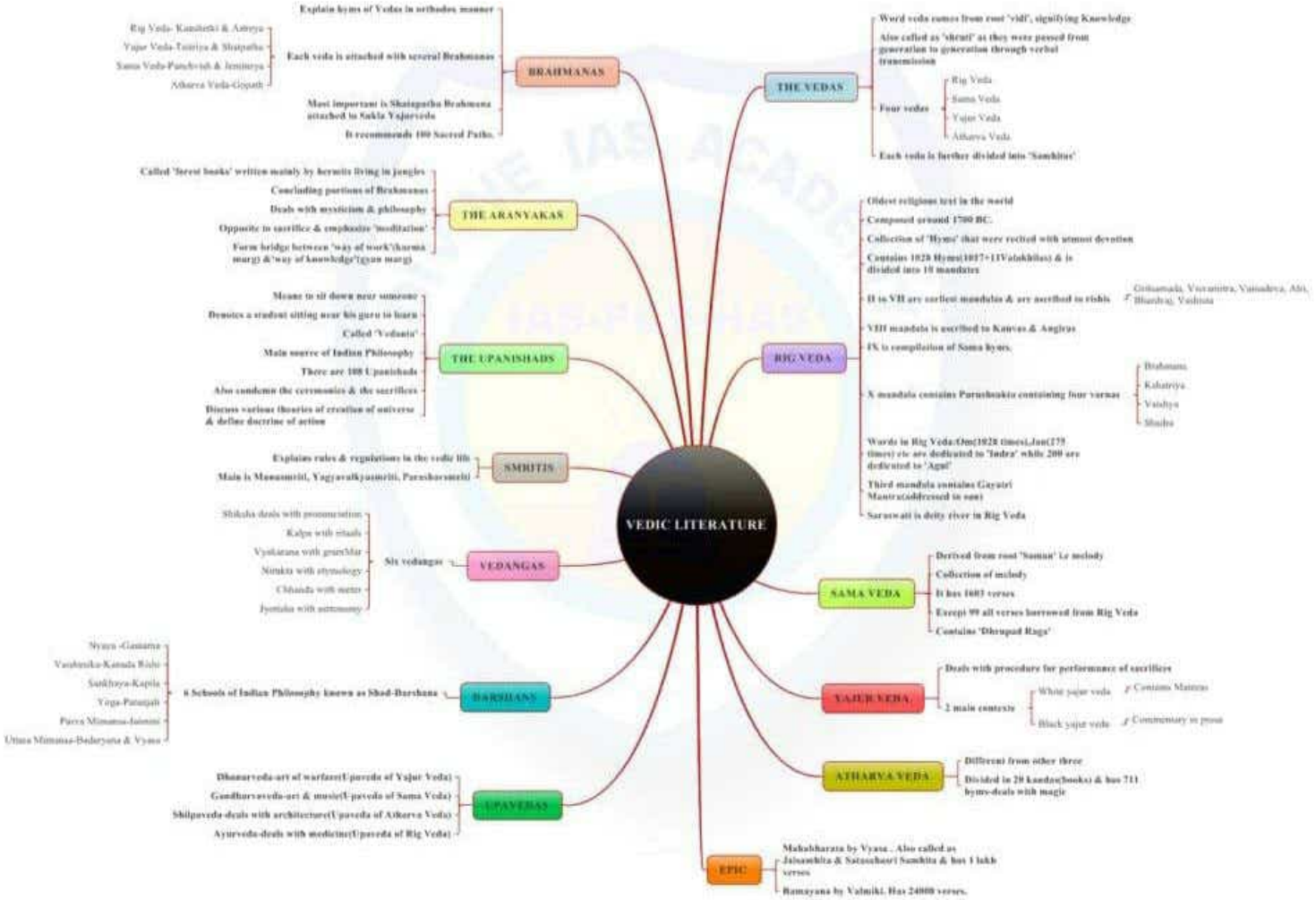
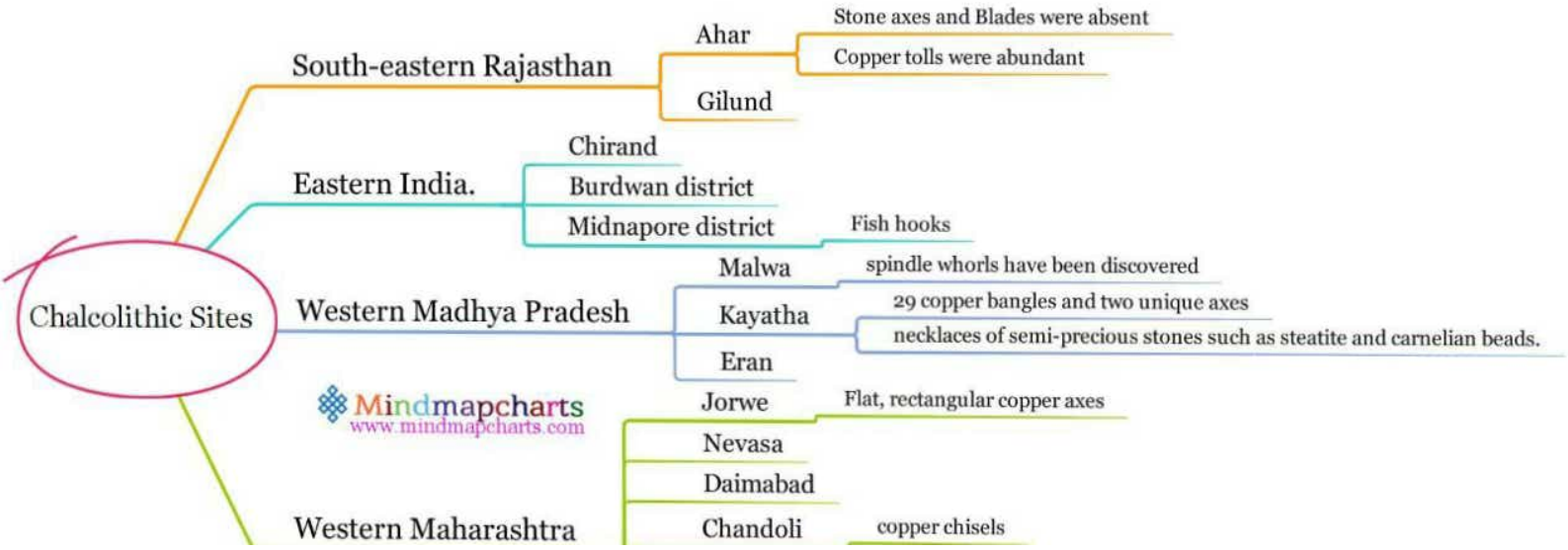
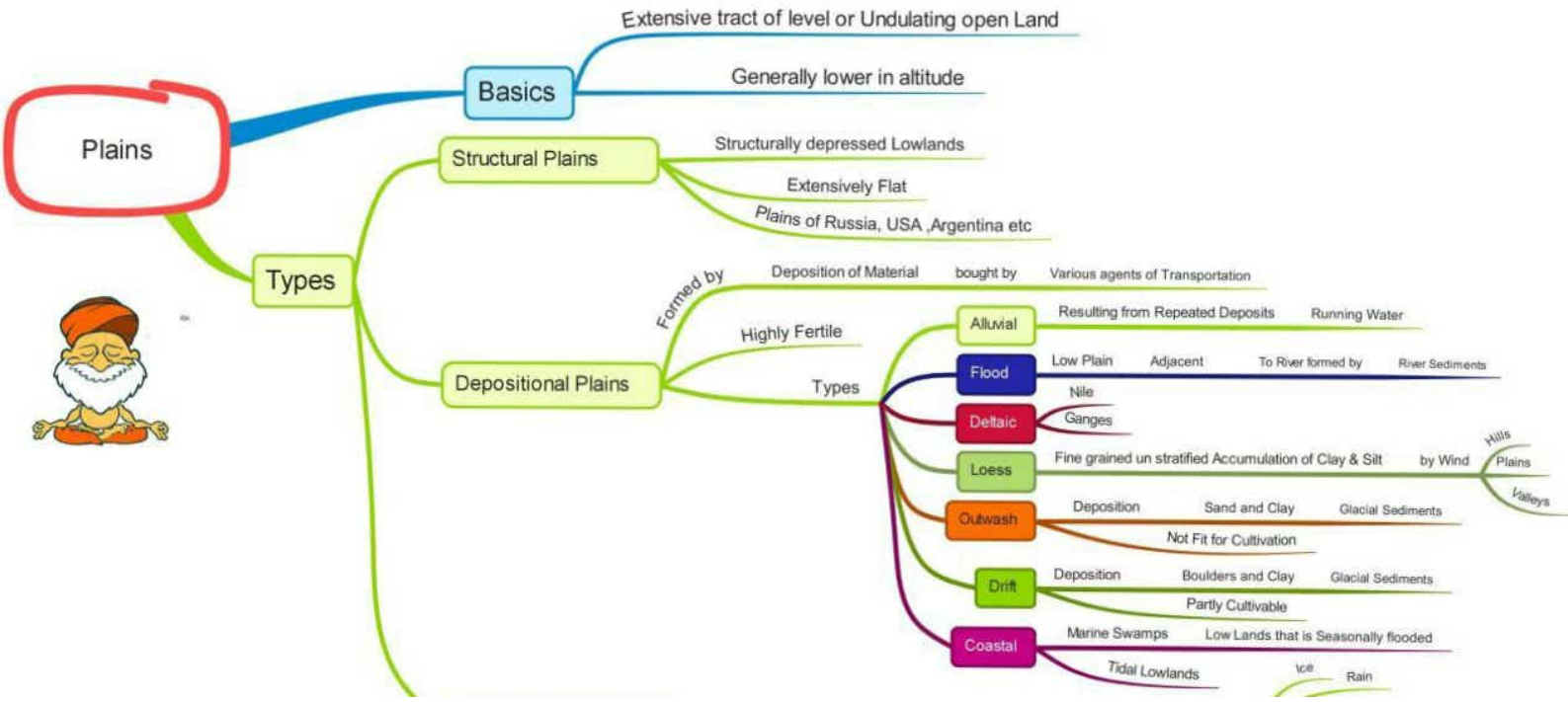

VEDIC LITERATURE
THE VEDAS
Word veda comes from root 'vidl', signifying Knowledge
Also called as 'shruti' as they were passed from generation to generation through verbal transmission
Four vedas
Rig Veda
Sama Veda
Yajur Veda
Atharva Veda
Each veda is further divided into 'Samhitas'
RIG VEDA
Oldest religious text in the world
Composed around 1700 BC.
Collection of 'Hymn' that were recited with utmost devotion
Contains 1028 Hymn(1017+11Valakhilas) & is divided into 10 mandalas
II to VII are earliest mandalas & are ascribed to rishis
Grihsamada, Viswamitra, Vamadeva, Atri, Bharadwaj, Vashista
VIII mandala is ascribed to Kanvas & Angiras
IX is compilation of Soma hymns.
X mandala contains Purushsukta containing four varnas
Brahmans
Kshatriya
Vaishya
Shudra
Words in Rig Veda:Gau(1028 times),Jan(275 times) etc are dedicated to 'Indra' while 200 are dedicated to 'Agni'
Third mandala contains Gayatri Mantra(addressed to sun)
Saraswati is deity river in Rig Veda
SAMA VEDA
Derived from root 'Saman' i.e melody
Collection of melody
It has 1603 verses
Except 99 all verses borrowed from Rig Veda
Contains 'Dhrupad Raga'
YAJUR VEDA
Deals with procedure for performance of sacrifices
2 main contexts
White yajur veda
Contains Mantras
Black yajur veda
Commentary in prose
ATHARVA VEDA
Different from other three
Divided in 20 kanda(books) & has 711 hymns-deals with magic
EPIC
Mahabharata by Vyasa . Also called as Jaisamhita & Satsohasri Samhita & has 1 lakh verses
Ramayana by Valmiki. Has 24000 verses.
UPAVEDAS
Dhanurveda-art of warfare(Upaveda of Yajur Veda)
Gandharvaveda-art & music(Upaveda of Sama Veda)
Shilpaveda-deals with architecture(Upaveda of Atharva Veda)
Ayurveda-deals with medicine(Upaveda of Rig Veda)
DARSHANS
6 Schools of Indian Philosophy known as Shad-Darshana
Nyaya -Gautama
Vaisheshika-Kanada Rishi
Sankhya-Kapila
Yoga-Patanjali
Purva Mimamsa-Jaimini
Uttara Mimamsa-Bederyana & Vyasa
VEDANGAS
Six vedangas
Shiksha deals with pronunciation
Kalpa with rituals
Vyakarana with grammar
Nirukta with etymology
Chhanda with metre
Jyotisha with astronomy
SMRITIS
Explains rules & regulations in the vedic life
Main is Manusmriti, Yagyavalkyasmriti, Parashrosmriti
THE UPANISHADS
Means to sit down near someone
Denotes a student sitting near his guru to learn
Called 'Vedanta'
Main source of Indian Philosophy
There are 108 Upanishads
Also condemn the ceremonies & the sacrifices
Discuss various theories of creation of universe & define doctrine of action
THE ARANYAKAS
Called 'forest books' written mainly by hermits living in jungles
Concluding portions of Brahmanas
Deals with mysticism & philosophy
Opposite to sacrifice & emphasize 'meditation'
Form bridge between 'way of work'(karma marg) &'way of knowledge'(gyan marg)
BRAHMANAS
Explain hymn of Vedas in orthodox manner
Each veda is attached with several Brahmanas
Rig Veda- Kaushitki & Aitreya
Yajur Veda-Taittiya & Shatpatha
Sama Veda-Panchvish & Jemineya
Atharva Veda-Gopath
Most important is Shatapatha Brahmana attached to Sukla Yajurveda
It recommends 100 Sacred Paths.


Chalcolithic Sites
South-eastern Rajasthan
Ahar
Stone axes and Blades were absent
Copper tolls were abundant
Gilund
Eastern India.
Chirand
Burdwan district
Midnapore district
Fish hooks
Western Madhya Pradesh
Malwa
spindle whorls have been discovered
Kayatha
29 copper bangles and two unique axes
necklaces of semi-precious stones such as steatite and carnelian beads.
Eran
Mindmapcharts
www.mindmapcharts.com
Western Maharashtra
Jorwe
Flat, rectangular copper axes
Nevasa
Daimabad
Chandoli
copper chisels

- Climatic Variations
  - Relief features of India has created regional diversities in climatic conditions.
  - The range of temperature increases progressively from coastal areas to the interior parts of the country
  - Regional variations in climate is reflected through change in
    - range of temperature
    - amount of precipitation
    - duration of seasons
  - Duration of rainy season is
    - shortest in Northwest India
    - longest in the South and Northeastern India
- 1. Location
  - Tropic of Cancer passes through the middle of the country
  - Southern parts being closer to the Equator, experience high temperatures throughout the year.
  - Northern parts being close to warm temperate zone, experience low temperatures particularly, in winter.
- 2. Latitudinal extent
  - India lies between 6°N to 37°N latitudes, which is a greater latitudinal extent
  - Temperature decreases latitudinally from equator to poles
- 3. Distance from the Sea
  - Interior regions of the country experiences an extreme or continental type of climate due to the absence of oceanic influence.
  - Climatic conditions are mild in coastal areas due to the influence of surrounding of seas.
- 4. Northern Mountain Ranges
  - Mountain ranges which extend from Kashmir in the Northwest to Arunachal Pradesh in the Northeast, separates India from the rest of Asia.
  - Mountain ranges acts as a barrier by preventing the bitterly cold and dry winds of Central Asia from entering India during winter .
  - They also prevent the rain bearing southwest monsoon winds from crossing the northern frontiers of India.
- 5. Monsoon
  - Winds which change their direction completely are called monsoon winds.
  - The word 'monsoon' is derived from the Arabic word 'Mausim' which means 'season'.
  - Due to its far reaching influence on India's climate, it is termed as 'monsoon type of climate'.
  - Types
    - Southwest Monsoon
      - Southwest monsoon causes wide spread rainfall over the most parts of India.
      - Period: **June to September**
      - Formation
        - Step 1: During summer, the northwestern parts of India become very hot due to high temperatures
        - Step 2: air pressure conditions undergo a reversal in northwestern India and water bodies surrounding the peninsula
        - Step 3: Due to the reversal in air pressures, the Northeast Trade winds are replaced by Southwest monsoon winds
        - Step 4: Southwest monsoon winds blow over warm water bodies and hence they are moisture laden.
    - Northeast Monsoon
      - Northeast monsoon winds are formed by the planetary winds known as Northeast Trades.
      - This is also known as the Retreating Monsoon.
      - Period: **Around September**
      - Formation
        - Step 1: During winter, high pressure is developed over Northwestern part of India
        - Step 2: Results in the blowing of cold dry winds towards southern low pressure areas over water bodies.
        - Result 1: cold and dry winds do not cause rainfall if they doesn't absorb any moisture along it's way.
        - Result 2: winds blowing over the Bay of Bengal collects moisture and brings rain along the Coromandel coast
- 6. Upper Air Circulation
  - Changes in the upper air circulation over Indian landmass is also a cause for sudden formation of monsoons in India
  - Jet streams in the upper air system influences the Indian climate to a great extent.
  - Types of Jet stream
    - 1. Westerly Jet stream
      - Appears during Winter
      - Westerly jet stream blows at a very high speed over the subtropical zone during winter at 8 km above sea level.
      - Jet stream is bifurcated by Himalayan ranges
        - northern branch
          - blows along the northern edge of this mountain ranges
        - southern branch
          - blows eastwards south of the Himalayan ranges
          - this branch of jet stream influences on the winter weather over India.
          - Winter rain and hail storms in northwestern plains are caused by this wind disturbances
    - 2. Easterly Jet stream
      - Easterly jet stream causes sudden onset of monsoons.
      - Formation
        - Step 1: Apparent shift of the sun during summer in northern hemisphere causes reversal in upper air circulation.
        - Step 2: Westerly jet stream is replaced by easterly jet stream due to the heating of the Tibetan plateau.
        - Step 3: Easterly cold jet stream centres around 15°N latitude and blows over the peninsular India.

- 7. Western Disturbances
  - Westerly jet streams causes the inflow of western disturbances from the Mediterranean Sea towards India.
  - Winter weather conditions over Northern Plains and Western Himalayan regions are affected
  - It brings little rain in winter months which is good for wheat crops in northern plains.
- 8. Tropical Cyclones
  - Tropical cyclones develop in the Bay of Bengal.
  - These cyclones influence weather conditions along the eastern coast during October, November and December
- 9. El - Nino
  - EI-Nino causes widespread floods and droughts in tropical regions of the world.
  - El-Nino is a narrow warm current which appears off the coast of Peru in South America
  - El-Nino replaces the cold Peru current which normally flows along this coast.
  - El-Nino increases the surface water temperatures of the sea by 10° C.
  - Warming of tropical Pacific waters affects the global pattern of pressure and wind systems including monsoons in India.
  - Severe drought of 1987 in India was caused by EI-Nino.
- 10. Southern Oscillation
  - Southern oscillation is a pattern of meteorological changes, observed between Indian and Pacific oceans
  - Whenever the surface pressure over Indian ocean is high, Pacific ocean experiences a low and vice-versa.
  - When the pressure is high over the Pacific Ocean and low over Indian Ocean, the Southwest monsoons' in India is weaker and Vice-versa


Plains
Basics
Extensive tract of level or Undulating open Land
Generally lower in altitude
Types
Structural Plains
Structurally depressed Lowlands
Extensively Flat
Plains of Russia, USA ,Argentina etc
Depositional Plains
Formed by
Deposition of Material
bought by
Various agents of Transportation
Highly Fertile
Types
Alluvial
Resulting from Repeated Deposits
Running Water
Flood
Low Plain
Adjacent
To River formed by
River Sediments
Nile
Deltaic
Ganges
Loess
Fine grained un stratified Accumulation of Clay & Silt
by Wind
Hills
Plains
Valleys
Outwash
Deposition
Sand and Clay
Glacial Sediments
Not Fit for Cultivation
Drift
Deposition
Boulders and Clay
Glacial Sediments
Partly Cultivable
Coastal
Marine Swamps
Low Lands that is Seasonally flooded
Tidal Lowlands
Ice
Rain

Weathering is the gradual disintegration of rocks by the combined action of exogenic and endogenic forces of earth

Weathering elements include wind, temperature, rainfall, frost, fog, ice etc...

Weathering contributes significantly to soil formation

Various processes of weathering helps in producing different colours and properties of soil

1) Physical Weathering

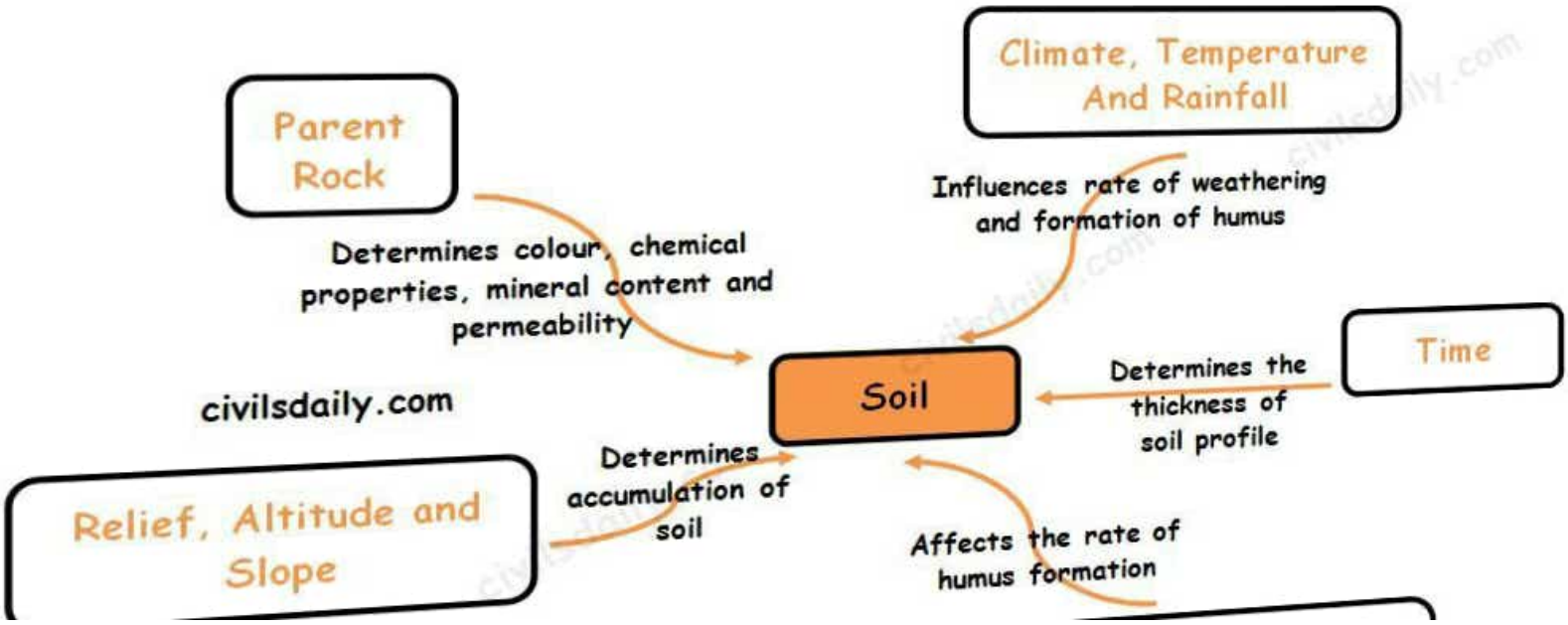
- Disintegration of rocks without any chemical change
  - 1. Block disintegration
    - disintegration of rocks by expansion and contraction of the rocks due to temperature variations
    - high diurnal range of temperature causes successive expansion and contraction of the rocks
  - 2. Exfoliation
    - peeling of rocks due to intense heating of outer layers of the rock
  - 3. Frost Action
    - alternate freezing and melting of water inside the joints of the rocks, splits them into fragments

2) Chemical weathering

- Change in the rocks through formation of new compounds
- Chemical processes include oxidation, hydrolysis, and acid solution
- Aridity is variable over the area affected by the earthquake
  - 1. Oxidation
    - atmospheric oxygen reacts with the rock to produce Oxides
  - 2. Carbonation
    - removal of rocks through carbonic acid
  - 3. Hydration
    - absorption of water by the minerals of the rock
    - volume of the rock increases and the grains lose their shape
  - 4. Solution
    - dissolution of minerals in water

3) Biotic weathering

- 1. Plants
  - Plants contribute to both mechanical weathering and chemical weathering
  - Growth of roots disintegrates the rocks
- 2. Animals
  - Hooves of animals breakes the soil and thus assist soil erosion
  - Burrowing animals like earthworms, rats, rabbits, termites and ants breakdown
  - Earthworms can convert 10 to 15 tonnes of rocks mass into good soil and bring it to surface
- 3. Man
  - Man breaks lot of rocks for construction, agriculture and mining activities


Parent Rock
Determines colour, chemical properties, mineral content and permeability
Climate, Temperature And Rainfall
Influences rate of weathering and formation of humus
Soil
Time
Determines the thickness of soil profile
civilsdaily.com
Relief, Altitude and Slope
Determines accumulation of soil
Affects the rate of humus formation

The Himalayas

Length: 2500 km from the Indus gorge in Jammu and Kashmir(west) to Brahmaputra gorge in Arunachal Pradesh(east).

Breadth: 400 km in the west to 150 km in the east

(a) Himadri or Greater Himalays

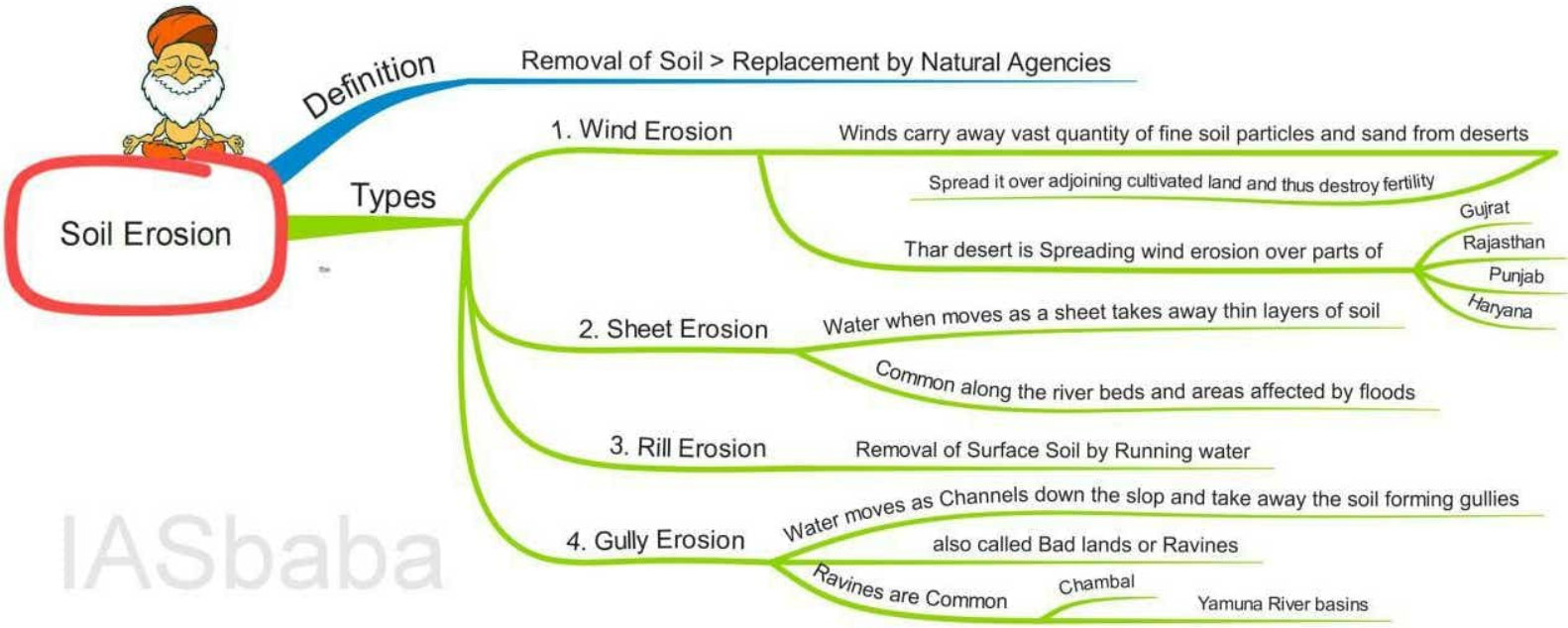
- Extent
  - West: Nanga Parbat peak (8126 m.)
  - East: Namcha Barwa peak (7756 m.)
- Features
  - only range of Himalayas which maintains its continuity from west to east.
  - Himadri range is snow clad with glaciers such as Gangotri and Yamunotri.
- Major peaks
  - Mount Everest
  - Kanchenjunga
  - Makalu
  - Dhaulagiri
  - Annapurna
- Major passes
  - Zoji-la
  - Shipki-la
  - Niti
  - Nathula

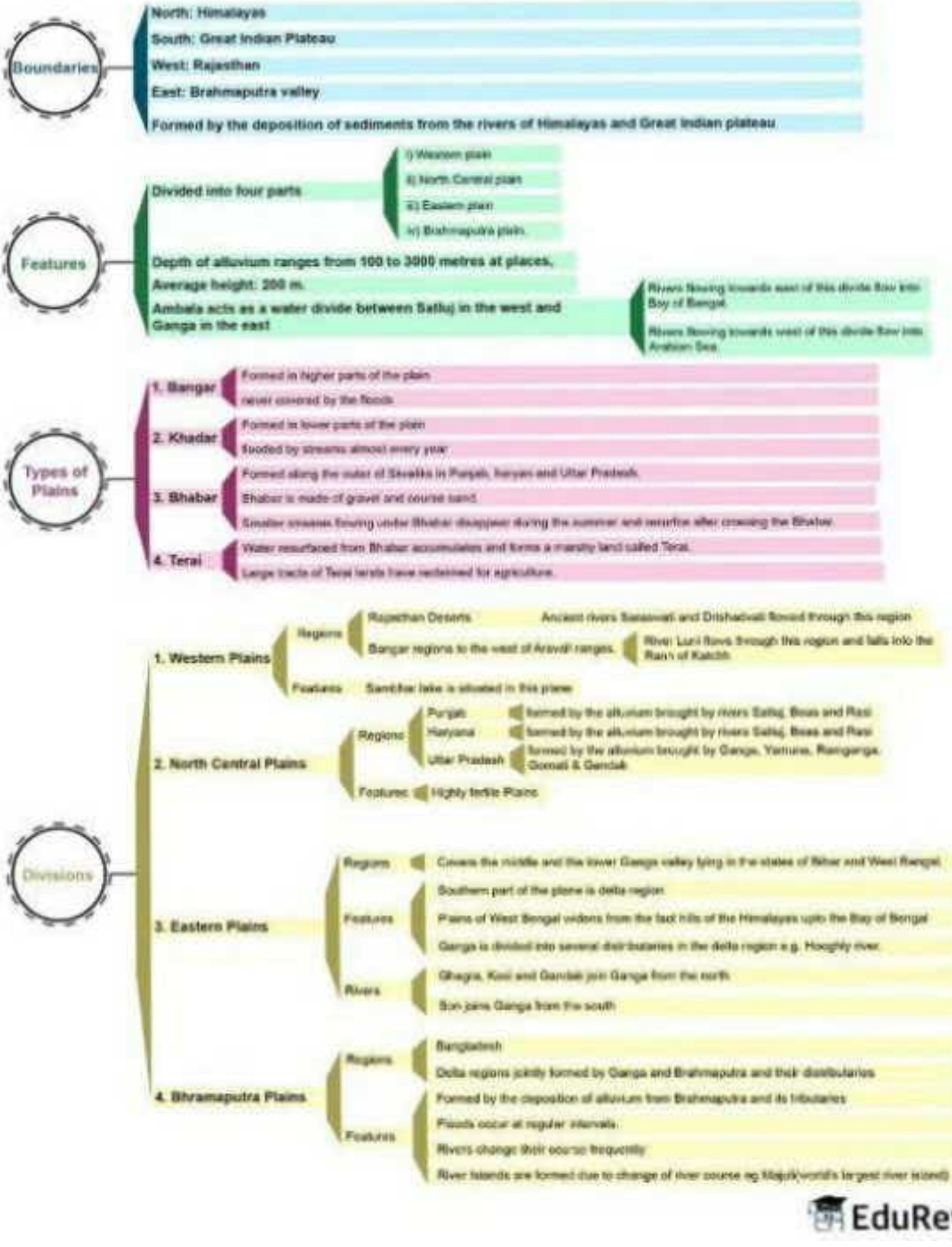
(b) Himachal or Middle Himalays

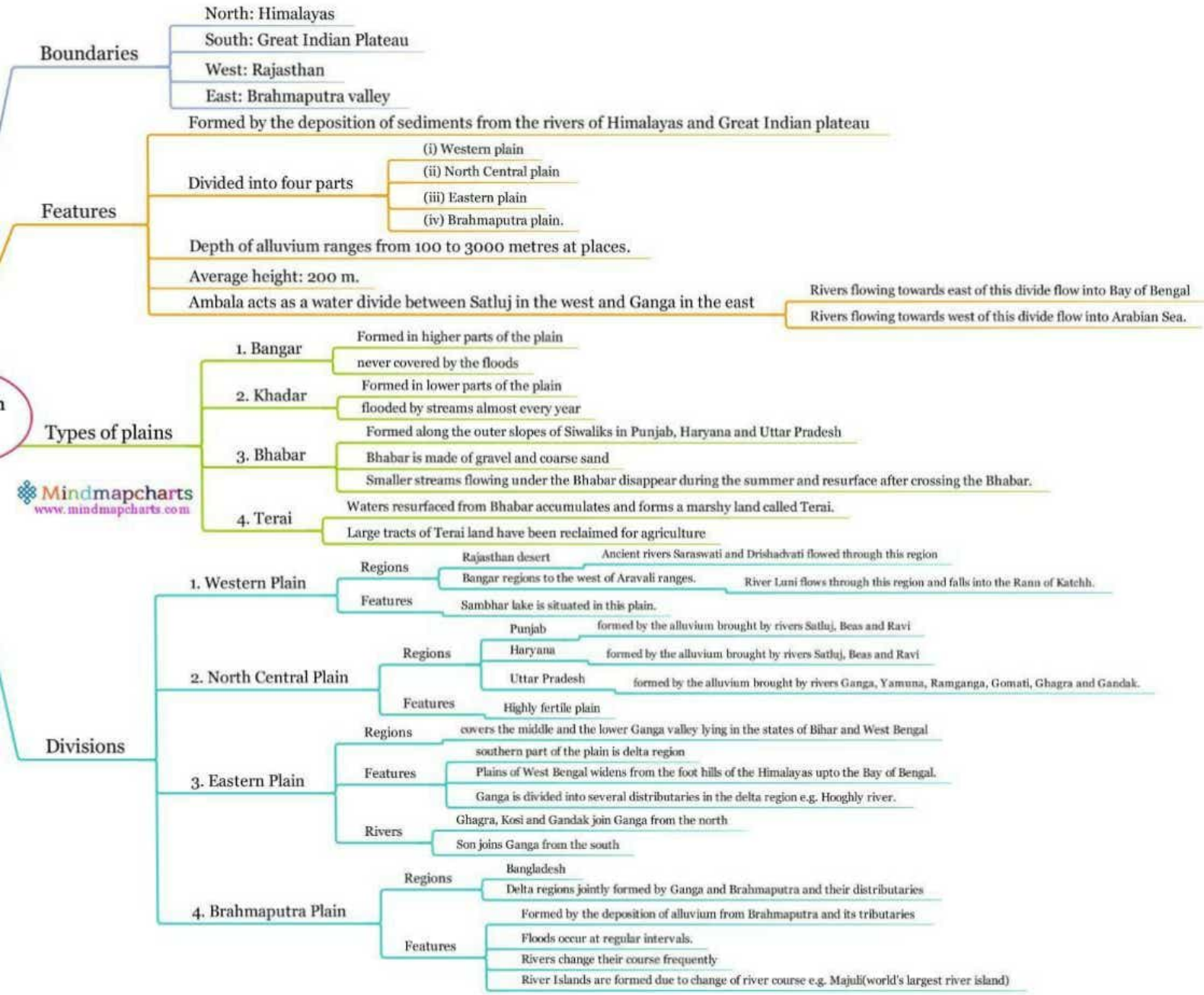
- Average height varies from 1000 m to 4500 m
- Features
  - Range is highly dissected and uneven.
  - mainly consists of metamorphosed rocks.
  - southern part of this range is covered with dense forests.
  - north facing gentle slopes of this range are covered by dense vegetation.
  - Most of the hill stations are located in this range
    - Shimla
    - Nainital
    - Mussoorie
    - Almora
    - Darjeeling
- Local names
  - Pir Panjal in Jammu and Kashmir
  - Dhauladhar in Himachal Pradesh

(c) Siwalik or Outer Himalays

- Himadri and Himachal ranges are formed before the formation of Siwalik range.
- Siwalik range is formed by the deposition of sediments from Himadri and Himachal ranges.
- Features
  - Height of the Siwalik range is about 600 m only.
  - Broad valleys between the Himachal and the Siwalik ranges are known as 'Duns', e.g. Dehradun.


Soil Erosion
Definition
Removal of Soil > Replacement by Natural Agencies
Types
1. Wind Erosion
Winds carry away vast quantity of fine soil particles and sand from deserts
Spread it over adjoining cultivated land and thus destroy fertility
Thar desert is Spreading wind erosion over parts of
Gujrat
Rajasthan
Punjab
Haryana
2. Sheet Erosion
Water when moves as a sheet takes away thin layers of soil
Common along the river beds and areas affected by floods
3. Rill Erosion
Removal of Surface Soil by Running water
4. Gully Erosion
Water moves as Channels down the slop and take away the soil forming gullies
also called Bad lands or Ravines
Ravines are Common
Chambal
Yamuna River basins


Boundaries
North: Himalayas
South: Great Indian Plateau
West: Rajasthan
East: Brahmaputra valley
Formed by the deposition of sediments from the rivers of Himalayas and Great Indian plateau
Features
Divided into four parts
i) Western plain
ii) North Central plain
iii) Eastern plain
iv) Brahmaputra plain
Depth of alluvium ranges from 100 to 3000 metres at places,
Average height: 200 m.
Ambala acts as a water divide between Satluj in the west and Ganga in the east
Rivers flowing towards east of this divide flow into Bay of Bengal.
Rivers flowing towards west of this divide flow into Arabian Sea.
Types of Plains
1. Bangar
Formed in higher parts of the plain
never covered by the floods
2. Khadar
Formed in lower parts of the plain
flooded by streams almost every year
3. Bhabar
Formed along the outer of Shivaliks in Punjab, Haryan and Uttar Pradesh.
Bhabar is made of gravel and course sand.
Smaller streams flowing under Bhabar disappear during the summer and resurface after crossing the Bhabar
4. Terai
Water resurfaced from Bhabar accumulates and forms a marshy land called Terai.
Large tracts of Terai lands have reclaimed for agriculture.
Divisions
1. Western Plains
Regions
Rajasthan Deserts
Ancient rivers Saraswati and Drishadvati flowed through this region
Bangar regions to the west of Aravali ranges.
River Luni flows through this region and falls into the Rann of Kutch
Features
Sambhar lake is situated in this plane
2. North Central Plains
Regions
Punjab
formed by the alluvium brought by rivers Satluj, Beas and Ravi
Haryana
formed by the alluvium brought by rivers Satluj, Beas and Ravi
Uttar Pradesh
formed by the alluvium brought by Ganga, Yamuna, Ramganga, Gomati & Gandak
Features
Highly fertile Plains
3. Eastern Plains
Regions
Covers the middle and the lower Ganga valley lying in the states of Bihar and West Bengal
Features
Southern part of the plane is delta region
Plains of West Bengal widens from the last hills of the Himalayas upto the Bay of Bengal
Ganga is divided into several distributaries in the delta region e.g. Hooghly river
Rivers
Ghagra, Kosi and Gandak join Ganga from the north
Son joins Ganga from the south
4. Bhramaputra Plains
Regions
Bangladesh
Delta regions jointly formed by Ganga and Brahmaputra and their distributaries
Features
Formed by the deposition of alluvium from Brahmaputra and its tributaries
Floods occur at regular intervals.
Rivers change their course frequently
River islands are formed due to change of river course eg Majuli(world's largest river island)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Mindmapcharts
www.mindmapcharts.com
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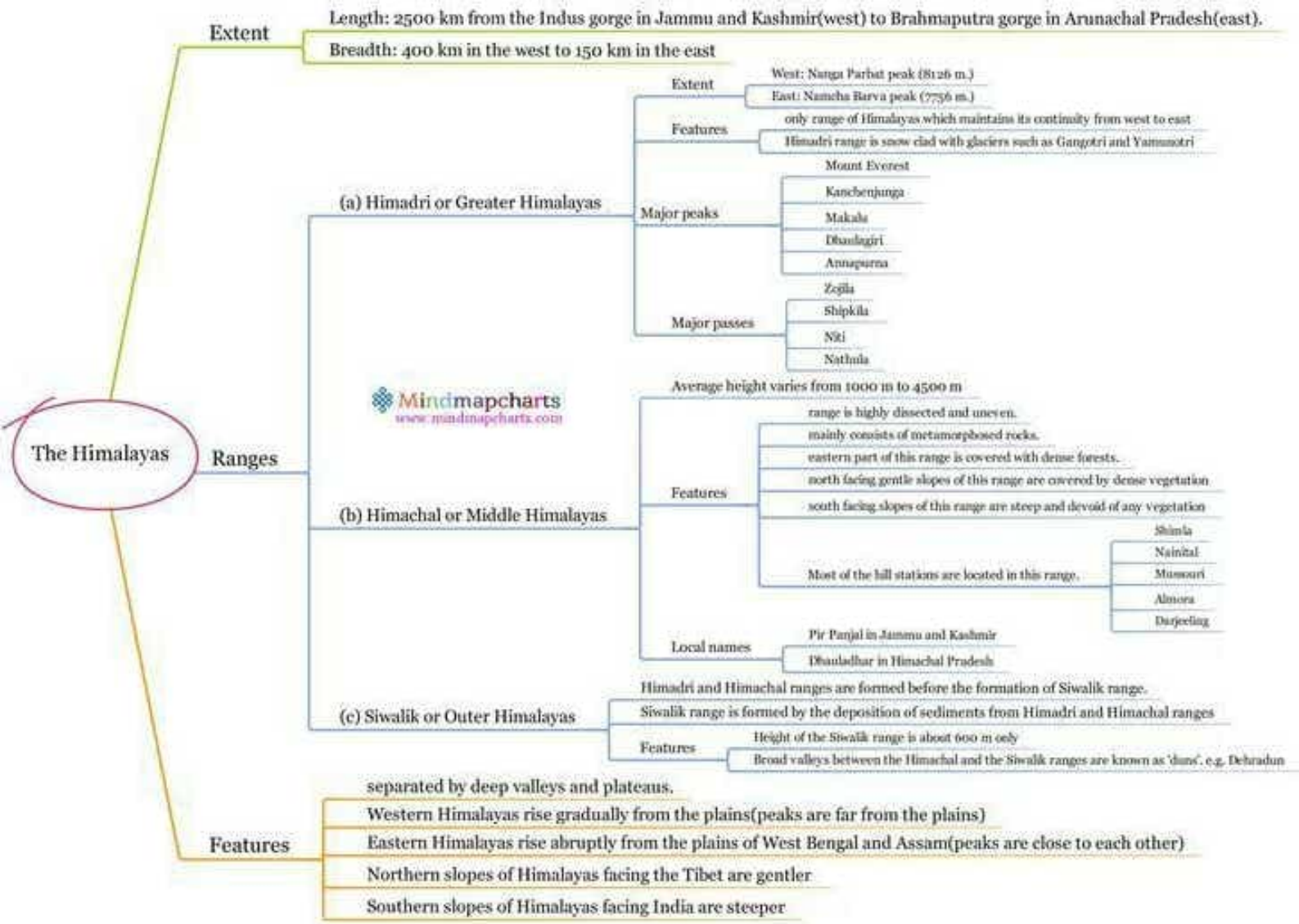
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Broad valleys between the Himachal and the Siwalik ranges are known as 'duns'. e.g. Dehradun
Features
separated by deep valleys and plateaus.
Western Himalayas rise gradually from the plains(peaks are far from the plains)
Eastern Himalayas rise abruptly from the plains of West Bengal and Assam(peaks are close to each other)
Northern slopes of Himalayas facing the Tibet are gentler
Southern slopes of Himalayas facing India are steeper

Volcanism

Basics

- Volcano erupts from the fissure in the Earth's crust through which molten lava and gases flow out
- Volcanic Process
  - i. The less dense crust floats above the denser mantle
  - ii. Mantle contains a weaker zone called Asthenosphere with molten rock material
  - iii. The molten rock material called magma moves towards the crust
  - iv. Magma opens the crust and henceforth flows as lava
  - v. The contesuos flows of lava results in larger volcanic mountains.
- Volcano exerts lava flows, pyroclastic debris, volcanic bombs, ash, dust and gases
- Gases includes CO_2, Nitrogen comunds, sulpher compounds and minor amounts of chlorine, hydrogen and argon.

Types of lavas

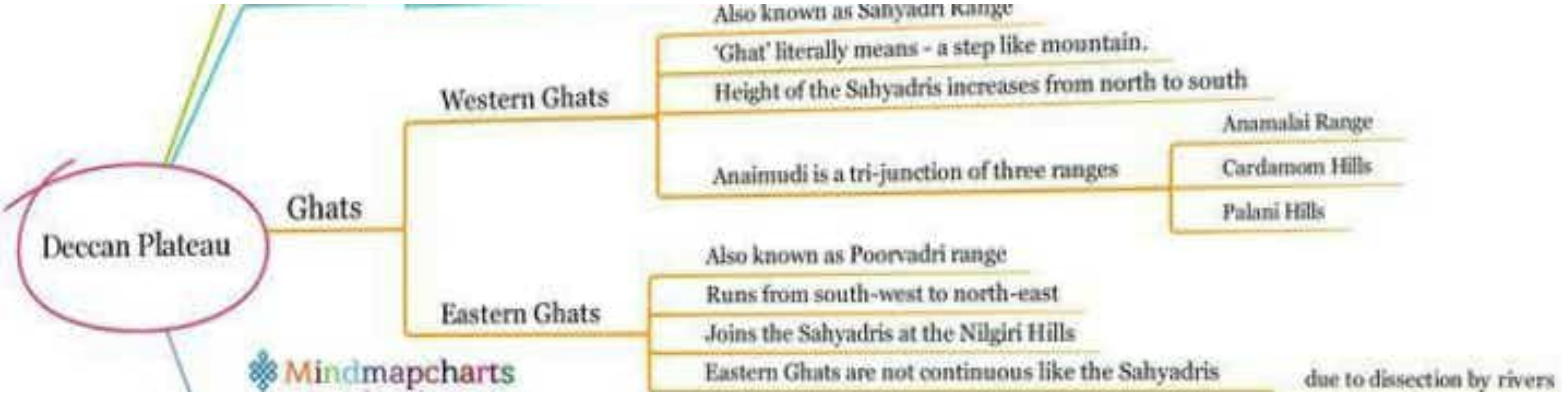
- Acidic Lava
  - are light coloured and rich in lighter elements such as Silica
  - Flow slowly with heavy explosions
  - Form steep cone Volcanoes
- Basic Lava
  - Are brightly coloured and rich in light elements such as silica
  - Flow slowly with heavy explosions
  - Form wider volcanoes with relatively flat dome as shield

Types of Volcanoes

- Based on periodicity of eruption
  - 1. Active Volcano
    - Volcanoes which erupt frequently or erupted in the recent past
    - e.g. Mt. Etna, mt. Saint Helens
  - 2. Dormant Volcano
    - Volcanoes which are known to erupt has the signs of eruption in the future
    - e.g. Kilimanjaro
  - 3. Extinct Volcano
    - Volcannes without any active signs of eruption are called extinct
- Based on form
  - 1. Shield Volcano
    - Largest of all Volcanoes in the world
    - Mostly made up of basaltic lava
    - these volcannes are not steep
    - they are characterised by low explosions
    - Lava moves in the form of a fountain and develops into cinder cone.
  - 2. Composite Volcano
    - Characterised by eruptions of cooler and more viscous lavas than basalt
    - also called as Strato-Volcanoes
    - often results in explosive eruptions
  - 3. Calderas
    - Most explosive types of volcanoes
    - during explosive eruption they collapse on themselves rather than building any tall structure
    - Collapsed depressions are called calderas
  - 4. Flood Basalt Provinces
    - These volcanoes output highly fluid lava that flows for long distances
    - Individual flows may extend for hundreds of km with thickness of around 50 metres.
    - Deccan traps covering most of the Maharashtra plateau is a larger flood basalt province.
  - 5. Mid- Ocean ridge Volcanoes
    - Volcanoes in the oceanic area.

Distribution of Volcanoes

- Most volcanoes are found in three well defined belts
  - 1. Circum Pacific Belt
    - mountains of south America to Alaska
    - Aleutian Islands to Japan
    - Philippines
    - Indonesia
    - New Zealand
  - 2. Mid-World Mountain belt
    - Alps in Europe
    - Asia Minor
    - Himalayan region
  - 3. African Rift Valley belt
- Volcanoes in India
- Volcanoes occurs along coastal mountain ranges, on island and in the mid-oceans
- Most of the active volcanoes are found in the Circum-pacific region and hence called as "Pacific Ring of Fire"
- Most of the volcanoes in the African rift valley are extinct
- Mt. Cameroon is the only active Volcano in central West Africa


Deccan Plateau
Ghats
Western Ghats
Also known as Sahyadri Range
'Ghat' literally means - a step like mountain.
Height of the Sahyadris increases from north to south
Anaimudi is a tri-junction of three ranges
Anamalai Range
Cardamom Hills
Palani Hills
Eastern Ghats
Also known as Poorvadri range
Runs from south-west to north-east
Joins the Sahyadris at the Nilgiri Hills
Eastern Ghats are not continuous like the Sahyadris
due to dissection by rivers
Mindmapcharts

Continental Drift

Facts
- Gradual movement and formation of continents
- Conceived by German Scientist Alfred Wegener
- Indian Sub-Continent has broke away from Gondwanaland during Cretaceous period

Continental Drift Theory
- About 280 million years ago — Super Continent — Pangea
- Huge water body — Surrounding — Pangea — Known as — Panthalasa
- Pangea — broke into — Laurasia (Angaraland) / Gondwanaland — Carboniferous
- Both drifted away — Shallow Sea Emerged — Tethys Sea

Evidences
- jig-Saw-fit of Continents — Coasts of continents could be fit like JigSaw puzzle
- Geological Similarities
- Coal and Vegetable evidences — South America, Africa, India and Australia were together in geological past
- Evidences from PaleoMagnetism — Study of direction of Magnetic fields in magnetic Materials
  - Magnetic minerals in Magma like haematite, Magnetite etc
  - Get aligned with Magnetic pole of the Earth
- Sea floor Spreading
- Glacial Deposits

Size

Landmass of India has
- Area: 3.28 million square km.
- Land boundary: 15,200 km.
- Length of coast line: 7,516.6km.
- Standard Meridian: 82°30'E

India & The World

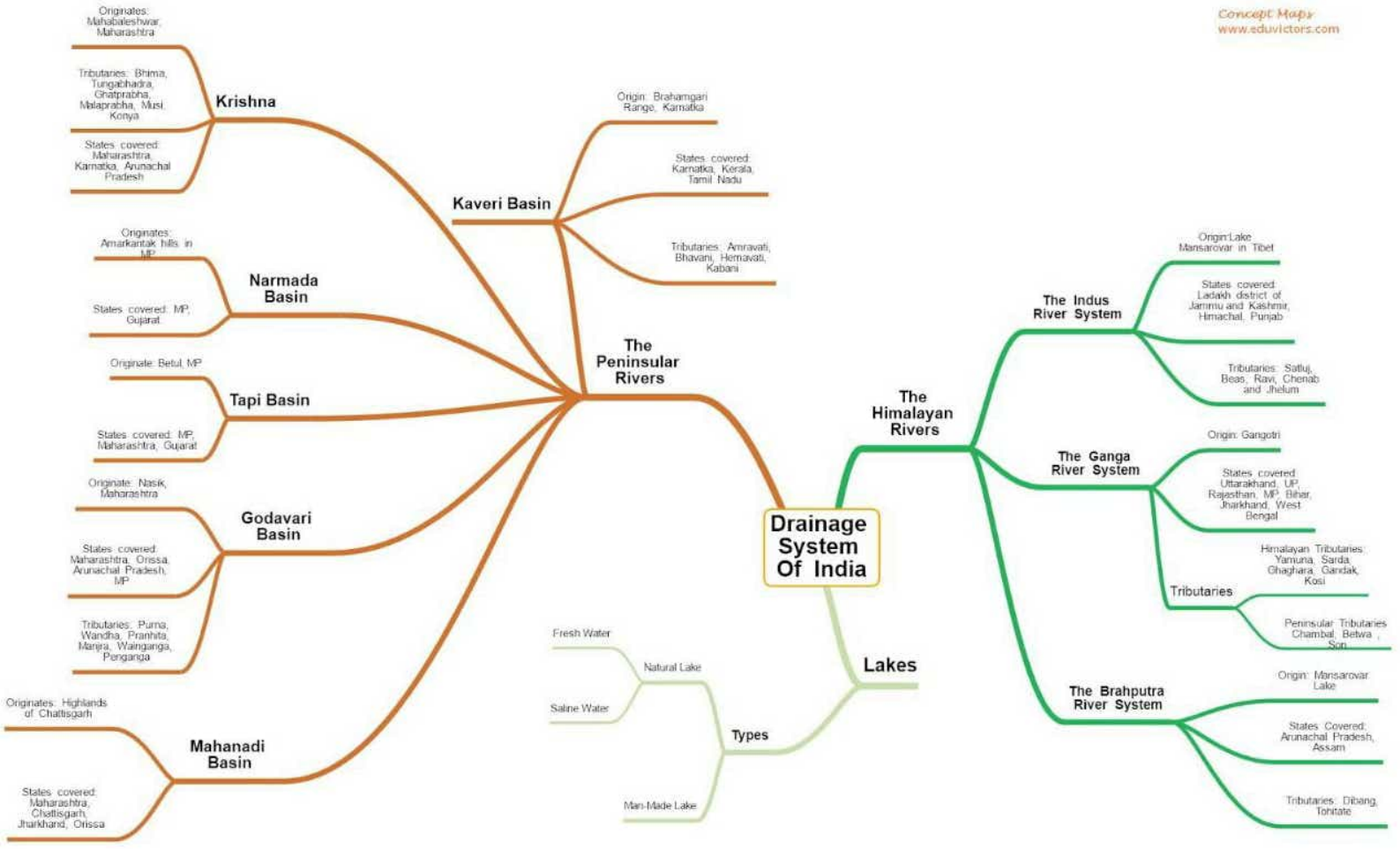
- Central location between the East & the West Asia.
- Trans Indian Ocean routes connect West European countries & East Asian countries.
- Various passes across northern mountains provided passages to ancient travellers.
- Routes have contributed in the exchange of ideas and commodities.

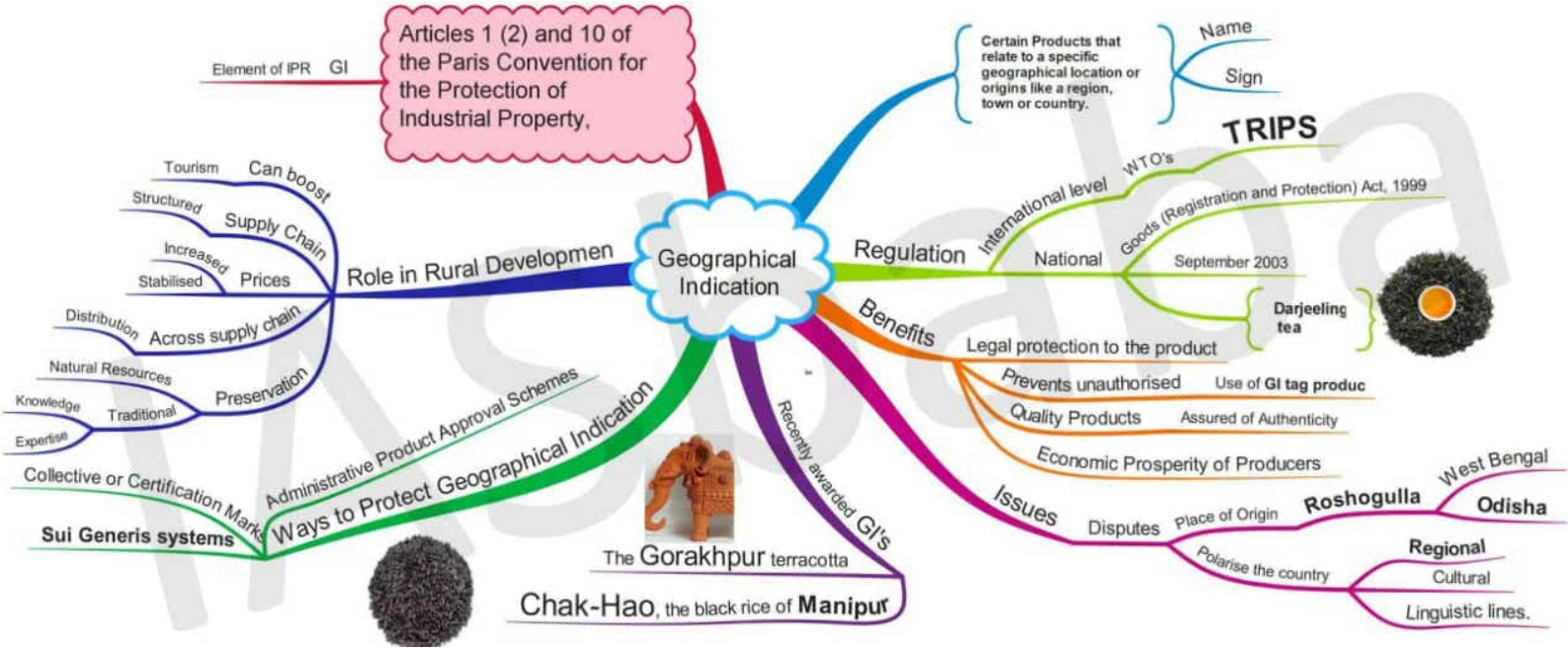
Location

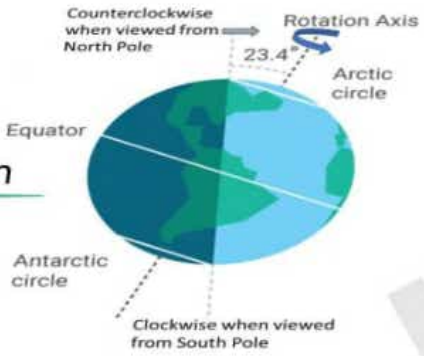
Northern Hemisphere
- Latitudes: 8°4'N and 37°6'N
- Longitudes: 68°7'E and 97°25'E

Inda's Neighbour

- Pakistan and Afghanistan in the north west.
- China (Tibet), Nepal & Bhutan in the north.
- Myanmar and Bangladesh in the east.
- Southern neighbours are two island countries: Sri Lanka and Maldives
- Sri Lanka is separated by the Palk Strait & the Gulf of Mannar.


Concept Maps
www.eduvictors.com
Drainage System Of India
The Himalayan Rivers
The Indus River System
Origin:Lake Mansarovar in Tibet
States covered: Ladakh district of Jammu and Kashmir, Himachal, Punjab
Tributaries: Satluj, Beas, Ravi, Chenab and Jhelum
The Ganga River System
Origin: Gangotri
States covered: Uttarakhand, UP, Rajasthan, MP, Bihar, Jharkhand, West Bengal
Tributaries
Himalayan Tributaries: Yamuna, Sarda, Ghaghara, Gandak, Kosi
Peninsular Tributaries: Chambal, Betwa , Son
The Brahputra River System
Origin: Mansarovar Lake
States Covered: Arunachal Pradesh, Assam
Tributaries: Dibang, Tonitate
The Peninsular Rivers
Kaveri Basin
Origin: Brahamgari Range, Karnatka
States covered: Karnatka, Kerala, Tamil Nadu
Tributaries: Amravati, Bhavani, Hemavati, Kabani
Krishna
Originates: Mahabaleshwar, Maharashtra
Tributaries: Bhima, Tungabhadra, Ghatprabha, Malaprabha, Musi, Koyna
States covered: Maharashtra, Karnatka, Arunachal Pradesh
Narmada Basin
Originates: Amarkantak hills in MP
States covered: MP, Gujarat
Tapi Basin
Originate: Betul, MP
States covered: MP, Maharashtra, Gujarat
Godavari Basin
Originate: Nasik, Maharashtra
States covered: Maharashtra, Orissa, Arunachal Pradesh, MP
Tributaries: Purna, Wandha, Pranhita, Manjra, Wainganga, Penganga
Mahanadi Basin
Originates: Highlands of Chattisgarh
States covered: Maharashtra, Chattisgarh, Jharkhand, Orissa
Lakes
Types
Natural Lake
Fresh Water
Saline Water
Man-Made Lake


Geographical Indication
Articles 1 (2) and 10 of the Paris Convention for the Protection of Industrial Property,
Element of IPR GI
Certain Products that relate to a specific geographical location or origins like a region, town or country.
Name
Sign
Regulation
International level
WTO's
TRIPS
National
Goods (Registration and Protection) Act, 1999
September 2003
Darjeeling tea
Benefits
Legal protection to the product
Prevents unauthorised
Use of GI tag produc
Quality Products
Assured of Authenticity
Economic Prosperity of Producers
Issues
Disputes
Place of Origin
Roshogulla
West Bengal
Odisha
Polarise the country
Regional
Cultural
Linguistic lines.
Recently awarded GI's
The Gorakhpur terracotta
Chak-Hao, the black rice of Manipur
Ways to Protect Geographical Indication
Administrative Product Approval Schemes
Collective or Certification Marks
Sui Generis systems
Role in Rural Developmen
Tourism
Can boost
Structured
Supply Chain
Increased
Stabilised
Prices
Distribution
Across supply chain
Natural Resources
Knowledge
Traditional
Expertise
Preservation



Apparent Rotation

That's why Sun's apparent Motion East to West

e Earth

Movement — On Axis — West to East

Rotation Time — 23 Hours, 56 Minutes, 4.0916 Seconds

Velocity of the Rotation

Velocity

Rotational Velocity
At 60° Latitude =
½ Velocity at Equator

At Equator Maximum

At Poles, Almost Zero

Effects

1) Day and night
- Part of earth facing the sun experiences day
- Part of earth facing away from the sun experiences Night
- The line around the Earth separating the light and dark halves is called "The circle of illumination"

2) Circulations
- Atmospheric circulation
  - Circulation of atmosphere along its layers
  - Coriolis force
- Oceanic circulation
  - Movement of waters in ocean
  - Ocean cycle
    - takes 10,000 years to complete a cycle

Deformation

Continental plate — Crumpled — Pushed upwards — Form Mountains

Involves
- Folding
- Faulting
- Volcanic Activity
- Igneous intrusion
- Metamorphism

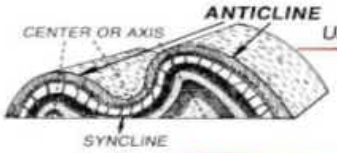
Forms of Mountains

Mountain Ridge — Chain — Mountains / Hills

Forms a continuous Elevated crest for some distance

Mountain Range/barrier/belt/chain/system — Geographic area — Numerous Geologically Related Mountains

Eg.
- Himalaya
- Alps
- Andes



Fold Mountains — Under Compressive Forces

Formed
- Two plates collide under stress
- Imbalance in weight of Overlying rocks
- Variations in Mantle flow
- Intrusion of Magma

Many Active Volcanoes Found

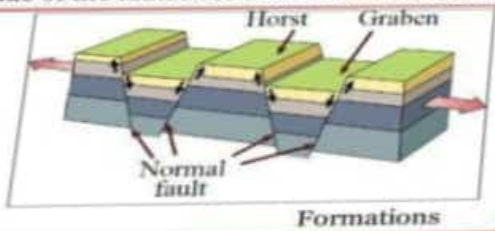
Major Examples
- Himalayas — Asia
- Alps — Europe
- Andes — South America
- Rockies — North America
- Russia — Urals

Block Mountains

Block mountains are formed when the crust rifts or faults

Block mountains are formed under both tension and compressive forces

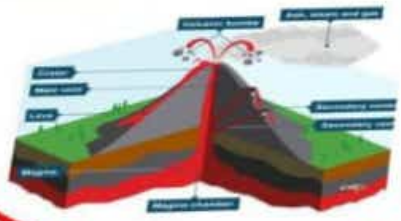
One side of the fault rises relative to the other forming a mountain



Formations
- The uplifted blocks form block mountains or horsts
- The dropped blocks form graben and rift valleys

Major Block mountains
- Rift valley in Africa
- Narmada river Valley in India between the Vindhya and Satpura horsts.
- Rhine valley in Europe
- Vosges mountains in France
- Black forest in Germany

Volcanic Mountains



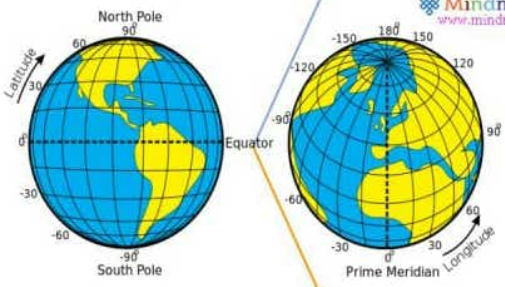
Formed when molten rock or lava erupts, and piles upon the surface

Types
- Shield Volcano
- Strato volcano
- Dome mountains

Major Volcano mountains
- Mount Fuji in Japan
- Mount Pinatubo in the Philippines
- Navajo Mountain in the United States
- Mount Catopaxi in Ecuador

Plateau or Er...

...ed — Degradation



Latitude

- Latitudes are imaginary lines around the Earth parallel to the equator
  - also called as 'parallels'
- Characteristics
  - Latitudes gradually decrease in size from the equator(Great circle) towards the pole
  - Degree of latitude is greater at the pole(111.7 km) than at the equator(110.7 km)
- Measurements
  - Latitude of a place is the angular distance measured either north or south from the equator
  - Distance between the latitudes are constant
  - The length of 60° latitude is half the length of the Equator.
  - The length of 75° latitude is 1/4th of the length of the Equator.
- Important Latitudinal lines
  - Arctic circle - 66 1/2° N
  - Tropic of cancer - 23 1/2° N
  - Equator - 0°
    - largest of all latitudes
    - also called as zero degree latitude
  - Tropic of Capricorn - 23 1/2° S
  - Antarctic circle - 66 1/2° S
- Sample Calculation
  - What is the distance 12 degrees north of equator?
  - Solution: 12 x 111.044(average value of a degree latitude) = 1332.5 km

Longitude

- Longitudes are series of semi-circles passing from north to south direction crossing the equator
  - also known as Meridians
- Characteristics
  - All meridians are equal in length
  - Meridians extend up to 180° from the east and west of Prime meridian
  - All meridians cross the equator at right angle
  - Degree of longitude is greater at the equator(111.3 km) and decreases gradually towards the Pole(0 km)
- Zero degree meridian or Prime Meridian
  - Chosen in 1884
  - Prime meridian divides the sphere into two hemispheres
  - Passes through the Royal Astronomical Observatory at Greenwich, London
  - Greenwich Meridian has been adopted internationally as the Standard meridian.
- Measurements
  - Longitude of a place is the angular distance between a point on any meridian and the prime meridian at Greenwich
  - Longitude of a place is measured either east or west from the Prime meridian
  - Positive longitudes - Longitudes counted west of Prime meridian are called positive longitudes.
  - Negative longitudes - Longitudes counted east of Prime meridian are called negative longitudes.