

IR-10: Industrialization Vocabulary Prediction Chart

Use the chart below to define the key words of the section. Before reading, predict the definition of the word. After reading, complete the chart with the definition and visual clue.

Key Term	Prediction before Reading	Definition after Reading	Key Words
Industrialization			
Land			
Labor			
Capital			
Entrepreneurship			
Deindustrialized			
Outsourced			
Maquiladoras			

IR-10: Industrialization Vocabulary Prediction Chart—Answer Key

Use the chart below to define the key words of the section. Before reading, predict the definition of the word. After reading, complete the chart with the definition and visual clue.

Sample answers are shown below. Accept all reasonable responses.

Key Term	Prediction before Reading	Definition after Reading	Key Words
Industrialization	Answers may vary.	Industrialization was the catalyst for the development of new and complex systems of transportation and communication, the use of sophisticated machines in farming and manufacturing, and the ability to preserve mass quantities of food.	Answers may vary but may include: <ul style="list-style-type: none"> • Factories • Production • Efficiency • Technology • Mass production
Land	Answers may vary.	A factor of production: Owning land means owning all of the resource on or in the land.	Answers may vary but may include: <ul style="list-style-type: none"> • Resources • Soil • Water • Natural resources
Labor	Answers may vary.	A factor of production: the people who perform different economic activities such as farmers, food producers, managers and workers in factories, and people to transport goods from one place to another	Answers may vary but may include: <ul style="list-style-type: none"> • Jobs • Workers • Producers
Capital	Answers may vary.	A factor of production: referring to money	Answers may vary but may include: <ul style="list-style-type: none"> • Purchase • Pay • Invest
Entrepreneurship	Answers may vary.	A factor of production: people who have an idea and are willing to risk their personal fortune on the development of that idea	Answers may vary but may include: <ul style="list-style-type: none"> • Owner • Risk taker • Inventor • Creator
Deindustrialized	Answers may vary.	Highly developed economies such as the US, the UK, and Japan have shifted their core economic processes away from manufacturing and toward tertiary and quaternary sector work.	Answers may vary but may include: <ul style="list-style-type: none"> • Developed • Shifting • Tertiary and quaternary sectors
Outsourced	Answers may vary.	Companies in developed countries hire workers in emerging countries to perform work at less cost than would be possible in the US.	Answers may vary but may include: <ul style="list-style-type: none"> • Developing • Emerging • Secondary sector • Manufacturing
Maquiladoras	Answers may vary.	Foreign-owned factories in Mexico operate in cities near the US border and mass-produce goods at less cost than would be possible in the US.	Answers may vary but may include: <ul style="list-style-type: none"> • Manufacturing • Border cities • Foreign-owned • Exporting

IR-11: Industrialization—Reading to Learn

Purpose for reading: Identify and understand the concept of spatial relationship.

Main Ideas	Details
<p>Factors of Production:</p> <p>Industrial Revolution (who, what, when, where, why, how):</p> <p>Resources Used for Energy:</p> <p>1700s:</p> <p>Present-Day:</p>	

IR-11: Industrialization—Reading to Learn

Main Ideas	Details
<p data-bbox="152 197 516 226">Deindustrialized Countries:</p> <p data-bbox="152 705 319 735">Outsourced:</p> <p data-bbox="152 1247 506 1276">Sustainable Development:</p>	

Industrialization

Industrialization was the catalyst for the development of new and complex systems of transportation and communication, the use of sophisticated machines in farming and manufacturing, and the ability to preserve mass quantities of food. These factors contributed to an increase in wages for most people, better nutrition, improved health care, and extended life expectancy for people who lived in regions that were industrialized.

In order for industrialization to begin, a country must have access to the factors of production. Simply put, **factors of production** are land, labor, capital, and entrepreneurship. Owning land means owning all the resources on or in the land. Fertile topsoil to grow food, freshwater to irrigate crops, deposits of coal as an energy source, and iron ore as a source for making steel were all valued items in the 18th century. These resources are still very important to countries today. Labor refers to the people who perform different economic activities, such as farmers and food producers, managers and workers in factories, and people who transport goods from one place to another.

Capital, in an economic sense, refers to money. Money is necessary to purchase equipment and workspace, pay laborers, and invest in the research and development of new ideas. Finally, entrepreneurship includes those people who have an idea and are willing to risk their own personal fortune on the development of that idea. Henry Ford did not invent the first automobile, but he is credited with creating the assembly line, which revolutionized the speed with which things could be mass-produced. Milton Hershey not only developed a famous recipe for milk chocolate, but he also built a city, which bears his name, so that his employees could live near the factory where they worked.

The Industrial Revolution started in 1750 in Great Britain because, for the first time in human history, all four factors of production were available in the same place at the same time. Water power and abundant coal fields near Birmingham, England, provided the necessary energy resources to power the machines. Ample deposits of iron ore were used to construct the machinery and the factories. Britain also had a growing population, so there were plenty of available workers.

Coal was an important natural resource used to produce energy needed for industrialization. Coal fields were abundant in England and Wales, the Ruhr Valley in western Germany, and throughout the eastern part of the United States. Coal deposits were discovered in the 20th century in western China. Much like the early industrializing countries, China has an abundance of coal and is exploiting it as an energy resource because it is very inexpensive to produce. However, whenever human beings mine any natural resource, there is damage done to the physical environment.

For countries that already were economically developed and have a more sophisticated technological infrastructure, oil and natural gas were two primary natural resources used for energy production in the 20th century. Because of the

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advances in technology, oil and natural gas were cheaper than coal to extract, refine, and use. Another source of energy was nuclear energy. Nuclear energy is a cleaner-burning fuel than fossil fuels and has less negative impact on the environment. The mass production of nuclear energy was limited for two reasons, however: the potential for a nuclear accident and the predicament of what to do with radioactive waste created in the production of nuclear energy.

As the British became more industrialized in the 19th century, they were able to use inland waterways to transport resources to factories and finished products to marketplaces. Natural ports were scattered around the island. The largest and most important port was in London, but other port cities included Dover, Southampton, Liverpool, and Felixstowe. From these ports, goods could be shipped to markets overseas. In order to meet the needs of the expanding economy, the British government started to establish colonies in other parts of the world in order to have a constant supply of natural resources as well as to establish new markets.

There were other European countries that attempted to expand their overseas colonies. In order to keep pace with the expanding British economy, France, the Netherlands, Portugal, and Spain wanted to exploit natural resources in other countries. The European exploitation of natural resources in distant lands provided jobs in their own homelands and maintained their standard of living, as well as established markets in other countries to sell goods and services.

European Colonies and Influence Outside of Europe		
	Southeast Asia	Africa
Great Britain	Burma Hong Kong India Malaysia Singapore	Botswana Egypt Kenya Nigeria Sudan
France	Cambodia Laos Vietnam	Algeria Mali Morocco Niger
Belgium		Congo
The Netherlands	India Indonesia	N/A
Portugal	Malaysia	Angola Mozambique
Spain	Philippines	Western Sahara

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World Systems Theory

The world has changed dramatically since the Industrial Revolution started in 1750. Today there are more people who live in urban areas, more people who work in the secondary and tertiary sectors, and technology is rapidly changing our daily activities. However, something that has stayed relatively the same over time is the need for countries to interact with each other. Wallerstein's world systems theory seems to speak directly to the leading industrial and manufacturing core areas. Examine the spatial relationship of the four major industrial and manufacturing cores in the world today:

- Western and Central Europe
- Eastern North America (including the United States and Canada)
- Russia and Ukraine
- Eastern Asia

There are many factors that determine the level of development of a country's economy. Typically, the higher the GDP per capita and literacy rate, the longer the life expectancy; the greater access to technology, infrastructure, and educational and medical facilities, the **more developed** the status. The lower the values of these indicators, the **less developed** the status. Countries that are in between these two groups are called **newly industrialized countries**.

The United States and Canada are among the few countries in the world classified as more developed countries. Because the United States and Canada are endowed with an abundance and a variety of natural resources, neither country had to expend much time or energy in creating the world's most sophisticated industrial complex. Neither country had to worry about developing an extensive trade network with other countries for energy resources. Additionally, neither country sustained the human casualties, nor did they experience the environmental degradation, caused by World Wars I and II. As a result, the United States and Canada were able to come out of both world wars ahead of countries in Europe and Asia.

There are other developed countries in the world today. Japan was able to rebuild its economy after World War II primarily because of assistance from the United States. The United States also played an important role in helping to rebuild countries in Europe such as the United Kingdom, France, and Germany.

Newly industrialized countries are countries that have rapidly developed in recent years. Their economies may not be as big or stable as those of more developed countries, but they continue to thrive. South Korea, Taiwan, and Singapore are some of the best examples. Hong Kong was considered to be in this group as well, but the British released their control over Hong Kong in 1997, and the city reverted to Chinese control. Hong Kong still is considered to have a very highly developed economy, but it no longer is considered to be an independent economic entity.

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China, India, Mexico, Brazil, and Russia also have newly industrialized economies. Each country has started to industrialize as a pathway to economic development, but none of them are as clearly developed as the more developed countries. There is a strong trading relationship between these emerging economies and those that are highly developed in the core. In fact, as countries such as the United States, the United Kingdom, and Japan have become **deindustrialized**, shifting their core economic processes away from industry, many of the secondary sector jobs (e.g., assembly line, manufacturing, and industrial) are **outsourced** to countries that have developing economies. China currently produces more manufactured goods than the United States, although the people in the United States have a higher per capita income, because tertiary and quaternary sector jobs generally pay a higher rate than secondary sector jobs. Similarly, **maquiladoras** in Mexico, which are foreign-owned factories, have employed thousands of people who mass-produce clothing, automobiles, and even toys. Mexico does not have the same labor laws and regulations as the United States. Consequently, laborers work for less money, in much worse working conditions, than the organized labor in the United States. The maquiladoras can be found primarily in the border cities of Tijuana, Ciudad Juarez, Nuevo Laredo, and Matamoros, although Monterrey, Mexico, is the industrial capital of northern Mexico. Mattel, an American toy manufacturing company, has its largest plant in the world in Tijuana, Mexico. Some automobiles manufactured in Mexico and exported overseas include the Lincoln MKZ, the Honda CR-V, and the armored BMW X5. In 2009, almost 3 million automobiles were produced in Mexico, and that number is projected to double by 2013.

Outsourcing of jobs is not restricted to specific places or for specific jobs. There are primary sector jobs in the Caribbean islands that cultivate fruit and sugar; in Indonesia and Southeast Asia that export various spices; and in western Africa, where the cocoa bean (fundamental ingredient in chocolate) is grown and exported to developed countries. Secondary sector jobs that include the manufacturing of clothing are abundant in Central America (Guatemala and Honduras) and Southeast Asia (Vietnam, Thailand, and Indonesia). These are just a few examples of labor that has been outsourced to other regions and countries throughout the world.

One of the most interesting developments about outsourcing jobs is in the tertiary sector, specifically, information technology jobs. India's economy today competes with the United States for jobs in the information technology industry. Building on its colonial heritage and the influence of having English speakers, India has blossomed in recent decades.

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Many companies based in the United States have capitalized on outsourcing call center jobs to India. First of all, people of India have invested in higher education, and more people have college educations. Those with the technical knowledge to compete for jobs in the global marketplace are working for less money than their counterparts in the United States. Therefore, it makes economic sense for companies to pay lower wages in an effort to maximize their profit margin. The reason this is a concern for the United States is that until recently, almost all the information technology jobs in the world were in the United States. In a sense, the United States cornered the market on these types of jobs, which, relative to primary and secondary jobs, require more formal education but also pay a higher wage. With this industry blossoming in India, there is increased competition globally for these kinds of jobs.

Sustainable development has taken on multiple meanings for different groups of people. However, in its original discussion by the World Commission on Environment and Development in 1987, **sustainable development** was understood to mean development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The idea of sustainable development is not limited to individual countries or regions. In its broadest application, the idea is that all human beings, regardless of gender, religion, race, nationality, or economic standing, would be able to live a safe and satisfying life without mortgaging environmental conditions for future generations.

However, current statistics demonstrate some points to consider:

- 1.3 billion people in the world (total population is more than 7 billion) do not have access to clean water; that is roughly one out of every five people.
- Approximately 20% of people living in the wealthiest countries control about 86% of the total wealth in the world.
- About 1 billion people suffer from hunger, whereas more than 1 billion people are obese.
- Nearly 3 billion people in the world survive on less than \$2 a day.

International organizations try to lead the way in the relatively new field of sustainable development. The United Nations Division of Sustainable Development and the World Business Council for Sustainable Development (WBCSD) are two such organizations that try to increase knowledge of, break down stereotypes of, and increase discussion of ways to improve living conditions for people today as well as in the future. Both organizations address issues relating to energy resources, financial debt of the poorest countries in the world, technology, food supplies, and climate change.

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However, there is not agreement throughout the world about what sustainable development means or the implications of it. First of all, not everyone agrees on its definition. Some people believe there are hidden agendas behind sustainable development. One such concern is that countries that are already developed want to control the economic development process of countries that are not as developed. Another concern is that sustainable development is a disguise to influence population controls on countries that are developing or are underdeveloped. In either case, because the concept of sustainable development is relatively new, it seems that it will take much more time to pass through the discussion phase and move to more meaningful actions.

IR-13: Industrialization Problem-Solution Notes

Choose an economic problem from IR-12 that illustrates an environmental problem that affects either sustainable development or renewable or nonrenewable resources. Use the graphic organizer below to guide your analysis of the identified problem.

Problem:	
Causes:	Effects:
Evaluate different ways this country could improve how it handles the problem.	

IR-13: Industrialization Problem-Solution Notes—Answer Key

Choose an economic problem from IR-12 that illustrates an environmental problem that affects either sustainable development or renewable or nonrenewable resources. Use the graphic organizer below to guide your analysis of the identified problem.

Sample answers are shown below. Accept all reasonable responses.

<p>Problem: Answers may include but are not limited to the following:</p> <ul style="list-style-type: none">• Environmental and health problems due to coal mining• Accidents related to nuclear power plants• Conflicts due to globalization of industry and trade• Outsourcing of services to foreign industries• Inequity of basic resources in many areas of the world	
<p>Causes: Answers may include but are not limited to the following:</p> <ul style="list-style-type: none">• Exploitation of cheap natural resources• Development of nuclear power plants as a source of alternative energy• Various economic structures and goals• Competition for cheap labor• Disparity between developing and developed nations	<p>Effects: Answers may include but are not limited to the following:</p> <ul style="list-style-type: none">• Damage to the environment and workers' health• Mistakes in managing nuclear plants• Quarrels between countries over industrialization and trade• Loss of domestic jobs due to foreign outsourcing of services• Lack of water, food, and health care in developing areas
<p>Evaluate different ways this country could improve how it handles the problem.</p> <p>Answers may include but are not limited to the following:</p> <ul style="list-style-type: none">• Responsible management of resource acquisition• Effective safety measures strictly enforced in nuclear plants• Agreements between national trading partners• Laws regulating foreign job outsourcing• Participation in joint organizations such as the United Nations Division for Sustainable Development	