

## LANDS HIGH AND LOW

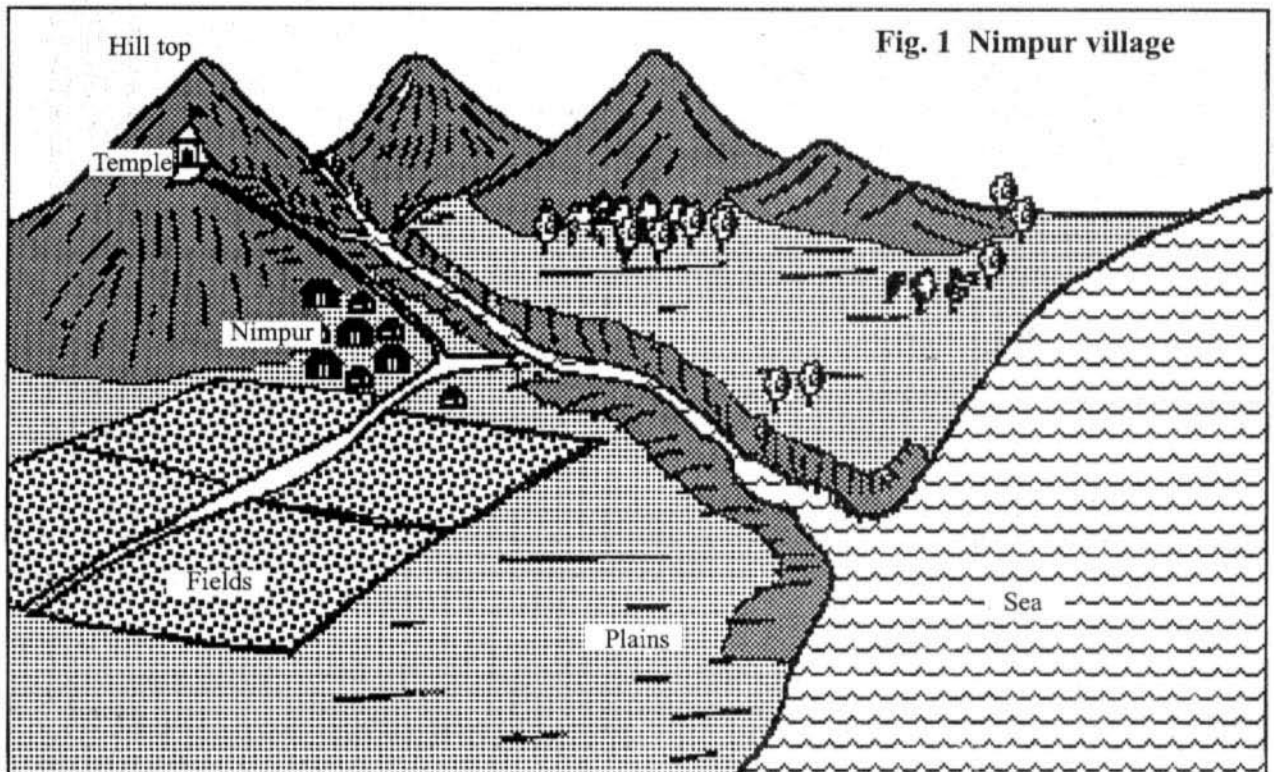
Jodha lives in Nimpur, which is situated near the seashore and at the foot of a hill. One day Jodha and her friends wanted to visit a temple nearby. Their teacher said, "You will have to climb to a height of 50 meters to reach the temple on the hill. If you were to climb another 50 meters high you will reach the top of the hill." Jodha and her friends set out and walked on a zigzag path for nearly half a kilometer to reach the temple. Sometimes the climb was gentle and sometimes, very steep.

They could see the surrounding country, the streams, fields, village, forests, etc. from the temple. Then someone suggested, "Let us climb up to the top of the hill. We will get a better view." Everyone agreed even though they were tired and they set out to climb. Once again they had to walk for about half a kilometer to reach the top of the hill.

Jodha and her friends could see even

farther from the top of the hill. Now they could see the blue sea - stretching for miles. From the hill it looked flat, without ups and downs, unlike the land with its hills and valleys and plain fields. The sea was certainly lower than the rest of the land for they could see the river winding its way to join the sea. Just then one of the friends wondered, "There is so much water in the sea and our village is so near it. It may even flood our village sometime!" They were worried at the thought. They wished they had teacher with them to seek an explanation.

The next day they remembered to ask their teacher whether the sea could flood their village. "No, the sea will never flood our village for our village is 50 meters higher than the sea level. It is true that during storms and high tides the low lying lands get submerged, but our village is situated at a height. So there is no such danger" the teacher answered.



- What was the distance between Nimpur and the top of the hill?
- How many meters high did Jodha and her friends have to climb from their village to reach the top of the hill?

Jodha was keen to know how they could find out the heights of different places. The teacher agreed to show them maps, which showed the heights of different places and also to teach them how to read those maps.

### Sea Level

“Usually we measure all heights from the level of the sea surface” said the teacher as she began the lesson. “If you fill water in a bucket or if you see the water in a pond you will notice that the surface of the water is even, without any ups and downs. In the same way the level of seawater across the entire world, too, is even. This is because all the major seas and oceans are linked and the water of one flows into the other, maintaining a level. Land is higher than the sea level and hence all heights on land are measured from the sea level. In other words, the world over we assume the height of the sea surface to be ‘0’ meter. This is also known as the *sea level*.”

#### • An activity

*Make a model of Nimpur village and the nearby hill as given in figure 2. You can use clay, sand, small plants, etc. to make this model. Also make the sea by filling a depression or a plate with water. Show the village and the temple too.*

- What of figure 1 has been shown in figure 2?

- Look at figure 2 and fill in the blanks in the following sentences:

Nimpur is ..... meters above the sea level.

The temple is ..... meters above the sea level.



The hill top is ..... meters above the sea level.

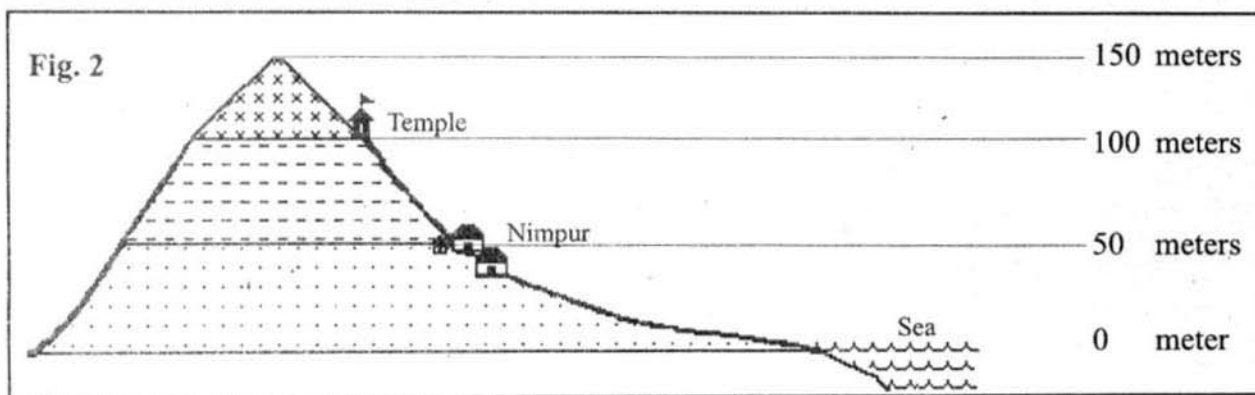
What has been taken as the height of the sea surface?

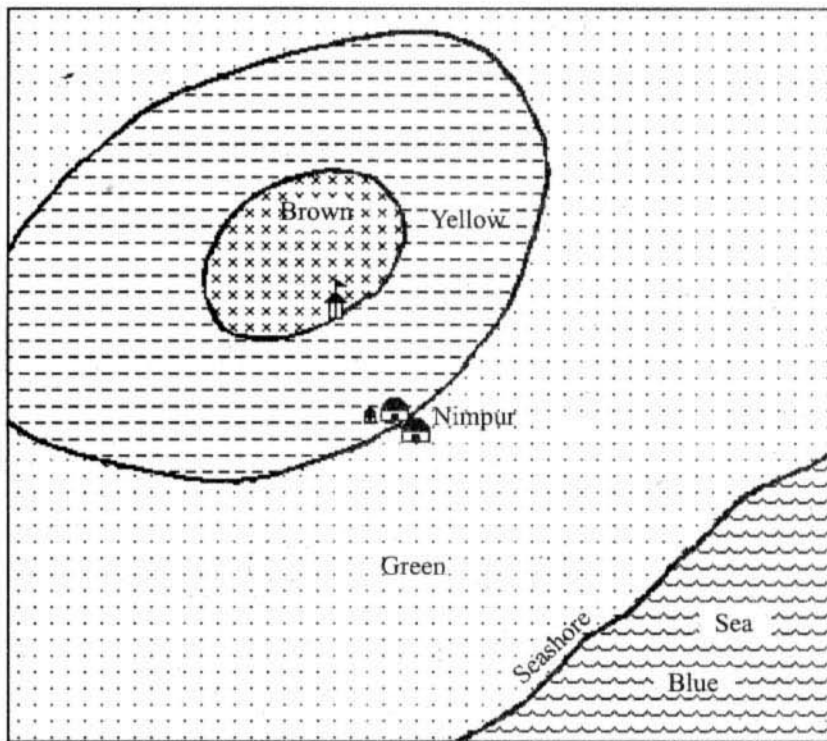
Jodha’s village was near the sea and hence it was possible to tell the height from sea level easily. How can we find out about the heights of places far away from the sea?

Today the heights of all places have been calculated with the help of sophisticated instruments and shown on special kind of maps. If you can learn to read heights on these maps you will have little difficulty in finding out the height of any place.

### Maps Showing Heights

Look at map 1 carefully. This is a map of the area around Nimpur. Land which is upto 50 meters above the sea level is shown with the following symbol . The height of the area between the village and the temple is above 50 meters and less than 100 meters. This height is shown with the symbol . The height of the area between the temple and the hill-top is





Map 1

Map of Nimpur Showing Heights

Index

x x x x x x x x x	100 to 150 meters
- - - - - - - - -	50 to 100 meters
. . . . . . . . .	0 to 50 meters

between 100 and 150 meters and this is shown with the symbol .

- Which place is 0 meter high?
- In which zone will you find a spot 30 meters high?
- In which zone will you find a spot 125 meters high?
- In which zone will you find a spot 75 meters high?

You have read in class 6 that we show all places on the map as if we were viewing the earth from above. Look at the model of Nimpur village you have built from above. Does it look like map 1?

- Do you think that if we were to look at the village of Jodha and the nearby area from the sky, it would look like the map?
- Now colour the different height zones in different colours as suggested in the map. This will help you distinguish the zones easily.

**An Exercise**

Some people think that the portion shown near the lower margin in any map is actually of lower height and the land shown near the top will be higher. This may not necessarily be true. Look at Map 2.

- Is the low land in map 2 situated at the bottom of the map or at the top?
- Which is the highest town?
- Where does the river start? Show the direction of its flow with an arrow.

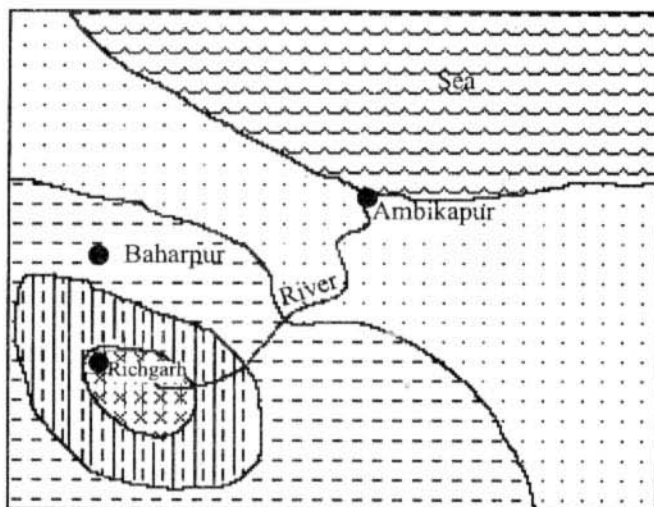
In order to know about the heights in a map one must look at the key or index carefully.

**Colours in a Map**

Hang a wall map of the physical features of India in the class.

- What is the height of the sea surface in this map? By what colour is the sea shown in this map?

## MAP 2



### Index

	500 to 700 meters
	300 to 500 meters
	100 to 300 meters
	0 to 100 meters

- *How many colours are shown in the index? What height does the colour green indicate?*

### Uses of Maps Showing Heights

When reading about a country or a region we often need to know about the mountains, plains and plateaus there. It is possible to recognise these regions in a map showing heights (also called physical maps).

If you were to look at the physical map of Madhya Pradesh, you would see that the Vindhya and Satpura ranges stretch from the east to the west of the state. In between the two ranges are the plains of the Narmada valley. North of the Vindhyas is a vast plateau also

called the Malwa plateau and the Satna-Rewa plateau. There is another plateau south of the Satpuras called the Deccan plateau.

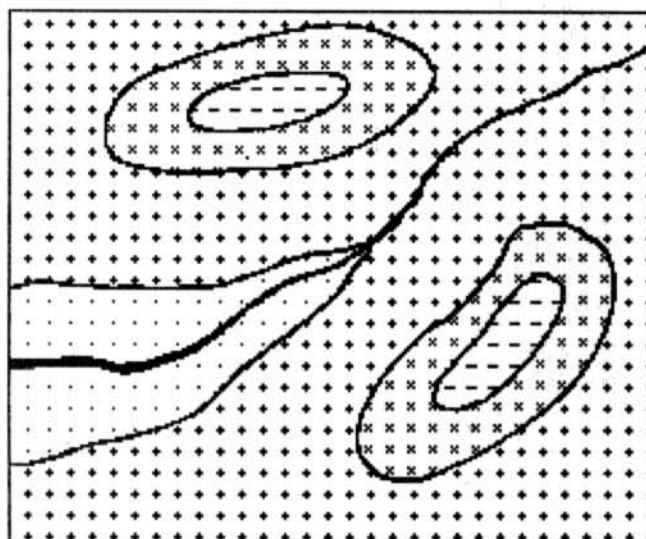
- *Look for all these features in a physical map of Madhya Pradesh. Can you recognise them with the help of colours?*

Maps showing heights are very essential when roads or dams have to be constructed. If we have to lay roads in an undulating region between two places such maps help us in deciding the route to be taken by the road. Similarly, when a dam is planned it is necessary to know how much land will be submerged by the waters of the dam. This again can be found out with the help of maps showing heights.

## Map 3

### Index

40 to 50 meters	
30 to 40 meters	
20 to 30 meters	
0 to 20 meters	





• *Look at map 1 and tell whether Nimpur will be submerged if sea waters were to flood upto 30 meters?*

• *Look at map 3 and answer the following questions.:*

*Mark the direction of flow of the river.*

*The height of the lowest land is between ..... meters and ..... meters.*

*There are two high points in this map. What is their height?*

*Colour the lowest portion in light green, the next higher portion in dark green, still higher portion in yellow and the highest portion in brown.*

## MEAN SEA LEVEL (MSL)

In every railway station, the yellow board showing its name also shows the height of the station. It will be shown as so many meters above the 'msl' or mean sea level. What is this 'mean sea level'? You may know that there are high tides and low tides on the sea and the sea is never still. As a result the level of the sea keeps rising or falling. Which of these heights do we take as the sea level or 0 meter height? In order to solve this problem the level of the sea is carefully measured at frequent intervals and the mean level of the sea is calculated on its basis. This is called 'average sea level'. This calculation for India is done in Chennai. All heights in India are calculated from this height in Chennai.

## EXERCISES

1. Look at the physical map of Madhya Pradesh and find out what height each colour indicates. Then look at the map and answer these questions:
  - i. Near which rivers are regions with the height of 300 meters found?
  - ii. a. The height of regions shown in yellow colour is ..... meters.  
b. Write the name of at least two towns in this region.
  - iii. a. The height of the highest region of Madhya Pradesh is between ..... meters and ..... meters.  
b. Write the names of two places in this region.
2. Which towns are shown at the height between 800 meters and 1200 meters in the map of India? Which is the highest region of India? What colour has been used to show this region?
3. a. Can you recognise the plains of the Ganga in the physical map of India?  
b. What is the height of the plain stretching from Kolkata to Allahabad?