Yakın Doğu Üniversitesi
Mimarlık Fakültesi
Peyzaj Mimarlığı Bölümü

NEAR EAST UNIVERSITY

PM 317 Human and Environment

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Need for Environmental studies

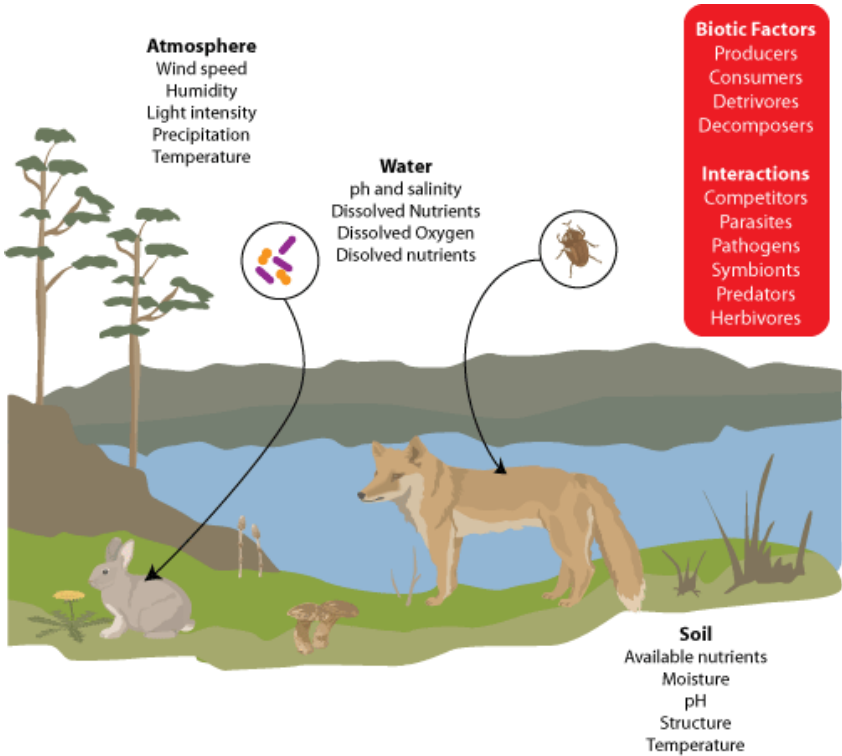
- It is very important for every person for self-fulfilment and social development.
- It helps to understand different food chains and ecological balance in nature.
- It helps to understand and appreciate how the
- environment is used for making a living and for promoting a material culture.
- It helps in appreciating and enjoying nature and society.
- It generates concern for the changing environment in a systematic manner for the future as well as immediate welfare of mankind.
- It directs attention towards population explosion, exhaustion of natuial resources and pollution of environment and throws light on solutions

What is Environment

- Environment means surrounding.

Cities, roads, meadows, lakes etc.

- The **environment** encompasses all living and non-living things occurring naturally and their interactions amoung them.
- Or it refers to all the **abiotic factors** or nonliving environmental factors that surround an organism.
- An environment can be very large (Earth) or can also be very small.
- **Environmental factors** influence living organism during their life, these are;



Abiotic (physical/ non-living) : are those non-living physical and chemical factors which affect the ability of organisms to survive and reproduce.

Biotic (living) : are all the living things or their materials that directly or indirectly affect an organism in its environment.

Earth:
Matter does not come and go

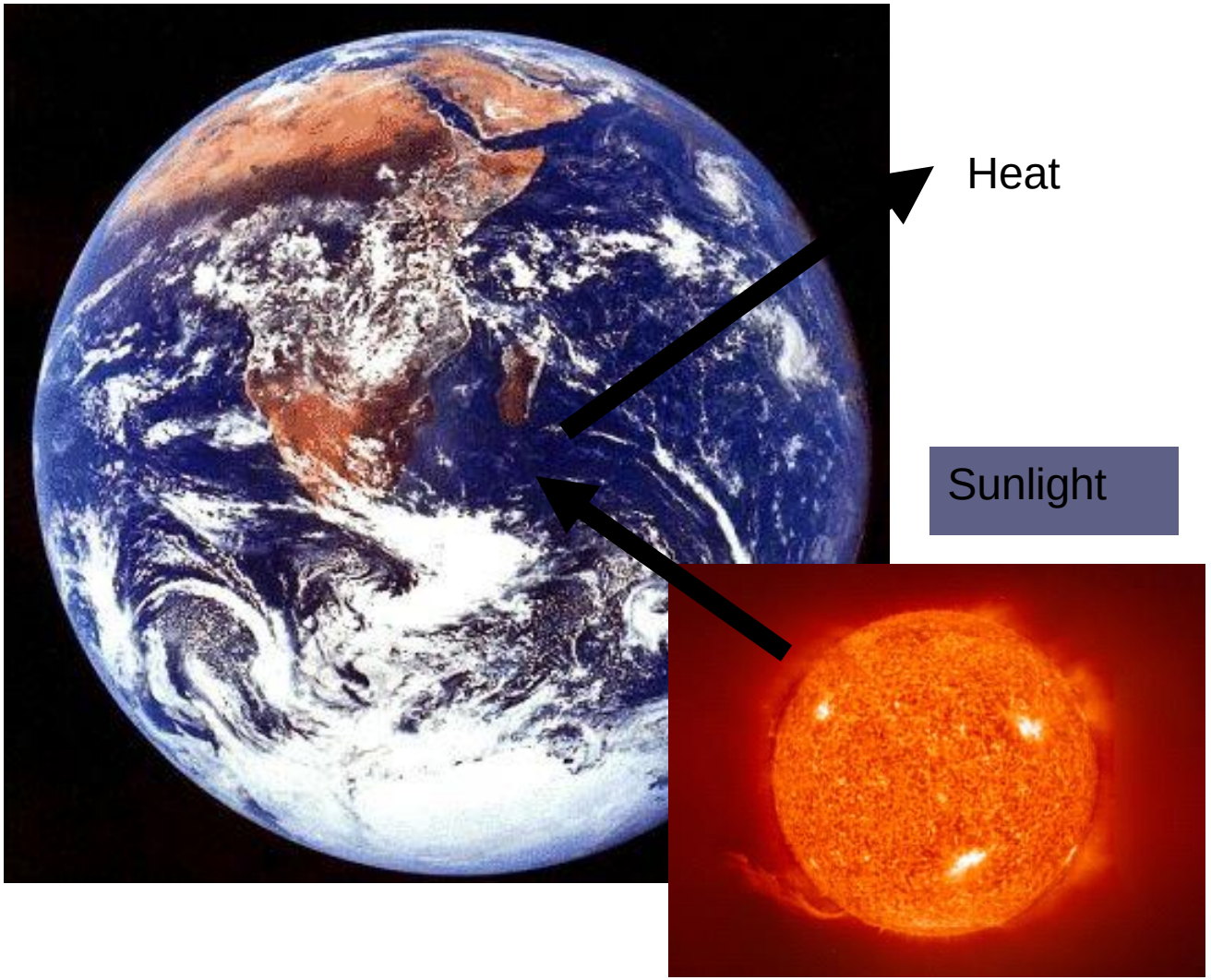
Earth is a closed system to matter

So… matter is constantly recycled on Earth

Earth:

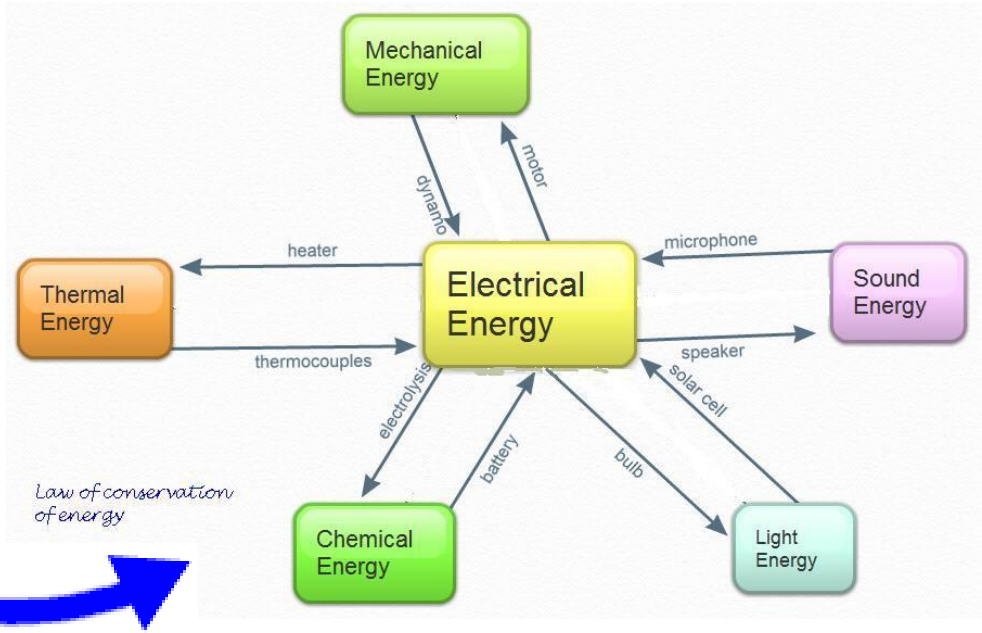
Earth constantly gains & loses energy

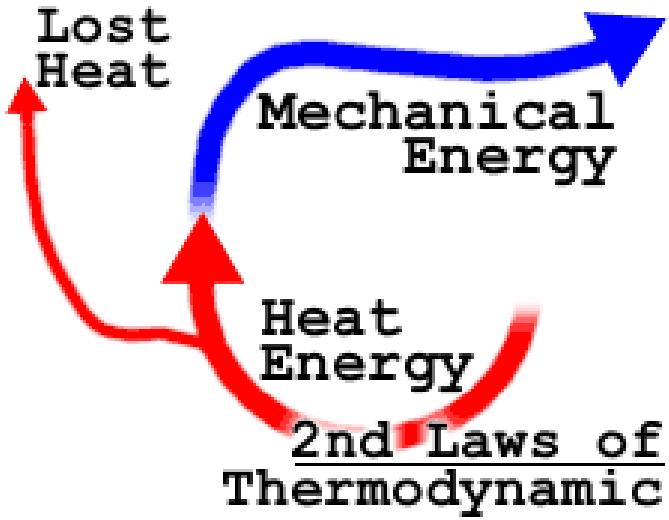
Earth is a Open System to Energy



The Laws of Thermodynamics

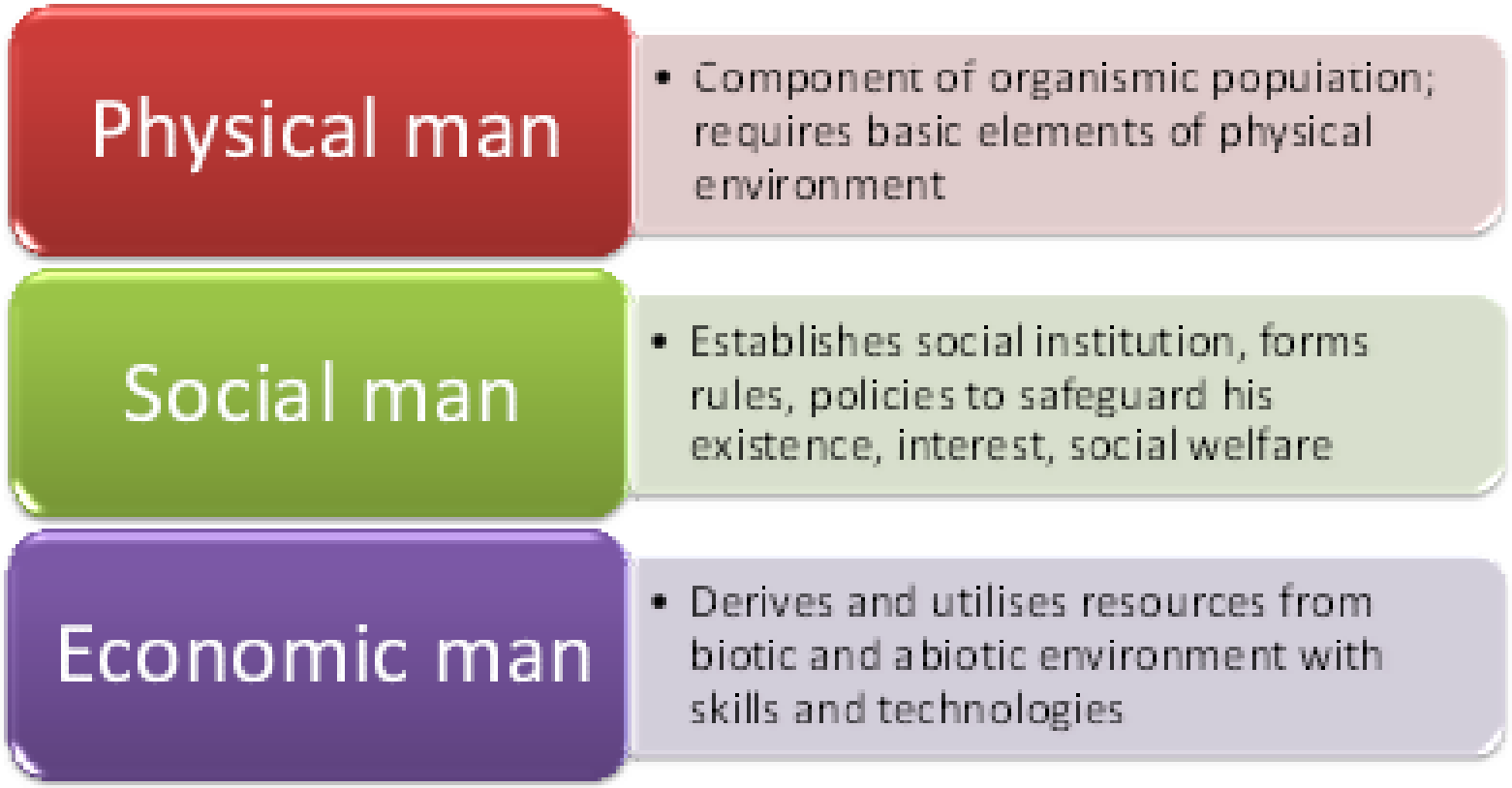
- All kinds of laws govern our everyday life. So, let's look at a set of examples to see how the laws of thermodynamics apply to everyday life.
- The first law of thermodynamics states that energy can't be created or destroyed, but you can convert it from one form to another. This is also sometimes referred to as the law of conservation of energy.



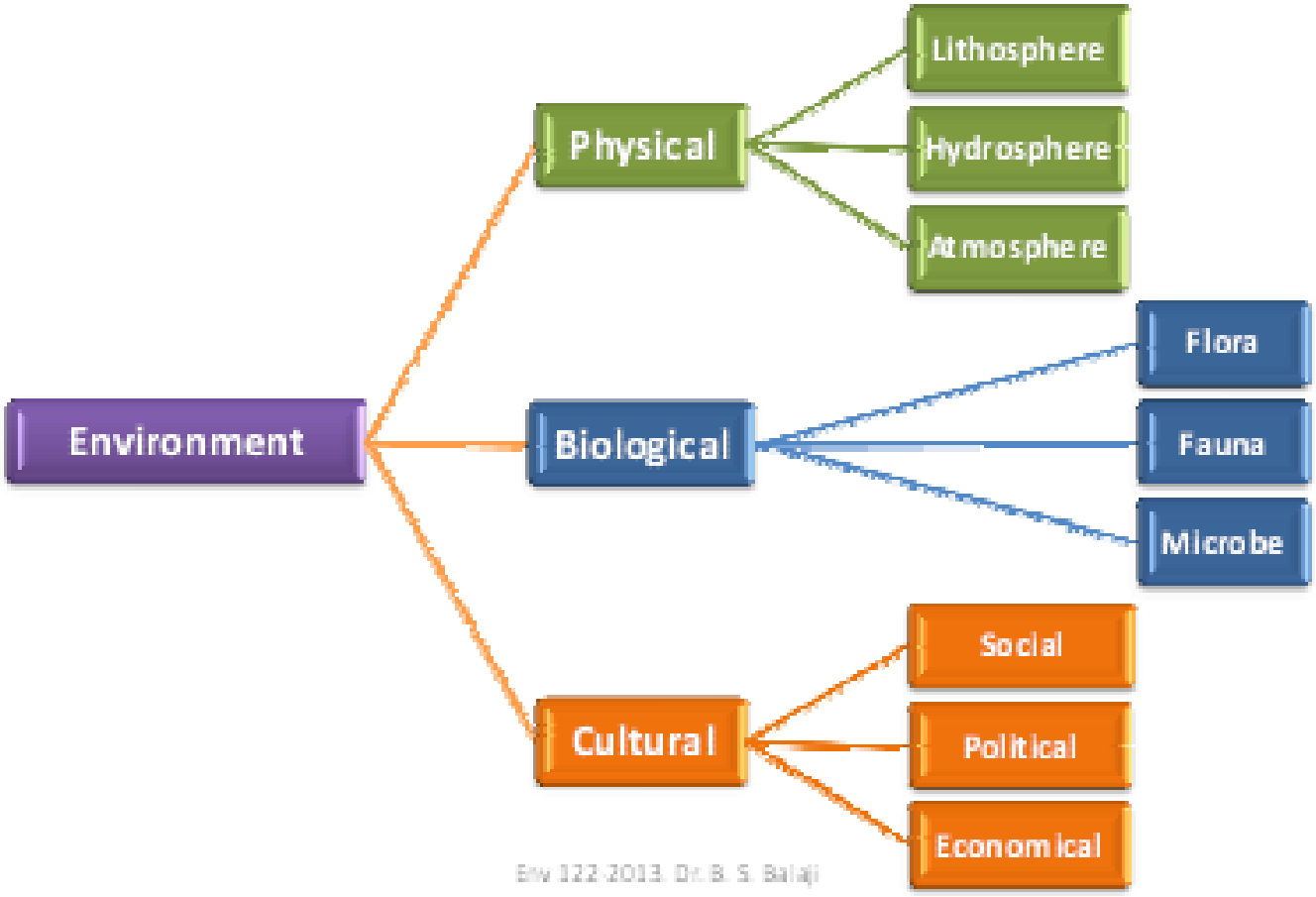


- The second law of thermodynamics states that not all energy can be used.

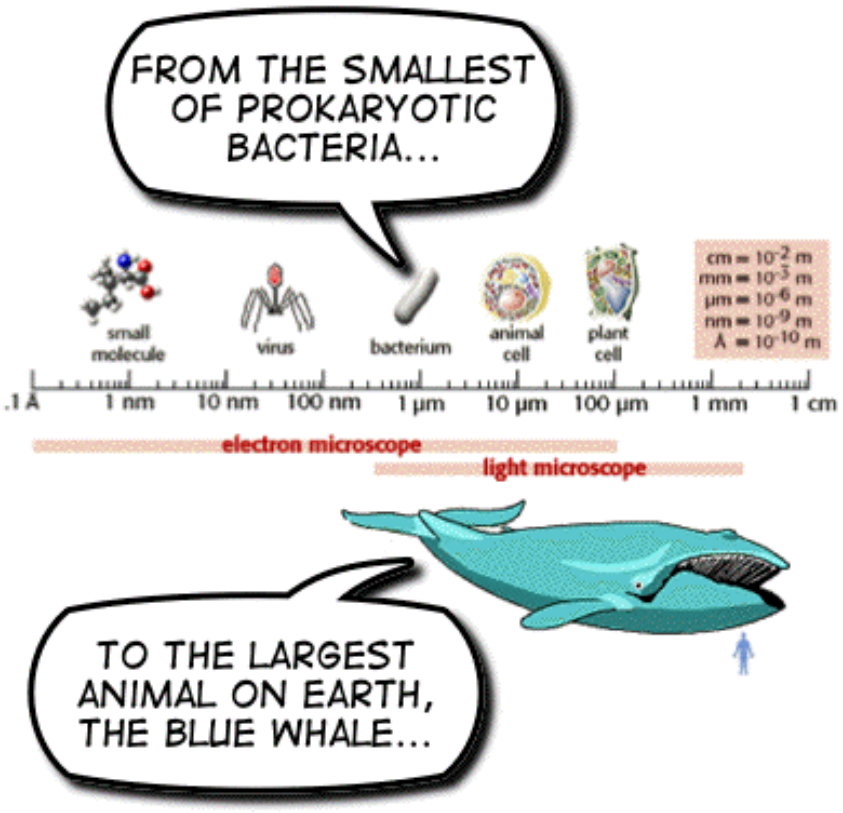
Nature of Man



Types of Environment



“Life is a struggle of an immense number of organisms and humans, weighing next to nothing, for a small amount of matter & energy.”

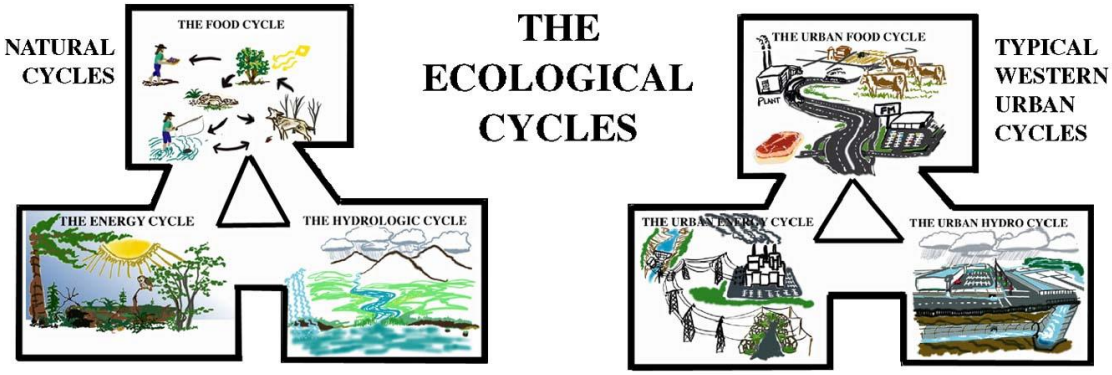


Introduction
to
Environmental Science

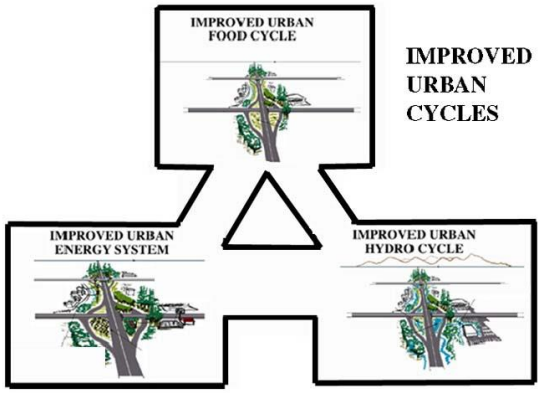
What Is Environmental Science?

Environmental science is the field of science that studies the interactions of the physical, chemical, and biological components of the environment and also the relationships and effects of these components with the organisms in the environment.

Goals of Environmental Science

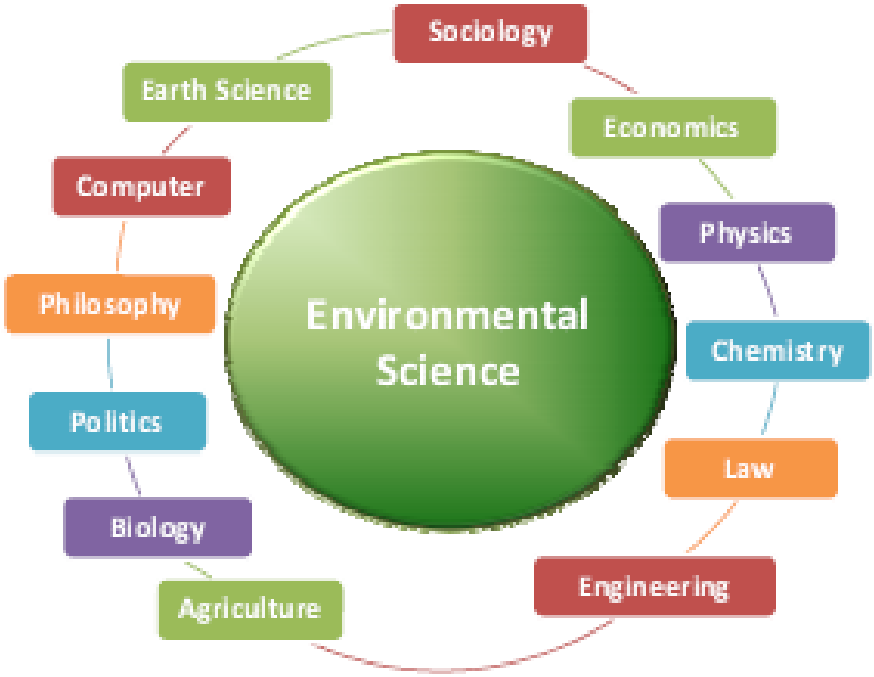


- to learn how the natural world works,
- to understand how we as humans interact with the environment,
- to determine how we affect the environment and finding ways to deal with these effects on the environment.



Interdisciplinary Field

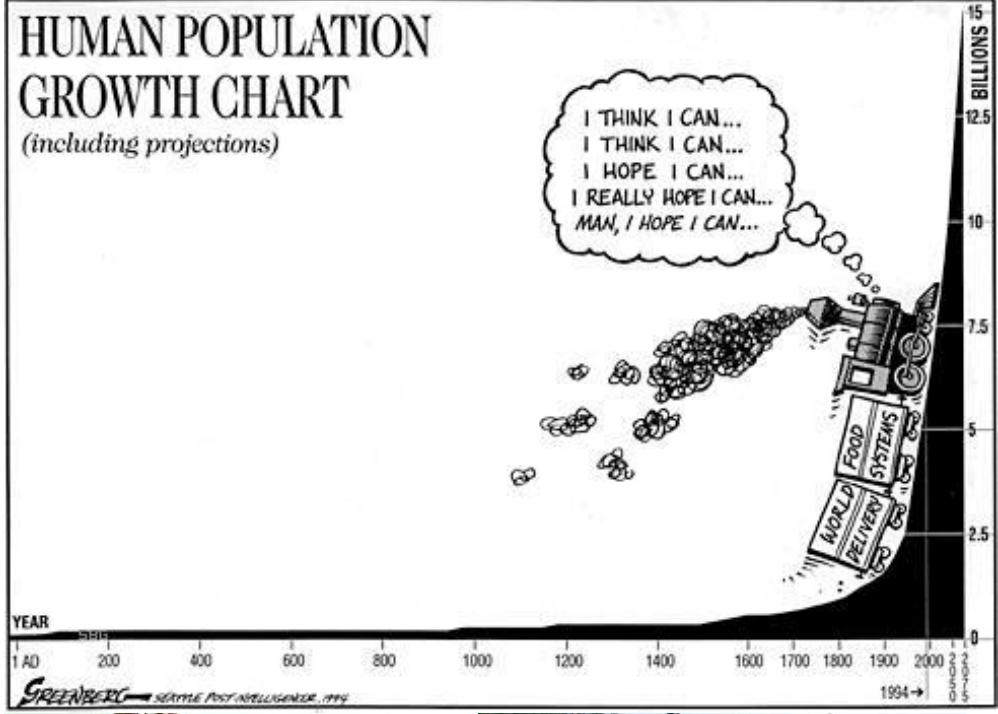
- Environmental science is also referred to as an **interdisciplinary** field because it incorporates information and ideas from multiple disciplines.



- By combining aspects of the natural sciences, social sciences, and the humanities, the field of environmental science can cover more concepts and also examine problems and topics from many different points of view.

- The large change is the dramatic increase in the number of humans on earth.
- For most of human history, the population has been less than a million people, but the current population has skyrocketed to over seven billion people.

- Due to this increase in the human population, there has also been an increase in pressure on the natural resources and ecosystem services that we rely on for survival.



Natural resources

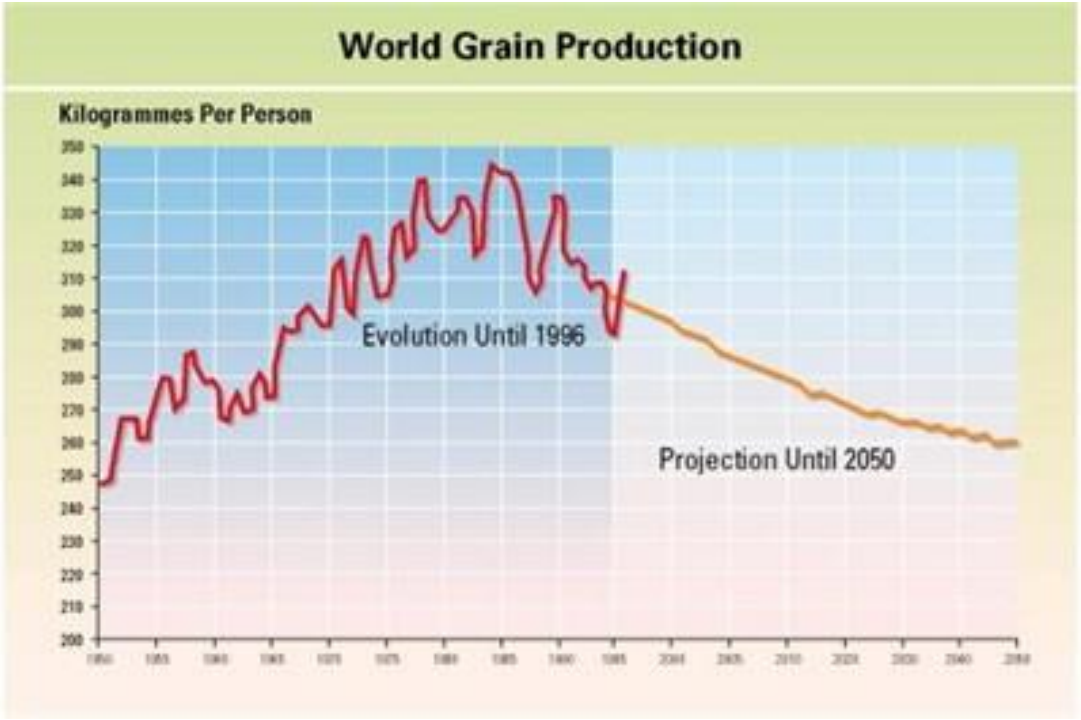
- include a variety of substances and energy sources that we take from the environment and use.
- Natural resources can be divided into;

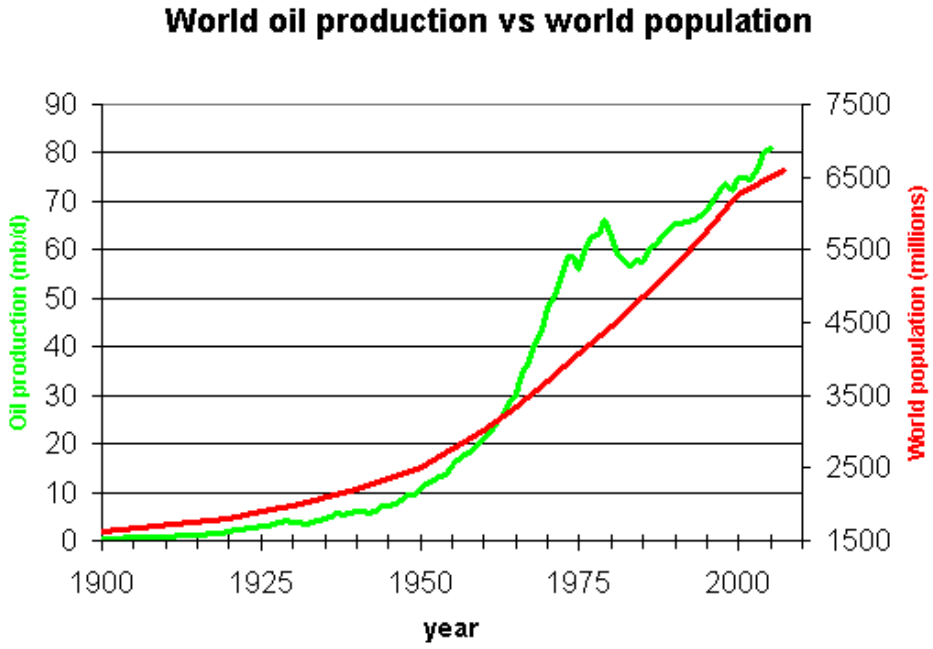
- **Renewable natural resources** are substances that can be replenished over a period of time.
- **Nonrenewable natural resources** are substances that are in finite supply and will run out.
- **Perpetual resources** are forms of naturally recurring energy beyond human management,

  such as energy from the sun, wind, falling water, tides.

Natural resources

- Renewable natural resources can be replenished, when they are used too rapidly, they cannot be replenished fast enough to meet human demand.
- Even worse, when nonrenewable natural resources are used too rapidly, they become closer to running out completely and being gone forever.





- Resources are considered **renewable** if they can be replenished within a relatively short period of time.

- Renewable resources are **replaced naturally or through human-assisted actions within a relatively short amount of time**, such as a human lifetime.

- For example, plants, such as trees, can be replanted indefinitely

- **Plants** are harvested as food crops, as trees for wood and fiber, or for horticultural purposes.
- **Animals** can be kept as pets and used as livestock, or the hides of some animals can be used to make leather for goods.

- **Non-renewable resources exist on Earth in limited amounts**, e.g., fossil fuels (coal, oil, natural gas) and many minerals (e.g., iron, gold, and bauxite, the source of aluminum).

- Fossil fuels are non-renewable natural resources because they take millions of years to form.

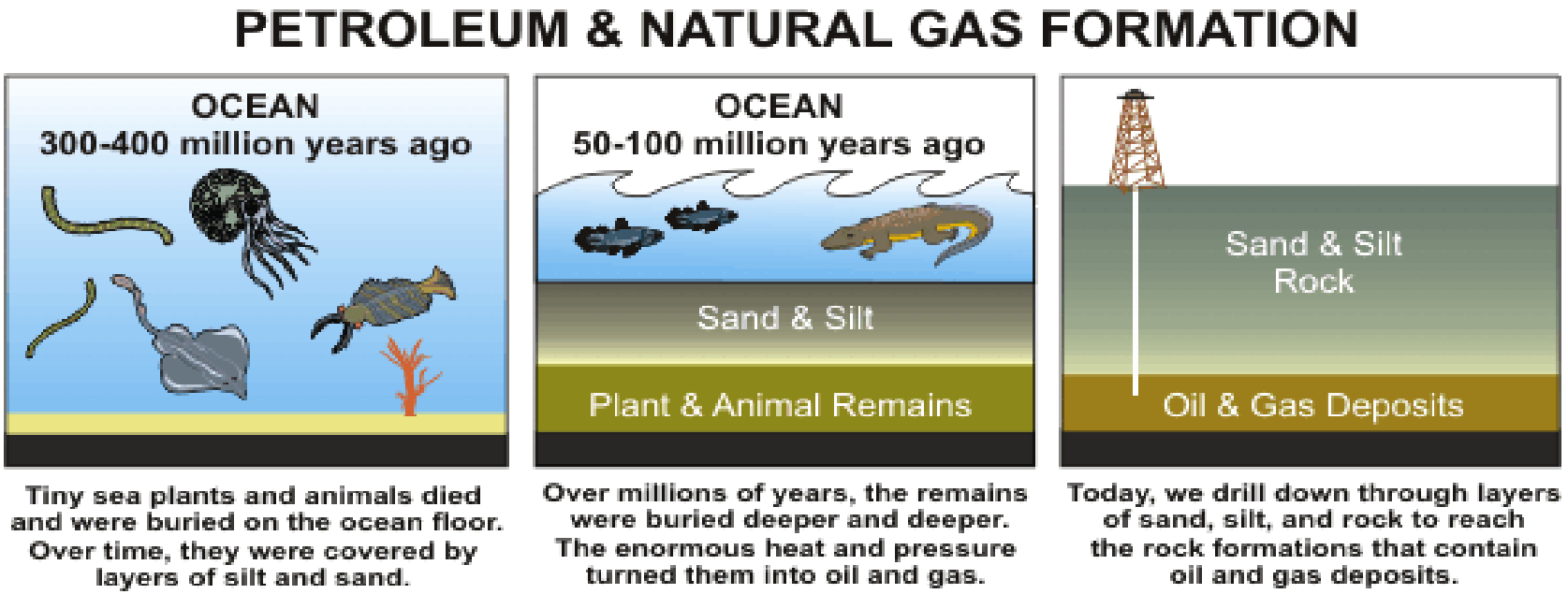
- Most minerals are also non-renewable resources.

- **Fossil fuels** include oil, coal, and natural gas. Oil or petroleum is drilled and extracted from the Earth.

- The resulting crude oil is refined into hundreds of petroleum products including fuel for cars.



- Crude oil, coal and gas are **fossil fuels**. They were **formed** over millions of years, from the remains of dead organisms.
- Coal was **formed** from dead plant material.
- Crude oil and gas were **formed** from dead marine organisms.



Minerals such as aluminum, iron and silica are mined from the Earth, extracted and used as components in manufacturing products such as aluminum, steel and glass.






Ecosystem services

Ecosystem services are the direct and indirect contributions of **ecosystems** to human wellbeing.

They support directly or indirectly our survival and quality of life.

Ecosystem services can be categorized in three main types:

Ecosystem services

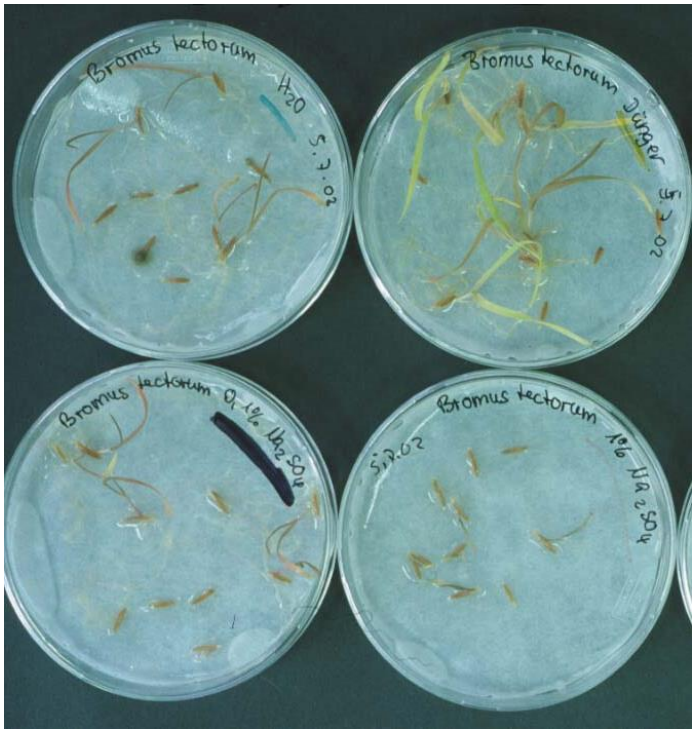
- **Provisioning services** are the products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources and medicines.
- **Regulating services** are defined as the benefits obtained from the regulation of ecosystem processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination or pest control.
- **Cultural services** include non-material benefits that people obtain from ecosystems such as spiritual enrichment, intellectual development, recreation and aesthetic values.

What is Science?

Science refers to the body of knowledge itself, of the type that can be rationally explained and reliably applied

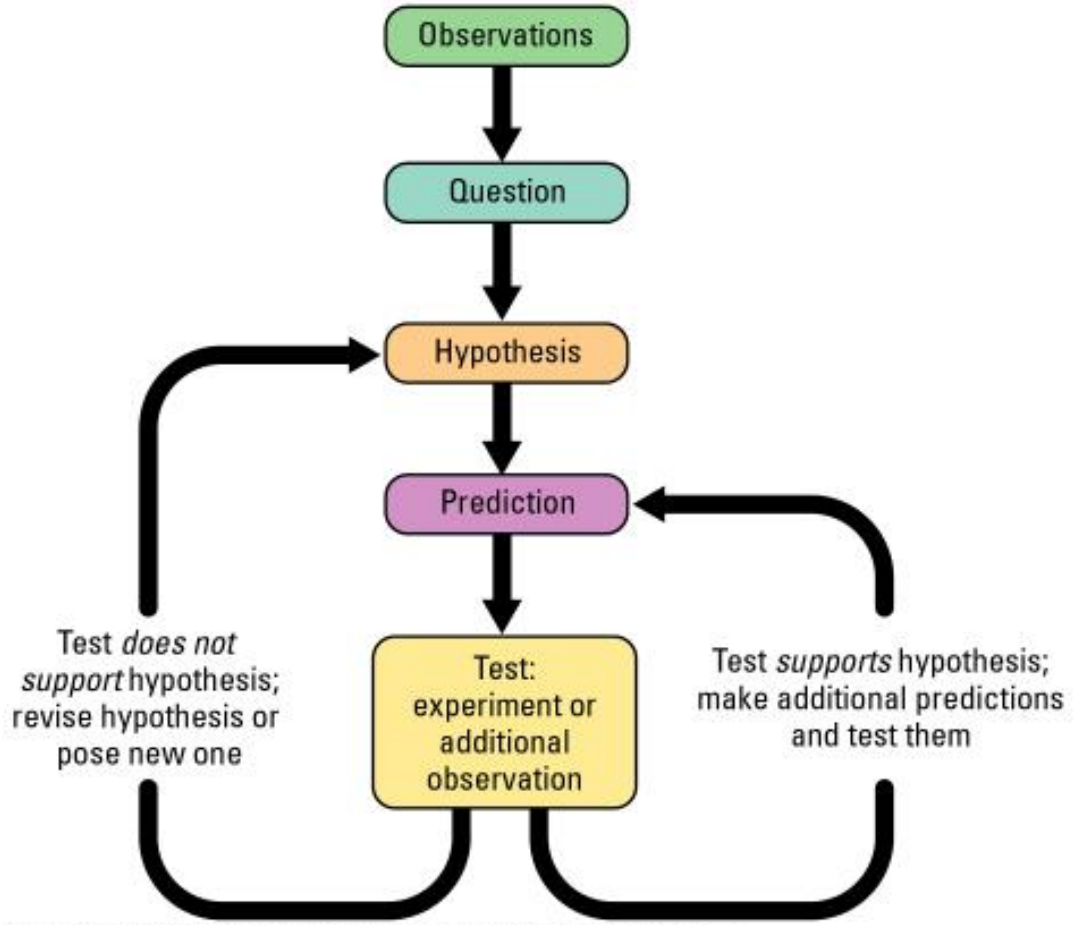
Descriptive Science

Experimental Science



The Scientific Method

- **Scientific method**, is a structured technique used to test ideas and potential answers to scientific questions.



The Process of Scientific Evaluation

- Scientific evaluation is used to solve environmental problems. Main steps of this process are;
- Scientific assessment
- environmental risk assessment,
- public engagement,
- political action,
- long-term environmental management.