

India - Relief Features Overview

Explore India's diverse physical geography over six days.

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India's Location and Relief Features

Geographical Extent

Latitude: 8°N to 37°N, Longitude: 68°E to 97°E.

Standard Meridian: 82°30'E, Indian Standard Time set here.

Peninsula surrounded by Arabian Sea, Bay of Bengal, Indian Ocean.

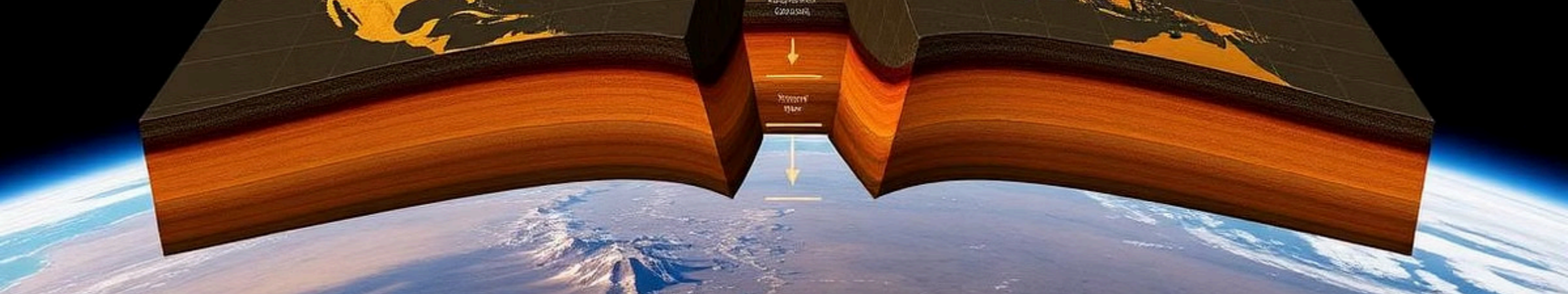
Indira Point, southernmost, submerged in 2004 tsunami.

Relief Features

Mountains, plains, plateaus shape India's geography.

Telangana on Deccan Plateau drained by Godavari, Krishna rivers.





Geological Background

Ancient Origins

India was part of Gondwana land, split 200 million years ago.

Himalayan Formation

Formed by collision of Indian and Eurasian plates.

Relief Divisions

Himalayas, Indo-Gangetic Plains, Peninsular Plateau, Coastal Plains, Thar Desert, Islands.

The Himalayas

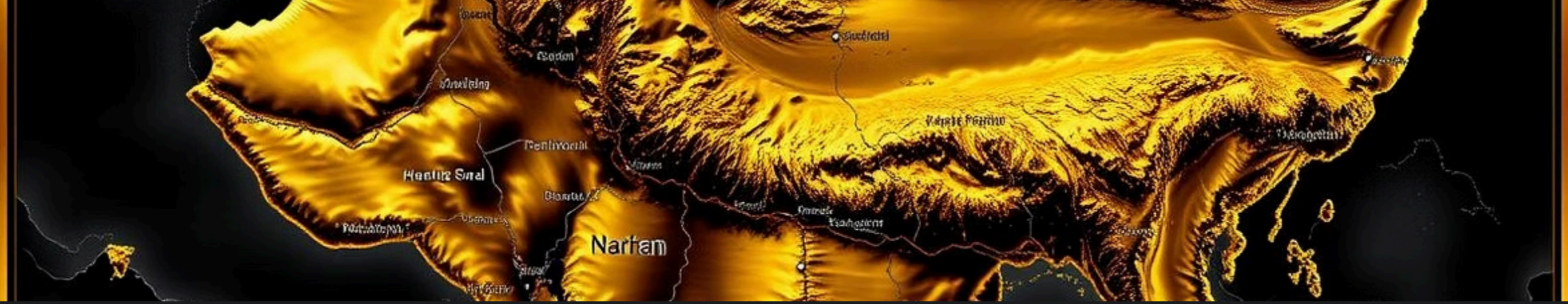
Ranges

- Himadri: 6,100 m average, peaks like Kanchenjunga.
- Himachal: 3,500-4,500 m, includes Pir Panjal.
- Shiwalik: 600-1,500 m, youngest range.
- Purvanchal: Hills in Northeast (Patkai, Naga, Khasi).

Climate Role

Blocks cold winds, enables monsoon, supports perennial rivers.





Indo-Gangetic Plains

Formation

Created by Indus, Ganga, Brahmaputra and tributaries.

Regions

- Western: Indus basin (Punjab, Haryana)
- Central: Ganga plain (Uttar Pradesh, Bihar)
- Eastern: Brahmaputra valley (Assam)

Features & Population

Bhabar, Terai, alluvial plains; densely populated due to fertile soil.

Peninsular Plateau and Thar Desert

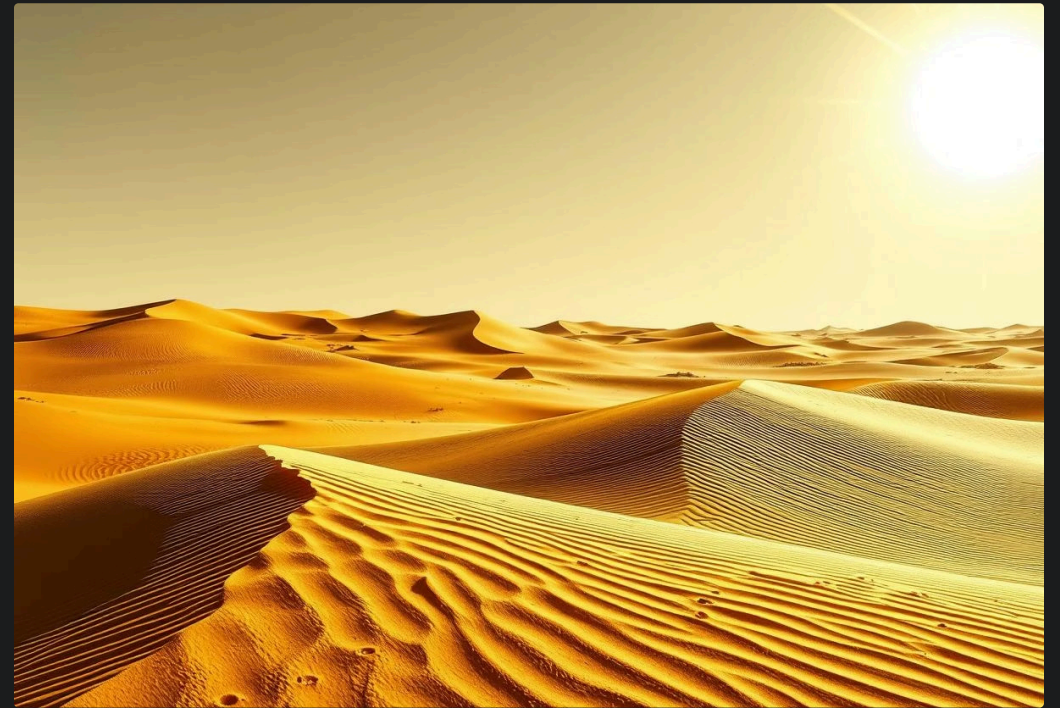
Peninsular Plateau

Surrounded by sea on three sides, mineral-rich crystalline rock.

Includes Malwa, Deccan Plateau, Western and Eastern Ghats.

Thar Desert

Arid region with 100-150 mm rainfall, drained by Luni River.





Coastal Plains and Islands

Western Coastal Plains

Narrow coasts: Konkan, Canara, Malabar.

Eastern Coastal Plains

Wider coasts: Utkal, Circar, Coromandal.

Islands

Andaman & Nicobar (volcanic), Lakshadweep (coral), rich biodiversity.



Conclusion and Next Steps

Key Takeaways

- Himalayas influence monsoon and rivers.
- Indo-Gangetic Plains are fertile and populous.
- Peninsular Plateau is mineral-rich with volcanic soils.
- Coastal Plains and Islands support agriculture and biodiversity.

Next Steps

Start clay/sand model project to visualise relief features.

Additional Key Points for India - Relief Features

Day 1: Introduction and India's Location

- India's strategic location: Facilitates trade via Indian Ocean routes, supports fishing industries (Page 2).
- Diversity from location: Varied climate (tropical to temperate), vegetation, and crops due to latitudinal range (Page 2).
- Time difference: Sun rises two hours earlier in Arunachal Pradesh than Gujarat, unified by IST (Page 14, Q1).
- Tropic of Cancer: Passes through states like Gujarat, Rajasthan, Madhya Pradesh, West Bengal, enhancing climatic diversity (Page 14, Q7).

Day 2: Geological Background

- Ancient plateau: Peninsular Plateau is one of Earth's oldest landmasses, stable for millions of years (Page 4).
- Himalayan evolution: Folding process over millions of years, ongoing tectonic activity shapes peaks (Page 4).
- Sediment basin: Northern Plains formed over 20 million years, filled by rivers from north (Himalayas) and south (Peninsula) (Page 4).
- Gondwana breakup: Resulted in India's drift northeast, influencing its current peninsular shape (Page 4).

Day 3: Himalayas

- Altitudinal variation: Himalayas wider in west (500 km) than east/central (200 km), affecting regional climates (Page 5).
- Vegetation zones: Himalayas host diverse flora, from alpine in Himadri to temperate in Himachal (Page 6, Fig 1.5).
- Economic role: Hill stations (e.g., Shimla, Darjeeling) support tourism; rivers enable hydropower (Page 7).
- Purvanchal's composition: Sedimentary sandstones, distinct from crystalline Himalayan ranges (Page 7).

Day 4: Indo-Gangetic Plains

- Agricultural backbone: Plains produce major crops (rice, wheat) due to fertile alluvial soil, supporting India's food security (Page 9).
- Terai transformation: Once dense forests, now cleared for agriculture post-partition migration (Page 9).
- Doab significance: Fertile land between rivers (e.g., Ganga-Yamuna) boosts intensive farming (Page 8).
- Brahmaputra valley: Unique flood-prone ecosystem, supports tea plantations in Assam (Page 9).

Day 5: Peninsular Plateau and Thar Desert

- Mineral wealth: Chotanagpur Plateau rich in coal, iron, mica, supporting India's industrial growth (Page 10).
- Western Ghats' passes: Act as gateways to coastal plains, facilitating trade and transport (Page 10).
- Eastern Ghats' discontinuity: Rivers create gaps, enabling east-flowing drainage to Bay of Bengal (Page 11).
- Thar Desert's aridity: Internal drainage rivers (e.g., Luni) form temporary lakes, limiting agriculture (Page 12).

Day 6: Coastal Plains and Islands

- Delta ecosystems: Eastern coastal deltas (e.g., Godavari, Krishna) host mangroves, support biodiversity (Page 13).
- Coastal economic hubs: Ports on Western (Mumbai) and Eastern (Chennai) coasts drive trade (Page 13).
- Andaman's volcanic activity: Active volcanoes (e.g., Barren Island) make it geologically dynamic (Page 13).
- Lakshadweep's fragility: Coral reefs vulnerable to climate change, critical for marine conservation (Page 13).