12 Industries

Industry is related to socio-economic activity. However the production of goods is associated with the arrangement of minerals as well as services. Thus minerals are associated with the production of industrial goods. The mining industry means extraction of minerals from the earth's crust.

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Meaning and Concept

The general meaning of industry is the fruit or result of any work, labour or activity which is used by man for his needs. In ancient times, whatever activity man did to fulfill his needs and production of handicrafts was called industry. But as the needs of man increased, various machines started to be used to meet the growing needs, since then the meaning of industry gradually became wider. Thus in the present times when we hear the word industry, we associate it with machines. The term industry includes three types of activities : (1) To collect raw materials, (2) To change the form of the product and increase its use (3) Deliver the finished product to the market or consumer.

Thus, the industry can be defined as an activity that changes the form of any raw material by mechanical aid and increases its usefulness.

Classification of Industries

Natural Resource Based Industries : Animal husbandry, dairy, meat industry, wool industry, fisheries, forestry, breeding industry, poultry breeding, silkworm breeding, bee breeding, etc. are included in natural resource based industries.

Size-based : On the basis of size, industries may be divided as follows :

(1) **Cottage Industry :** These industries are run by members of the family using simple implements and less investment. e.g. weaving khadi, papad, khakhra, agarbatti, bamboo work etc.

(2) **Micro Industries :** These industries are run with investment within 25 lakh rupees. They are fully labour intensive industries. e.g. making of artistic or useful things made of metal, leather, soil etc.

(3) **Small scale Industries :** These industries produce goods with investment of more than 25 lakh rupees to less than 5 crore. Labour intensive production method is used and goods produced here are helpful for heavy industries. e.g. Implements, mending of vehicles, industries producing usable things.

(4) **Medium scale Industries :** Industries which are labour intensive or capital intensive with investment of more than 5 crore rupees and less than 10 crore rupees. e.g. machines, colour-chemical, electronics implements.

(5) **Large scale Industries :** These industries are mainly capital intensive and have an investment of 10 crores or more. e.g. railway implements, heavy vehicles, iron and steel etc.

Raw Materials Based Industries : Classification of industries on the basis of source of their raw material :

(1) **Agro Based Industry :** Industries for which raw material is obtained from agriculture are called agro based industries. Food industry, cotton and linen textiles industry, vegetable oil industry are examples of agro based industries.

(2) **Animal based Industry :** This Industry includes milk and its products, meat industry and leather industry

(3) **Marine Based Industry :** Fish processing industry as well as use of minerals obtained from the ocean are included in this industry.

(4) **Forest based industry :** This industry includes, paper industry, pharmaceutical, furniture and building.

(5) **Mineral Based Industry :** This industry includes iron and steel industry, cement industry and chemical industry.

Ownership based :

On the basis of ownership industries can be divided as follows :

(1) **Public sector :** Government owned industries operated by the government such as Hindustan Aeronautical Limited and Steel Authority of India.

(2) **Private sector:** This industry is run by an individual or group of individuals, such as Tisco and Reliance.

(3) **Co-operative sector :** Such industries are owned by the producers of raw materials, workers or both and are run by them only. Amul (Anand Milk Union Limited) and Mother Dairy are excellent examples of cooperative activities.

(4) **Joint Sector :** It is owned by the government and an individual or group of individuals. Maruti Ltd. is an example of a joint sector industry.

Activity

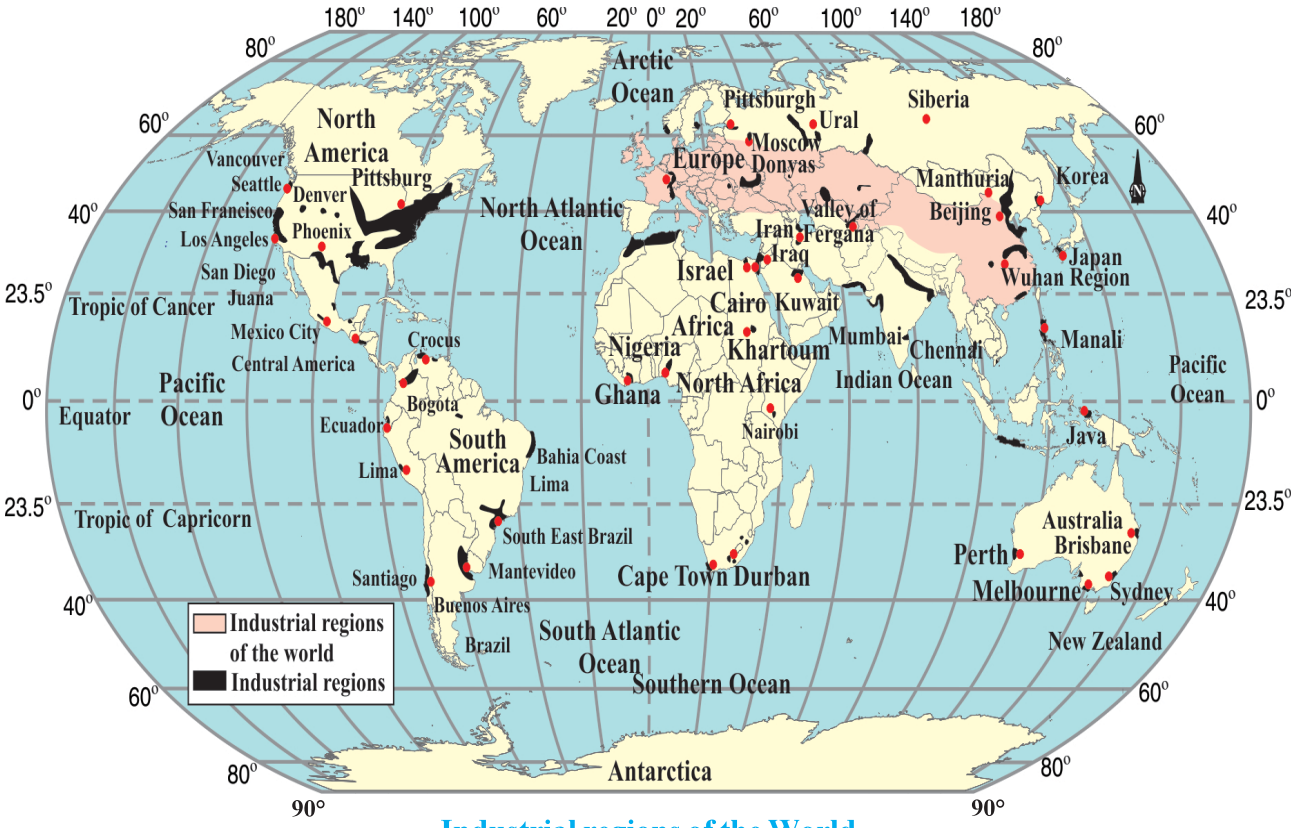
Make a note of examples of local industries of your area on the basis of ownership.

Factors Affecting the Location of industries

The factors affecting the location of industries are, the availability of raw materials, land, water, labour, power, capital, transport and the market. Industries are situated where some or all of these, factors are easily available. Sometimes, the government encourages industries by providing affordable electricity, lower transportation cost and other infrastructure facilities. For example, in Kutch district of Gujarat, industries have developed with the incentives provided by the government. Industries are also established in economically backward areas. Industrialization often leads to development and growth of cities and towns.

Industrial Regions

Industrial regions develops only when many types of industries are situated where some or all of these factors are easily available and can share the benefits of their proximity. The major industrial regions of the world are Northeast America, Western and Central Europe and Eastern Asia. These industrial areas are mostly located in temperate zones, close to seaports and especially near coalfields. India has several industrial regions like Mumbai-Pune cluster, Bengaluru-Tamil Nadu region, Hugli region, Ahmedabad-Vadodara region, Chhotanagpur industrial belt, Visakhapatnam-Guntur region, Gurgaon-Delhi-Meerut region and Kollam-Thiruvananthpuram cluster.



Industrial regions of the World

Distribution of Major Industries

The major industries in the world are iron and steel industry, cotton textile industry, electronic industry and information technology (IT). Iron and steel industry and the cotton textile industry are very old industries, while the information technology is an emerging industry.

Iron and steel industry is located in Germany, USA, China, Japan and Russia. The textile industry is concentrated in India, Hong Kong, South Korea, Japan and Taiwan. The major hubs of the information technology industry are in Silicon Valley of Central California and in the Bengaluru region of India.

Iron and steel Industry

The Iron and Steel Industry requires a very large investment. This is a feeder industry, where produce is used as a raw material for other industries. The inputs for industries include labour, capital, location and other infrastructural facilities and raw materials such as iron ore, coal and limestone. The process of converting iron ore into steel involves many stages. The raw material is put in the blast furnace and purified, thereafter steel is obtained as an output which is used by other industries as raw material. Steel is tough but can easily be shaped, cut or made into wire. Alloys of steel can be made by adding small amount of other metals such as Aluminium, Nickel and Copper. Alloys give steel unusual hardness, toughness and ability to resist rust.

Centres of Iron and steel industry in the World

Steel is often called the backbone of modern industry. Almost everything we use is made of either iron or steel. Steel is largely used in manufacturing vehicles, trains, trucks and construction of ports. Thus we use it for manufacturing needles to giant machines. Oil wells are drilled with steel machines. Oil is transported through steel pipelines. Minerals are mined with steel equipments. Farming implements are mostly made of steel. The structure of huge houses is made of steel.

In India, the iron and steel industry has developed because of advantage of having access to raw materials, cheap labour, transport and the market. All the important steel producing centres such as Bhilai, Durgapur, Burnpur, Jamshedpur, Rourkela, Bokaro are situated in a region, that spreads over four states. These four states are West Bengal, Jharkhand, Odisha and Chhattisgarh. Bhadravati and Vijayanagar in Karnataka, Visakhapatnam in Andhra Pradesh, Salem in Tamil Nadu are other important steel centres utilizing local resources.

Tata Iron and Steel Company (TISCO), Jamshedpur : Before 1947 AD, there was only one Iron and steel plant in India. Tata Iron and Steel Company Limited was privately owned. After independence, the government took the initiative to set up several iron and steel plants. Tisco was started in 1907AD in Sakchi (now Jamshedpur) near the confluence of the Suvarnarekha and Kharkai rivers in Jharkhand. Steel production began in 1912 AD.

Sakchi was chosen to set up a steel plant for several reasons. It was just 32 km away from the Kalimati station on the Bengal-Nagpur railway line. In addition to iron ore, coal and manganese mines, it was also close to Kolkata, where a huge market was available. TISCO obtains coal from the Jharia coalfields and iron ore, limestone, dolomite and manganese from Odisha and Chhattisgarh. Adequate water resources are available from Kharkai and Suvarnarekha rivers. It received sufficient incentive from government in terms of financial assistance.

The development of iron and steel industry opened the doors to rapid industrial development in India. Almost all sectors of Indian industry heavily depend on the iron and steel industry for their basic infrastructure. The Indian iron and steel industry consists of large integrated steel plants as well as mini steel mills. It also includes secondary producers, rolling mills and ancillary industries.

Pittsburgh : This is one of the most important centres of iron and steel industry in the United States. Local facilities are available to this industry. Raw materials such as coal is available only in Pittsburgh, while iron ore comes from Minnesota's iron ore mines. The most suitable waterway is the Great Lakes Waterway that lies between mines and Pittsburgh. This is a cheap waterway for shipping of ore. Adequate water-supply is obtained from the rivers – Ohio, Monongahela and Alleghery.

Today there are very large iron and steel mills in Pittsburgh. The mills are located in the Monongahela and Alleghery river valleys above Pittsburgh and on the banks of the Ohio river below Pittsburgh. Finished steel is transported to the market by both land and water routes.

Cotton Textile Industry

Weaving cloth from yarn, is an ancient art. Cotton, wool, silk, jute, flax etc. have been used in making textile. The textile industry can be divided on the basis of the raw materials used. Fibers are the raw material of the textile industry. Fibers can be natural or even man-made. Natural fibers are obtained from wool, silk, cotton, linen and jute. Man-made fibers include nylon, polyester, acrylic and rayon.

The cotton textile industry is one of the oldest industries in the world. Till the Industrial Revolution of the 18th century, cotton cloth was made manually and with the help of handlooms. In the 18th century, powerlooms facilitated the development of cotton textile industry, first in Britain and later in other parts of the world. Today, India, China, Japan and the USA are the major producers of cotton textiles.

India has a glorious tradition of producing high quality cotton fabrics. Before the British rule, Indian hand woven cloth already had a wide market. Dhaka's muslin, Machilipatnam's chintz, Calicut's cotton cloth and Burhanpur, Surat and Vadodara's golden embroidered cotton cloth were world famous for their quality and design. The production of hand woven cotton textile was time consuming and expensive. Hence, the traditional cotton textile industry could not compete with the mechanized textiles of the West.

The first successful mechanized textile mill was established in Mumbai in 1854 AD. The hot and humid climate, port for import, availability of raw materials and skilled labour resulted in the rapid expansion of this industry in this region. In the early years, the industry was established in Maharashtra and Gujarat. Since then it has spread to different parts of India. Coimbatore, Kanpur, Chennai, Ahmedabad, Mumbai, Kolkata, Ludhiana, Puducherry and Panipat are its important centres.

Ahmedabad : Ahmedabad is located on the banks of the Sabarmati river in Gujarat. The first cotton mill was established here in 1861 AD. It became the second largest cotton textile city of India after Mumbai. Ahmedabad was known as the 'Manchester of India'. Favourable location was helpful in the development of the cotton textile industry in Ahmedabad. Ahmedabad is situated very close to the cotton-producing region. Raw materials were readily available here. Availability of flat land had proved useful in the establishment of factories. The densely populated states of Gujarat and Maharashtra provided skilled and semi-skilled labour to the industry. The network of well-developed roads and railways helped in easy delivery of cotton cloth to different parts of the country. The Mumbai Port facilitated the import of machinery required for this industry and the export of the cotton textile. But in the last few years, many textile mills have closed down due to some problems in Ahmedabad.

Activity

Arrange a visit to any industrial unit during the school trip.

Osaka : Osaka is an important textile manufacturing centre of Japan. It is also known as the 'Manchester of Japan'. The cotton textile industry has developed in Osaka because of number of geographical reasons.

The extensive plains around Osaka ensure easy availability of land for the development of cotton textile mills. The humid climate is very suitable for weaving and spinning. The Yodo River provides sufficient water for mills. Labour is easily available. The geographical location of the port facilitates the import of raw cotton and the export of textiles. Osaka's textile industry is based entirely on imported raw materials from Egypt, India, China and USA. The cloth produced there is mostly exported. A good market has been accessed by it due to high quality and cheap rate. It is considered as an important industrial centre of Japan. But in recent times, Osaka's cotton textile industry has been replaced by other industries such as iron-steel, machinery, shipbuilding, automobiles, electrical appliances and cement.

Information Technology Industry

Imagine how much work could be done if the company is operated for 24 hours a day. Some software companies of the United States and Bangaluru have signed agreements to do so. There are many alternatives in the world to work in shifts. For example, two software professionals, Danny in Silicon Valley, California and Smita, in Bangaluru, work on the same project. Danny works in California while Smita sleeps in Bangaluru. At the end of his workday he sends up-to-date message of the progress of the work to Smita.

Information Technology Industry

A few hours later when Smita arrives at the office in Bangaluru, she knows that a message awaits her and she immediately joins the work of the plan. At the end of her workday, she sends the results of her work back to California. This is how dialogue and work go hand in hand. As if both are sitting together in the office.

The information technology industry brings the collection, processing and distribution of information into practice. Currently this industry has become global. Technology, politics, socio-economic changes have made it possible. The main factors that determine the geographical location of this industry are - facilities for research, availability of money and structure of the research. The main centres of the information technology industry are Silicon Valley in California and Bengaluru in India.

Think and Tell

- How do industries thrive in certain areas ?
- How does facility of transportation help in development of Industries ?

Bangaluru is located in Deccan Plateau. Hence it is named as 'Silicon Plateau'. The city is world famous for its moderate climate throughout the year. Silicon Valley is a part of the Santa Claus Valley. It is located near the Rocky Mountains in North America. The climate of the region is temperate, where occasionally the temperature drops below 0° C. The advantage of the geographical location of Silicon Plateau, Bangaluru and Silicon Valley California is shown here. Thus we can see the similarities between these two cities.

The metropolitan hub of India has other emerging IT hubs like Mumbai, New Delhi, Hyderabad and Chennai. Other cities like Gurgaon, Pune, Thiruvananthapuram, Cochin and Chandigarh are important centers for the information technology industry.

Exercise

1. Answer the following questions :

(1) What does the word industry mean ?

(2) Which are the main factors that affect the localization of the industry ?

(3) Which industry is mainly known as the backbone of modern industry ? Why ?

(4) Why did the cotton textile industry develop rapidly in Mumbai ?

(5) What are the similarities between the information technology industry in Bengaluru and California ?

2. Choose the correct option and write correct answer :

(1) Where is Silicon Valley located ?

(A) Bangaluru (B) California (C) Ahmedabad (D) Japan

(2) Which of the following is a developing industry ?

(A) Iron-steel industry (B) Cotton textile industry

(C) Information technology Industry (D) Jute textile industry

(3) Which of the following is a natural fiber ?

(A) Nylon (B) Jute (C) Acrylic (D) Polyester

3. Differentiate between :

(1) Agro-based industry and mineral based industry

(2) Public sector and joint-sector Industry

4. Write two examples in the following blanks :

(1) Raw materials : ..... , ...

(2) Agro based industry : ..... , ...

(3) Cooperative industry : ..... , ...