

E-Contents in Geography for Secondary Stage (Class IX) for April May 2016

S.NO.	Area	Content
1	Topic	Drainage/ Dendritic pattern
2	Subject	Geography
3	Topic connected which area of subject?	India – River system , patterns
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area The drainage systems of India are controlled by major relief features such the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
7	Key Words	River, drainage, tributaries, consequent, subsequent, distributaries, meander, flood plain, valley, delta, radial pattern, dendritic pattern, trellis pattern, rectangular pattern.
8	Team of content persons	Dr. Aparna Pandey
9	Subject Coordinator	Dr. Aparna Pandey
10	CIET Coordinator	Dr. Indu Kumar

Drainage System

Indian drainage system consists of a large number of small and big rivers. It is an outcome of the evolutionary process of the major physiographic units and nature and characteristics of precipitation. The major physiographic units are The Himalayas and the peninsular plateau.

Consequent and Subsequent Streams:

The uplands or the mountains through which a river flows describe its catchment area from over which it draws its water. Originally when rivers flow in the direction of the slope or as a consequent of the slope, they are called the consequent streams. As soon as such a river is joined by its tributaries, it is called the subsequent stream. The subsequent stream is controlled by the underlying rock structure as it flows on weak strata lying near the master stream on its either side.

Resource 1

1. Dendritic pattern-

The drainage pattern resembling the branches of a tree is known as Dendritic. The word Dendron means tree in Greek language. The main river is like the trunk of a tree and the tributary streams join it like branches of a tree at a small angle. The examples of Dendritic pattern are the rivers of northern plains of India.

Question:

1. Identify main river and its tributaries in Fig. 1 .
2. Name the rivers flow on the northern plains of India.

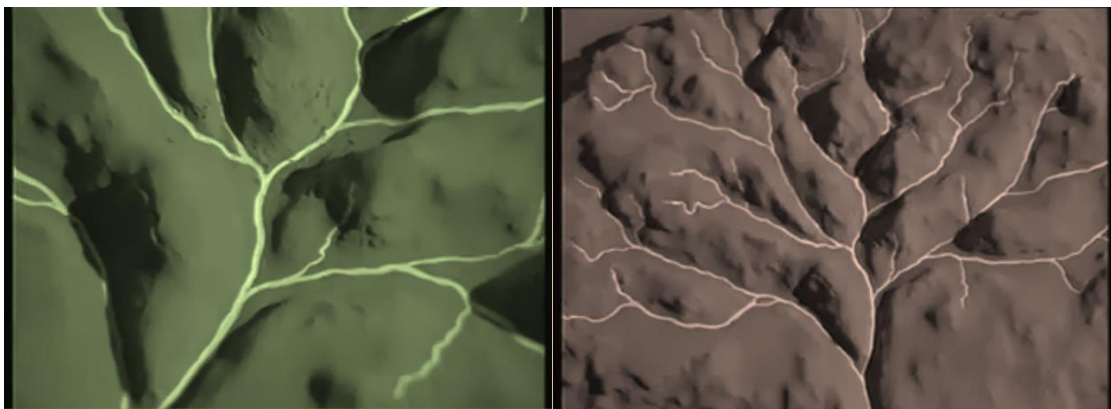


Fig 1- Dendritic pattern

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Resource 2

S.NO.	Area	Content
1	Topic	Drainage/ Trellis pattern
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area. The drainage systems of India are controlled by major relief features such as the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land, underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 2

Trellis pattern-

A trellis pattern develops on a folded structure. The rock strata is not uniform as in the case with the dendritic pattern. There are long straight river valleys with their tributaries joining almost at right angles, making it look like a rectangular arrangement known as trellis pattern. Tributaries of Narmada join it at the right angles.

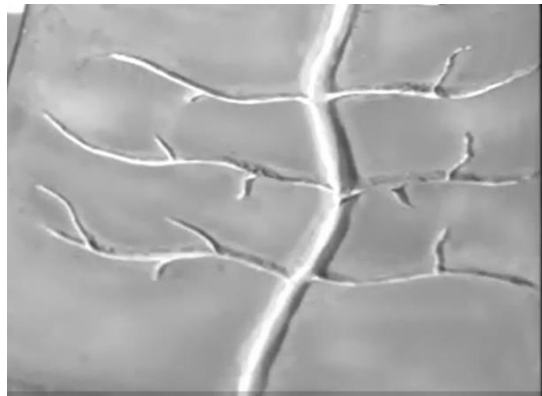


Fig.3 Trellis Pattern

Question

1. Name the tributaries of Narmada.
2. Show direction of flow of Narmada river and its tributaries on the map of India.

Resource 3

S.NO.	Area	Content
1	Topic	Drainage/Radial Pattern
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area The drainage systems of India are controlled by major relief features such the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 3

Radial pattern-

Radial pattern consists of drainage lines radiating from a central part in all directions as on a dome. This type of drainage pattern is found on Chhotanagpur plateau.

Question:

- Locate rivers flow on Chhotanagpur plateau (website- http://bhuvan.nrsc.gov.in/governance/mhrd_ncert/ .

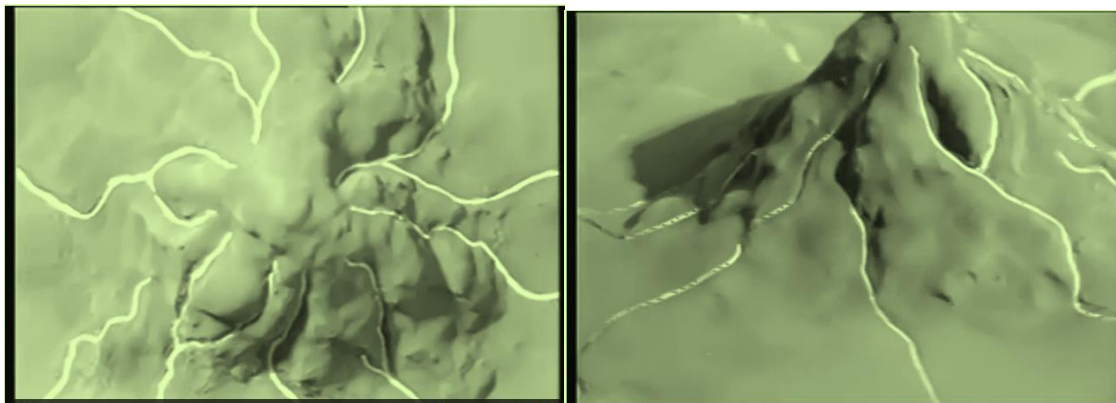


Fig.4 Radial Drainage

Do you Know

A combination of several patterns may be found in the same drainage basin,.

Resource 4

S.NO.	Area	Content
1	Topic	Drainage/ Delta
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area The drainage systems of India are controlled by major relief features such the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 4

Delta

- Delta is a triangular feature with its apex pointing upstream and is marked as fan shaped area of fine alluvium. The Greek letter (Δ) closely resembles the triangular delta of river Nile. The large supply of fine alluvial material and absence of strong tides and currents at the river's mouth are two major factors favouring delta formation. That is we have the biggest delta of the world at the mouth of Ganga-Brahmaputra rivers.



Fig. 4 River Delta

Question:

- Locate Kaveri, Krishan, Godavari, Mahanadi delta on the map of India on http://bhuvan.nrsc.gov.in/governance/mhrd_ncert/
- Identify tributaries of Ganga, Brahmaputra, Narmada, Indus and observe their direction of flow and terrain on satellite imageries on the following http://bhuvan.nrsc.gov.in/governance/mhrd_ncert/

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Resource 5

S.NO.	Area	Content
1	Topic	Drainage/ Breaded stream
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area. The drainage systems of India are controlled by major relief features such as the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land, underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 5

Breaded Stream

The lower river plain is characterised by an excess deposit of the load on the floor of the channel because of the reduction in its carrying capacity of the slow moving stream . The stream which thus gets divided into a network of channels , forming bars of sand and islands , is known as breaded stream.



Fig Breaded stream

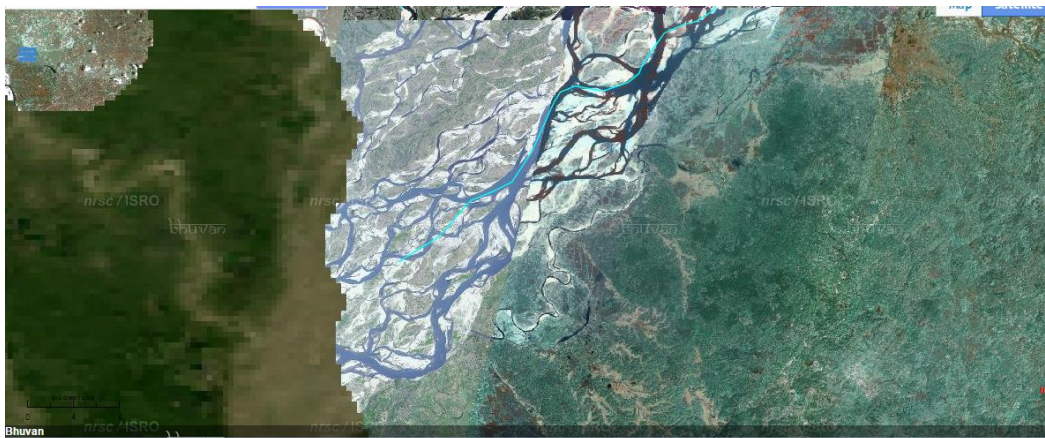


Fig. 8 Breaded stream on satellite image (Source: School Bhuvan-NCERT)

Question :

1. With the help of mental map can you name the river plains of India where breaded streams are found .

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- Locate braided streams of Brahmaputra on the map of India on http://bhuvan.nrsc.gov.in/governance/mhrd_ncert/

Resource 6

S.NO.	Area	Content
1	Topic	Drainage/ Meanders
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area. The drainage systems of India are controlled by major relief features such as the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land, underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 6

Meanders –

To and fro movement of the river channel across its plain results in developing S –shaped meanders, common to all rivers of large size. The word “meander ‘ is derived from a name of a small winding rivers ‘meanderers ‘ in turkey. Meander is not a landform but is only a type of channel pattern. Loop -like channel patterns called meanders develop over flood and delta plains.



Fig. 6 River meanders on Satellite image

Question:

1. Locate meanders of river flowing in your own region on

http://bhuvan.nrsc.gov.in/governance/mhrd_ncert/

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Resource 7

S.NO.	Area	Content
1	Topic	Drainage/ Flood plain
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area The drainage systems of India are controlled by major relief features such the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 7

Flood Plain-

Flood plain is a major landform of a river deposition. Large sized materials are deposited first when stream channel breaks into a gentle slope. Thus normally , fine sized materials like sand , silt and clay are carried by relatively slow moving waters in gentler channels usually found in the plains and deposited over the bed and when the water spill over the banks during flooding above the bed,. A river bed made of river deposits is the active flood plain.

Question:



Fig. 7- Flood Plain

Question:

- In India several rivers flow through peninsular plateau. Why are flood plains not found on Peninsular plateau?

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Resource 8

S.NO.	Area	Content
1	Topic	Drainage/ Perennial /non perennial rivers
2	Subject	Geography
3	Topic connected which area of subject?	India
4	Class/ Level	IX, Secondary stage
5	Objectives	To make students aware about drainage pattern of the river
6	Summary	Drainage describes the river system of an area The drainage systems of India are controlled by major relief features such the Himalayas and the Peninsular plateau. The streams within a drainage basin form certain patterns, depending upon the slope of land underlying rock structure as well as the climatic conditions of the area. Some of the drainage patterns are dendritic, trellis, rectangular, radial, etc.
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Resource 8

Perennial and Non perennial rivers:

Rivers originate in mountainous or hilly tracts, flow through a stretch of low land and finally reach the sea. The volume of water flowing in a river varies according to seasons. The volume of water also varies depending upon the quantity of water derived from other sources like melting of ice and springs. River which maintains flow of water throughout the year are known as Perennial rivers. Whereas Non-perennial rivers do not have flow of water during dry seasons.

Activity :

Identify perennial and non-perennial rivers on the map of India on website

http://bhuvan.nrsc.gov.in/governance/mhrd_ncert/

- Which one of the following river is non-perennial
 - a) Ganga
 - b) Kosi
 - c) Ravi
 - d) Pennar

Submitted by

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DESS