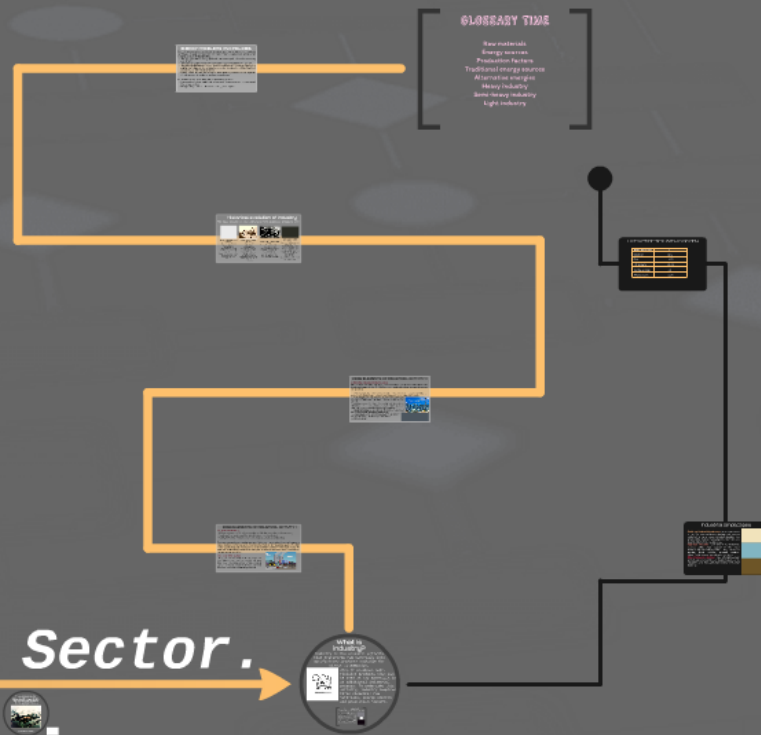
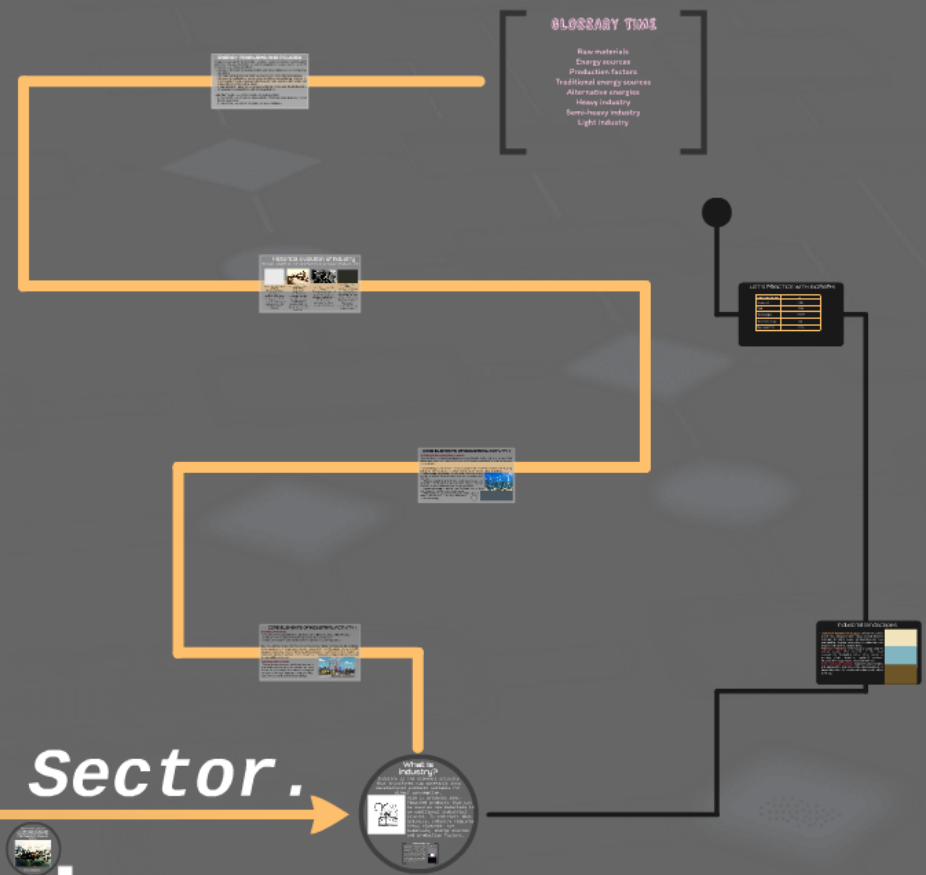


Unit 3: The Secondary Sector. Industrial activities



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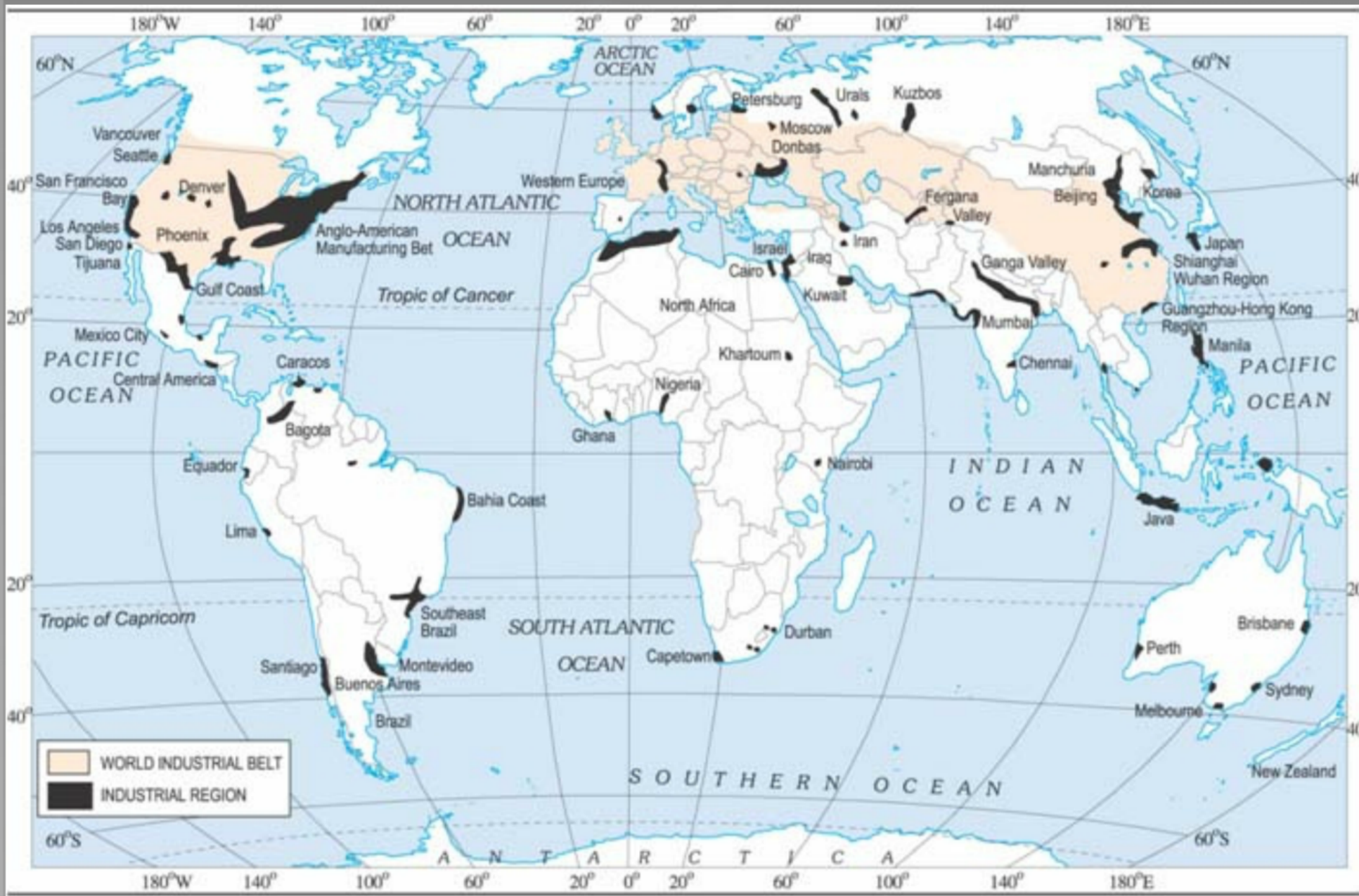


The secondary sector includes economic activities concerned with transforming raw materials into products that enable human needs to be met.



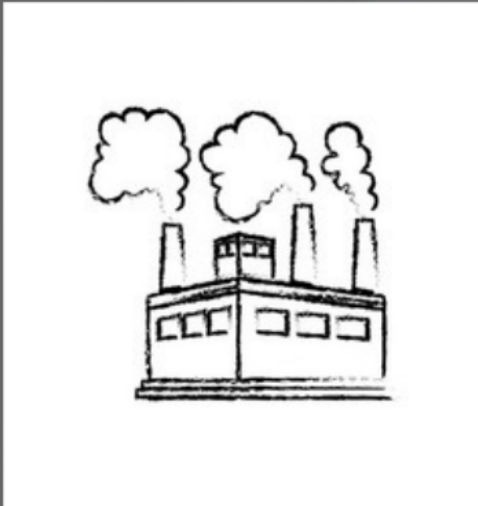
FOR EXAMPLE...





What is industry?

Industry is the economic activity that transforms *raw materials* into *manufactured products* suitable for direct consumption.



Also it produces semi-finished products that can be used as raw materials in an additional industrial process. To undertake this activity, industry requires three elements: raw materials, energy sources and production factors.

What is industry?

The Secondary Sector not only includes industrial activities but also mining, energy and construction.

- **Mining:** is concerned with refining rocks and minerals that are found on or beneath the surface.
- **Energy production:** transforms energy sources into heat and electricity that allow industrial work to be undertaken. We can find different types of energy production such as thermal, nuclear, wind, solar, etc.
- **The construction industry:** creates different types of structures (buildings) and infrastructures (roads, bridges, etc.). Today it's a core industry due to its economic importance.

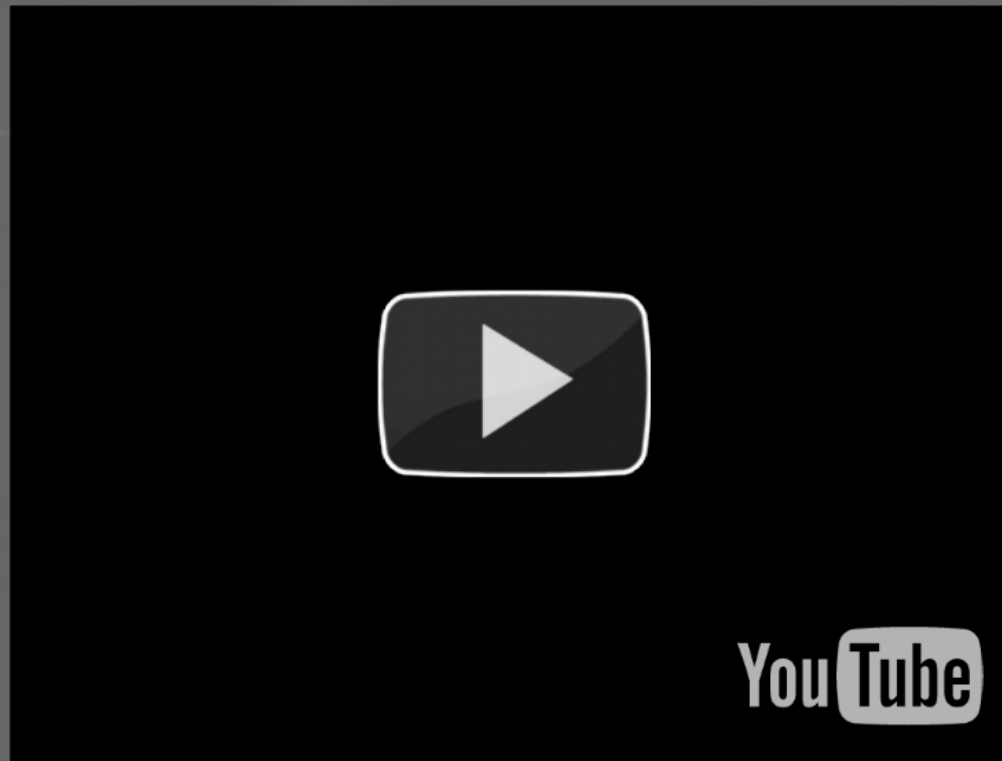


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HOMEWORK...

Find information about the **new real estate bubble in national newspapers**, copy the most important information of the news and quote the source

CORE ELEMENTS OF INDUSTRIAL ACTIVITY I

INDUSTRIAL RAW MATERIALS

- *Plant-sourced raw materials*: obtained from agriculture and silviculture (cotton, tobacco, rubber, wood, etc.).
- *Animal-sourced raw materials*: provided by livestock farming (silk and oil production).
- *Geological raw materials*: extracted from the Earth's crust (minerals, rocks and energy products).

Today, these raw materials are a very important part of *global trade*. However, their production and consumption change according to countries and regions. *Production* is concentrated in just a few countries known as the CARBS (Canada, Australia, Russia, Brazil and South Africa) which own between 25% and 50% of the natural resources. We should also include the USA and China. For the *consumption*, it's located in Western Europe, Japan, United States and emerging countries such as China.

TRADITIONAL ENERGY SOURCES

- They are the ones most widely used because they are the most highly developed. Being **non-renewable**, this group includes: coal, oil, natural gas and nuclear fission energy. *Oil and coal* are the most representative traditional energy sources with a 30% of the total, followed by *natural gas*.



CORE ELEMENTS OF INDUSTRIAL ACTIVITY II

ALTERNATIVE AND CLEAN ENERGY SOURCES

They are those that have been developed as an alternative to the traditional sources. Their development began with the *1973 Oil Crisis* which forced industrialised countries to seek new energy options.

--> **Solar energy:** is derived from the sun's light and heat. Its force is concentrated by using panels and it provides heat or electricity. Main producers: Canada, USA and Australia.

--> **Wind energy:** is derived from the wind, which turns generators in order to provide electricity. Main producers: Germany, Spain and USA.

--> **Biomass energy:** is derived from agricultural, livestock and silviculture. The burning of biomass fuel provides heat and electricity. Problem: emissions CO₂ during combustion.

--> **Geothermal energy:** is derived from the Earth's internal heat and it's used to heat water and provide energy

--> **Wave power:** is derived from the power of the tides or waves of the sea and it's used to provide energy.

--> **Nuclear energy....**



Historical evolution of industry

The main stages in the manufacturing physical products are:



Up to the late 18th century.

Master craftsmen converted raw materials in manufactured goods using their energy and skill. They form craftsmen's districts and the production was limited.



Late 18th - late 19th cent.

Large-scale industrial manufacturing processes emerged in Great Britain. The invention of steam-driven machines made it possible to develop industries such as textiles.



Late 19th - late 20th cent.

This period brought it mass-produced industrial products: vehicles, medicines...
New processes: assembly lines.
New energy sources: oil and electricity



Late 20th - 21st cent.

Production processes began to use increasingly more technology and less labour. Robots and automated devices do most of the work.
New sector: technology, microelectronics and biotechnology.

ENERGY PROBLEMS AND POLICIES

Energy is necessary for our daily life, it enables transport, machines and household appliances. However, its production and consumption is unequal around the world which gives rise to **serious problems**:

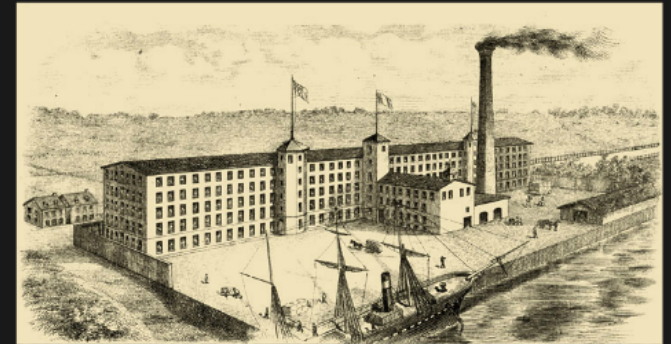
- The rise in the world's energy production and consumption due to the increasing populations.
- The majority of global energy needs are covered by non-renewable energy sources.
- The unequal distribution of energy resources obliges non-producing countries to pay for costly imports. Energy supplies have also been used as a form of political pressure by countries such as Russia.
- Energy production gives rise to serious environmental problems like the depletion of resources and atmospheric, land and sea pollutions.

Today, the majority of countries have adopted energy policies:

- Environmental policies: seek to reduce emissions from major energy-producing and the transport sector.
- Energy-saving policies: aim to reduce energy consumption.

Industrial landscapes

- **Traditional industrial landscapes:** underwent a crisis in the 70s, because these industries had become outdated. In some cases, reindustrialisation was promoted but in other cases, physical relocation was used in order to find cheaper areas.
- **High-tech industries:** have become established in science parks often located in the most economically flourishing cities. They provide a meeting point between qualified workers, infrastructure support and advanced services.
- **Other traditional industries:** have left urban centers and relocated to traditional industrial estates or to industrial parks that combined industry with office buildings.



LET'S PRACTICE WITH A GRAPH

ENERGY PRODUCTION	%
Crude oil	31%
Coal	29%
Natural gas	21,5%
Nuclear energy	5%
Hydroelectric	2,5%

GLOSSARY TIME

Raw materials

Energy sources

Production factors

Traditional energy sources

Alternative energies

Heavy industry

Semi-heavy industry

Light industry

Unit 3: The Secondary Sector. Industrial activities

