

Investigating the Industries in India

From ESRI India Geo-Inquiry Team

Target Audience: Class 8 Geography Students

Time required: 1 hour and 10 Minutes

Indicator: *Understand the type, location and major players of different industries in India in real maps.*

Learning Outcomes: Students will analyse the industries in India using web-based mapping tools to:

- 1– Examine a map of the agro based industries in India and understand their type.
- 2– Examine a map of the agro based industries in India and understand their location and major players.
- 3– Examine a map of the mineral based industries in India and understand their type.
- 4– Examine a map of the mineral based industries in India and understand their location and major players.

Map URL for Agro based Industry:

<https://storymaps.maps.arcgis.com/apps/View/index.html?appid=00a0fb498d754320a3fb7819dcadfac7>

Map URL for Mineral based Industry:

<https://storymaps.maps.arcgis.com/apps/View/index.html?appid=420cf3b3e361417c98369290d7c55ff6>

Can you better understand the importance of industries in India – their type, location and major players?

Can you better understand the difference between Agro based industries and Mineral based industries in India?

Teacher Notes

This is a **discovery** type of investigation. Students use live web mapping services in an online Geographic Information System (GIS) and use real data about rivers around the world.

Students will investigate four themes of geography in this activity:

1. Difference between Agro based and Mineral based industries
2. Agro based industries and their type, location and major players
3. Mineral based industries and their type, location and major players

Students will use several different scales for their analysis—regional and local.

Requirements

1. Laptop or tablet computer, a web browser, and access to the Internet.
2. Ideally, each student works on his or her own computer with a web browser.
3. Alternatively, students could work in teams of two.
4. Another alternative is for the instructor to use 1 computer with a projector in front of the classroom to engage students in questions and dialogue as the lesson is being taught.

Student
name

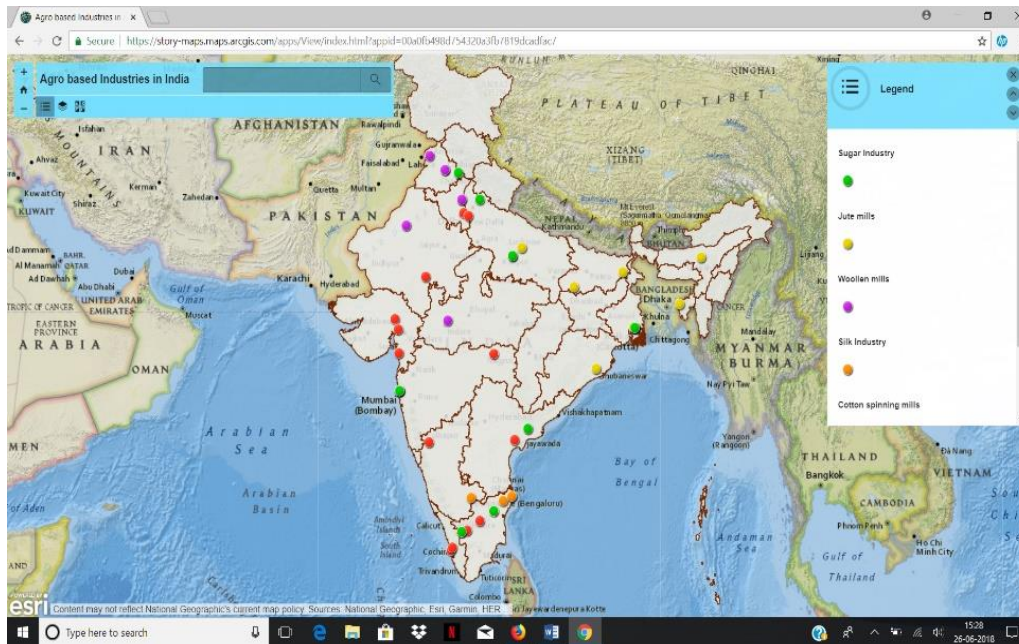
Class

Students have 2 class periods to complete the following investigation.

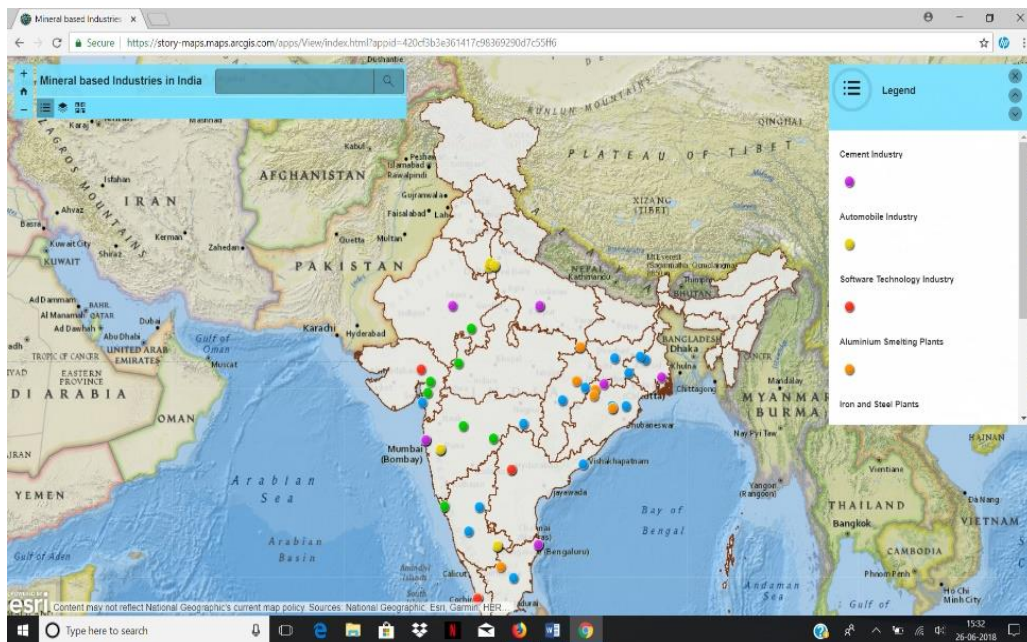
The investigation is ideally to be completed individually.

Open the Map

Open a web browser. [Click here to open map](#). The map you will open is a world map entitled “Agro based Industries in India”, should look similar to the following:




Open a web browser. [Click here to open map](#). The map you will open is a world map entitled “Mineral based Industries in India”, should look similar to the following:



Bookmarks

You will use this live web map that is created with a Geographic Information System (GIS). A GIS provides an excellent way to explore the world and to learn geography at the same time. This map is served via a web based GIS called ArcGIS Online.

Use your mouse to move the map by clicking on the map and moving the mouse. Zoom in and out on the map using the slider bar on the left side of the map. You can also zoom in by pressing the Shift key while dragging a box across the map with the mouse, and letting go with the mouse. Use the Bookmarks to zoom to the locations identified there, as follows:

	
<p>When you are done interacting with the map, use the home icon on top left to resume back to the map of India.</p>	

Introduction

You have seen pictures of the industries in India or perhaps have visited one. You may even live near one. Industry is the production of goods or related services within an economy. The major source of revenue of a group or company is the indicator of its relevant industry. When a large group has multiple sources of revenue generation, it is considered to be working in different industries.

On the basis of source of raw materials used, industries are classified as:

1. **Agro based Industries** : The industries based on agriculture raw material are termed as agro based industries. It includes industries like sugar, jute, woollen etc.
2. **Mineral based Industries** : The industries that use metals and minerals as raw material are termed as mineral based industries. It includes industries like iron and steel, cement, aluminium etc.

Because industries are located in specific areas, and because they affect their environments and are in turn affected by their environments, they are geographic phenomena. And because of this, they can be studied through the use of web maps in a Geographic Information Systems (GIS) framework.

Let's start your investigation by examining industries in India.

Questions

1. After analysing both the maps, can you find the difference between agro based and mineral based industries in India?

2. Find the states in which silk industry is located.
Hint: Open the map of Agro based Industries in India. Go to “Layers” icon present on top left bar. Now on right, pop up will be displayed. Unmark all the layers except Silk Industry. You can click on the state to get its name.

3. Indicate the place where the following companies are found.

	Companies	Location	
	Rana Sugars Limited		
	NIIT Technologies		
	Surat Textile Mills Limited		

-
-
- | | |
|---|--|
| <p>4. State the names of major woollen mills in India.
Hint: Open the map of Agro based Industries in India. Go to “Layers” icon present on top left bar. Now on right, pop up will be displayed. Unmark all the layers except Woollen Industry. You can click on purple coloured icon present on the map to get the names of woollen mills.</p> | |
|---|--|
-
-
-

- | | |
|--|--|
| <p>5. On the map of agro based industries in India, mention the jute mills present in Kolkata, West Bengal.</p> | |
|--|--|
-
-
-

- | | |
|---|--|
| <p>6. Mention all the cement industries with their place and major company in India.</p> | |
|---|--|

Place	Major Player
1	
2	
3	

7. Name the state in which maximum automobile industry is present.	
--	--

8. Mention all the mineral based industries present in Odisha by analysing the map.	
---	--

9. State all the industries present in Mumbai.	
--	--

10. On the map of agro based industries in India, name the states in which Sugar Industry is present in India.

Answer Key. Answers in blue.

1. After analysing both the maps, can you find the difference between agro based and mineral based industries in India?

Agro based Industries : The industries based on agriculture raw material are termed as agro based industries. It includes industries like sugar, jute, woollen etc.

Mineral based Industries : The industries that use metals and minerals as raw material are termed as mineral based industries. It includes industries like iron and steel, cement, aluminium etc.

2. Find the states in which silk industry is located.

Silk industry is present in West Bengal, Maharashtra, Karnataka, Tamil Nadu.

3. Indicate the place where following companies are found.

Rana Sugars Limited – Chandigarh, Punjab

NIIT Technologies - Noida, Uttar Pradesh

Surat Textile Mills Limited – Surat, Gujarat

4. State the names of major woollen mills in India.

The states in which woollen mills are present are Maharashtra, Madhya Pradesh, Rajasthan, Haryana, Punjab.

5. On the map of agro based industries in India, mention the jute mills present in Kolkata, West Bengal.

Jute mills present in Kolkata, West Bengal are Agarpara Jute Mills Ltd, Alliance Mills Pvt Ltd, Ambica Multifibers Ltd, The Angus Co Ltd, Anglo India Jute Ltd.

6. Mention all the cement industries with their place and major company in India.

Major cement industries in India are:

Ajmer, Rajasthan: Shree Cements

Kanpur, Uttar Pradesh: JK Cement

Kolkata, West Bengal: Birla Corp

Rajgangpur, Odisha: OCL India

Mumbai, Maharashtra: UltraTech Cement, Ambuja Cements, ACC, Binani Cement.

7. Name the state in which maximum automobile industry is present.

Maximum automobile industries are present in Maharashtra.

8. Mention all the mineral based industries present in Odisha by analysing the map.

Mineral based industries present in Odisha are Cement Industry, Aluminium Smelting Plants, Iron and Steel Plants.

9. State all the industries present in Mumbai.

The industries present in Mumbai are fertilizer, software technology, automobile, cement, cotton, silk, woollen and sugar industries.

10. On the map of agro based industries in India, name the states in which Sugar Industry is present in India.

The states in which sugar industry is present are Punjab, Uttar Pradesh, Maharashtra, West Bengal, Andhra Pradesh, Tamil Nadu.

References

1. NCERT Class 8 Geography Book.
2. Geospatial Data from ArcGIS sharing portal.



<http://www.esriindia.com/>

ASSESSMENT CRITERIA: INVESTIGATIONS

Skill	Criteria	4	3	2	1	0
Inquiring Experimenting	Following Instructions	- Follows almost all instructions in the task accurately	- Follows most instructions in the task accurately	- Follows some instructions in the task accurately	- Follows few instructions in the task accurately	- Follows no instructions in the task accurately
Handling Researching	Organising information/ data	- Organises all information accurately - Includes all necessary features	- Organises most information accurately - Includes most necessary features	- Organises some information accurately - Includes some necessary features	- Organises little information accurately - Includes few necessary features	- Organises no information accurately
Understanding Analysing	Explaining	- Gives complete and accurate descriptions and reasons for results	- Gives complete and accurate descriptions and partly complete and accurate reasons for results	- Gives complete and accurate descriptions	- Gives partly complete and accurate descriptions OR - Repeats mathematical terms for results	- Gives no accurate descriptions
Evaluating Reflecting	Making informed judgements/ decisions	- Forms an opinion that is supported entirely by the evidence available	- Forms an opinion that is supported mostly by the evidence available	- Forms an opinion that uses some evidence	- Forms an opinion	- Forms no opinion
Participating (Choose the appropriate criterion)	Collaborating with other students	- Contributes fully to the group's work - Understands the group's results completely	- Contributes fully to the group's work - Understands most of the group's results	- Contributes partly to the group's work - Understands some of the group's results	- Contributes little to the group's work - Understands little of the group's results	- Makes no contribution
	Working independently and persevering	- Requires almost no supervision or encouragement - Tries to complete almost all task activities	- Requires some supervision or encouragement - Tries to complete most task activities	- Requires regular supervision or encouragement - Tries to complete some task activities	- Requires frequent supervision or encouragement - Tries to complete few task activities OR - Seeks immediate help	- Requires constant supervision to complete any task activities
						20

المهارة	المعيار	4	3	2	1	0
الاستفسار	اتباع التعليمات	- يتبع غالبا جميع التعليمات المذكورة في المهمة بدقة.	- يتبع معظم التعليمات المذكورة في المهمة بدقة.	- يتبع بعض التعليمات المذكورة في المهمة بدقة.	- يتبع القليل من التعليمات المذكورة في المهمة بدقة.	- لا يتبع أيا من التعليمات المذكورة في المهمة بدقة.
طرق المعالجة	تنظيم المعلومات/البيانات	- ينظم جميع المعلومات بدقة.	- ينظم معظم المعلومات بدقة.	- ينظم بعض المعلومات بدقة.	- ينظم القليل من المعلومات بدقة.	- لا ينظم أيا من المعلومات بدقة.
البحث		- يضمن جميع المميزات والخصائص الضرورية.	- يضمن معظم المميزات والخصائص الضرورية.	- يضمن بعض المميزات والخصائص الضرورية.	- يضمن القليل من المميزات والخصائص الضرورية.	
الفهم	التوضيح	- يعطي وصفا كاملا ودقيقا وأسبابا للنتائج.	- يعطي وصفا كاملا ودقيقا وأسبابا دقيقة جزئيا للنتائج.	- يعطي وصفا دقيقا وكاملا.	- يعطي وصفا دقيقا جزئيا وغير كامل.	- لا يعطي أي وصف دقيق.
التحليل				- يكرر التعبيرات الرياضية للنتائج.	أو	
التقييم	صنع تشكيل الأحكام/القرارات	- يشكل رأيا مدعما كليا بالدليل المتوفر.	- يشكل رأيا مدعما على الأغلب بالدليل المتوفر.	- يشكل رأيا مستخدما بعض الأدلة.	- يشكل رأيا.	- لا يشكل رأيا.
التعمق ونقل الخبرة						
المشاركة	التعاون مع الطلاب الآخرين	- يشارك مشاركة كاملة بعمل المجموعة ويفهم نتائج المجموعة بشكل كامل.	- يشارك مشاركة كاملة بعمل المجموعة ويفهم معظم نتائج المجموعة.	- يشارك مشاركة جزئية بعمل المجموعة ويفهم بعض نتائج المجموعة.	- يشارك بصورة قليلة بعمل المجموعة . يفهم القليل من نتائج المجموعة.	- لا يقوم بأية مشاركة.
(اختر المعيار المناسب)	العمل بالاعتماد على النفس والمواظبة	- لا يحتاج في الغالب لأي إشراف أو تشجيع.	- يحتاج بعض الإشراف أو التشجيع.	- يحتاج دعما أو تشجيعا دوريا لإكمال بعض أنشطة المهمة.	- يحتاج إلى دعم أو تشجيع متكرر.	- يحتاج إشرافا دائما لإكمال أي من أنشطة المهمة.
		- يحاول غالبا إكمال جميع أنشطة المهمة.	- يحاول أن يكمل معظم أنشطة المهمة.	- يحاول إكمال بعض أنشطة المهمة.	- يحاول إكمال القليل من أنشطة المهمة.	
				- يبحث عن مساعدة فورية.	أو	