



Physical Environment of India and Its Teaching-Learning Strategy

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1. Introduction

Physical environment of India is an important content area in geography at the secondary level. It mainly comprises topics like location and size of India, major physical features of India, drainage systems in India, monsoon, natural vegetation and their distributions, conservation of natural vegetation and wildlife. In this article, you are able to aware provide us with a brief description on each of these topics. Each topic is followed by suggestive teaching-learning strategy which includes learning objectives, teaching-learning activities and assessment questions. This article expects you to foster geographical skills among students by organising relevant activities pertaining to the different topics under physical environment of India and also help us acquire relevant information so that we can analyse and answer to problems related to the topics.

2. Objectives

- identify the location and size of India on the map of India;
- describe the major physical features of India;
- describe the drainage system in India;
- enumerate the characteristics of monsoon;
- discuss the natural vegetation and their distribution;
- explain why conservation of natural vegetation and wild life is important;
- formulate learning objectives for the selected contents;
- plan suitable learning experiences;
- acquaint yourself with use of learning resources; and
- acquire skills of constructing assessment questions.

3. India: Location and Size

3.1 Overview of the Topic

When it comes to size of our country, you may agree that it is a vast country. If you glance the size of our country on the globe, then you will realize that there are very few countries on the globe which are larger in size than India. Can you find out the countries which are larger in size than India? It is seventh largest country in the world. It has a land boundary of about 15, 200 km and a coastline of about 7,516 km including coastline of mainland and islands of Andaman and Nicobar and Lakshadweep. It occupies geographical area of 32, 87, 263 sq.km. and accounts for about 2.4 % of the total geographical area of the world.

Looking at the globe, you will notice that it lies entirely in the Northern hemisphere. The mainland of India extends between latitudes of 8°4' N to 37° 6' N and 68°7'E to 97°25'E. You will further note that the Tropic of Cancer (23° 30'N) divides the country into almost two equal halves. India has latitudinal and longitudinal extent of about 30°. India is bounded by Greater Himalayas in the northwest, north and north east. The Deccan peninsula is triangular in shape which is flanked by Arabian Sea in the west, Bay of Bengal in the East and Indian Ocean in the South. Can you find out some of the neighboring countries

of our country? The topic on location and size acts as an advance organizer to study critically its relationship with other geographical elements like physical features, drainage system, monsoon climate, natural vegetation, wild life and population of India.

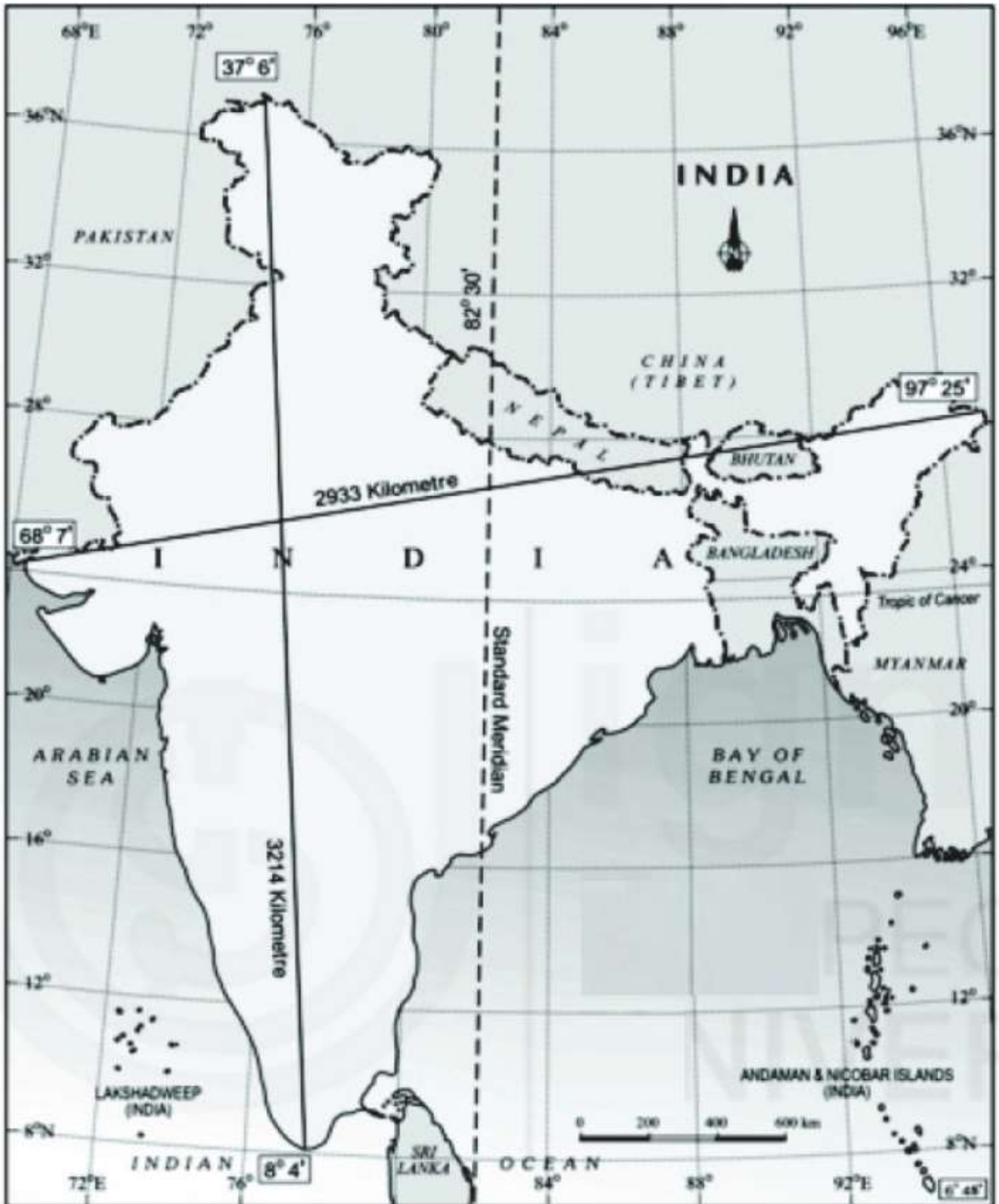


Fig. 1: India: Location and Extent

Source: NCERT (2005)

4. Teaching-Learning Strategy

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

5. Learning Objectives

Through this teaching-learning strategy, students will be able to:

- appreciate the vastness of the country;
- describe the relative and absolute location of our country;
- recall latitudinal and longitudinal extent of the country;
- explain the significance of central location of our country at the head of the Indian Ocean;
- state the length of land boundary and coastline of our country;
- describe the size of our country;
- order the place of our country with respect to area and size of other countries;
- explain the relationship between latitudinal extent and its influence on duration of day and night;
- indicate the reasons for selection of particular longitude as standard meridian for India;
- establish the relationship between longitude of a place and its time; and
- compute time based on given longitudes.

6. Learning Resources

The World (Political Map), Asia; (Political Map), India: (Political and Physical Map), Globe, Atlas, Worksheets, 3D-Models of Island, Bay, Peninsula, Charts showing different lines of latitudes, Chart explaining concept of latitude and longitude. Newspaper clipping on India's relationship with neighbouring countries (issues emerging out of location and size).

7. Teaching-learning Activities India: Physical Environment

The following teaching-learning activities are suggested for this topic.

7.1 Activity: *Acquainting students with basic concepts*

In order to understand the location and size of India students need to have thorough understanding of concepts given below:

(i) Map: It is a conventional representation of the earth surface or part of it drawn on a flat surface, drawn according to a scale. They are of different types- physical maps, political maps, wall maps, atlas maps. For teaching-learning process in classroom situation, we normally use wall maps. In order to teach a unit on India- Location and Size, we need to have 3D physical map of India along with India- Political Map. In Figure 1 there is an example of Political Map of India.



Source: NCERT (2005)

Fig. 2: India: Political Map

(ii) **Globe:** It is a model (miniature form) of the earth. In order to show the exact position of our country on the earth surface we need to use globe. Map may not give us exact visual location and correct shape. On the globe, countries, continents and oceans are shown in correct size.

(iii) **Atlas:** A large number of maps bounded in a volume is called atlas. In order to know the relative and specific location of places, regions, continents and geographical features, we need to use atlas as it provides readymade coordinates of these features in index. Students in the classroom may be provided with several worksheets and atlas to carry out several activities.

(iv) Poles: It is difficult to describe the location on a spherical body like the earth. In order to locate a place on the spherical earth we need to have certain points of reference and lines. Two extreme points on the earth surface are called poles. You may ask your students to notice a needle that is fixed through the globe in a tilted manner, this imaginary needle is called axis. Two points on the globe through which the needle passes are two poles- the North Pole and the South Pole.

Equator: It is an imaginary line on the globe dividing it into two equal halves. The northern half is known as the Northern Hemisphere and the southern half is known as Southern Hemisphere. It is a very important reference point to locate places on the earth. The value of equator is 0 degree

(vi) Latitude: It conveys how far you are from the equator. It ranges from 0 degree at the equator to 90 degrees at the North and South Poles. If the value is close to 0 then the place is near to the equator and if the value is close to 90 that means the place is closer to poles.

(vii) Longitude: In order to know the place, it is important to know something more than the latitude of that place. You may recall that in co-ordinate geometry in order to plot a point we require a set of two co-ordinates 'x' and 'y', where 'x' refers to latitude and 'y' refers to longitude. Longitude conveys how far you are east or west from the given line of reference running from the North Pole to the South Pole.

(viii) Parallels of Latitudes: All parallel circles from the equator up to the poles are called parallels of latitudes. All parallels north of the Equator are called 'north latitudes' and similarly south of the Equator are called 'south latitudes'.

(ix) Major lines of latitude: Besides the equator (0°), the North Pole (90°N) and the South Pole (90°S), there are four important parallels of latitudes-

- (1) Tropic of Cancer (23 ½ °N) in the Northern Hemisphere.
- (2) Tropic of Capricorn (23 ½ °S) in the Southern Hemisphere.
- (3) Arctic Circle (66 ½ °) north of equator.
- (4) Antarctic Circle (66 ½ °) south of equator.

(x) Lines of Longitudes: The lines of references running from pole to pole are called longitudes.

(xi) Standard Meridian: The longitude of 82½ ° is treated as the Standard Meridian of India. The local time at this meridian is taken as the standard time for the whole country. It is known as the Indian Standard Time (IST).

(xii) Prime Meridian: The meridian, passing through Greenwich, where the British Royal Observatory is located, is called the Prime Meridian. Its value is 0° longitude and from it we count 180° eastward as well 180° westward. The Prime Meridian divides the earth into two equal halves, the Eastern Hemisphere and the Western Hemisphere.

Eastern Hemisphere: The area lying between the Prime Meridian and the 180° east Meridian.

Western Hemisphere: The area lying between the Prime Meridian and the 180° west Meridian.

(xiv) Heat Zones of the Earth: The global area bounded by the Tropic of Cancer and the Tropic of Capricorn which receives maximum heat is called Torrid Zone. The area bounded by the Tropic of Cancer and the Arctic circle in the Northern Hemisphere and the Tropic of Capricorn and the Antarctic Circle have moderate temperatures and is called Temperate Zones. The areas falling under this zone experience moderate temperatures. Areas lying between the Arctic Circle and the North Pole in the Northern Hemisphere and the Antarctic Circle and the South Pole in the Southern Hemisphere are called Frigid Zone. These areas are very cold because in this region the Sun does not rise much above the Horizon and its rays are always slanting.

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