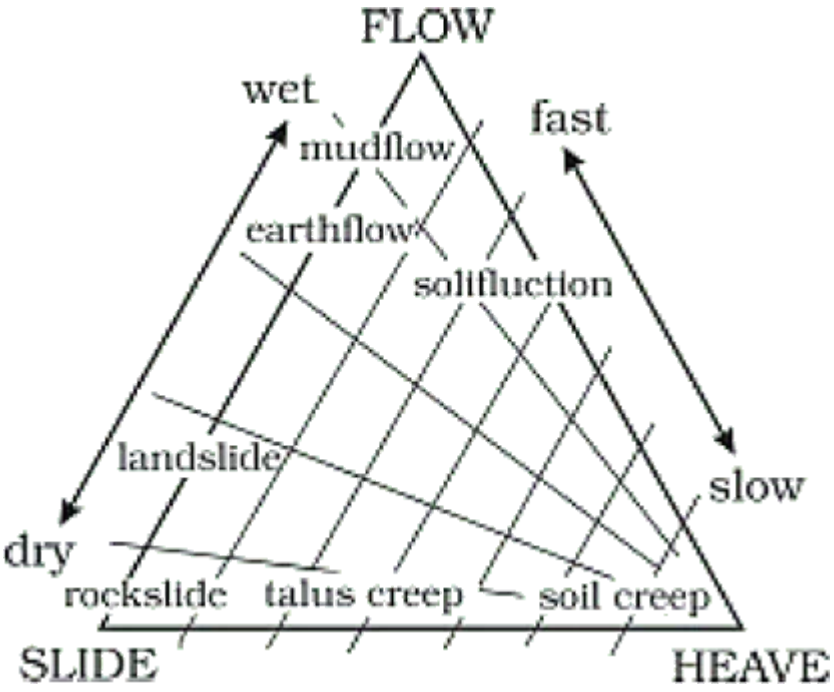

Image of Forms of Movement: Heave, Flow and Slide

Erosion & Deposition: Acquisition and transportation of debris, has continuous changes

Mass Movement:

Watch video lecture on YouTube: Mass Wasting and Landslides - Types, Components, Causes and Prone Areas Mass Wasting and Landslides - Types, Components, Causes and Prone Areas

Find this video at: https://www.youtube.com/video/MpsRJ9LRabg?rel=0

Soil Formation

Pedologist – studies soil

Pedology – science of soil

Soil: dynamic medium- physical, chemical & biological activities

Soil-Forming Factors:

- Parent material: passive factor
- Topography: passive factor
- Climate: moisture & temperature (eluviation & illuviation)- active factor
- Biological activity – humus accumulates, nitrogen fixation - rhizobium
- Time

Soil Formation:

Watch video lecture on YouTube: Forming the Soil - Factors, 4 Methods and 13 Types Forming the Soil - Factors, 4 Methods and 13 Types

Find this video at: https://www.youtube.com/video/x7plQVOgXT8?rel=0

-Manishika