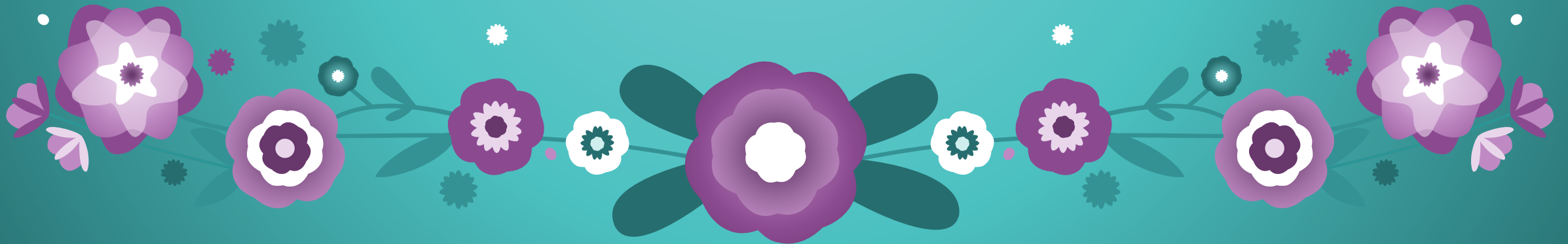


Environmental Studies

FYBCOM



Environment and Ecosystem

Meaning and Definition:

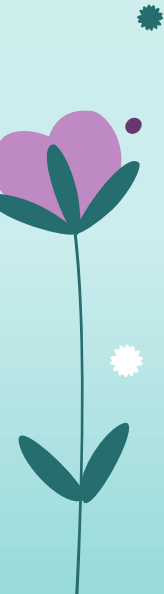
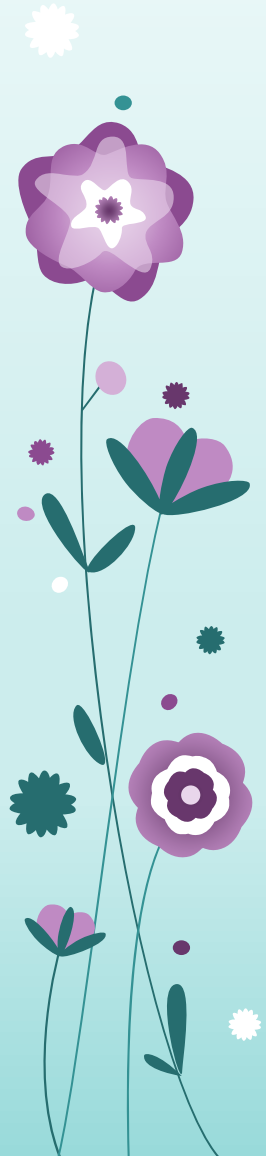
- The term environment has been derived from a French word “Environia” means to surround. It refers to both abiotic (physical or non-living) and biotic (living) environment. The word environment means surroundings, in which organisms live. Environment and the organisms are two dynamic and complex component of nature. Environment regulates the life of the organisms including human beings. Human beings interact with the environment more vigorously than other living beings. Ordinarily environment refers to the materials and forces that surrounds the living organism.
1. According to P. Gisbert “Environment is anything immediately surrounding an object and exerting a direct influence on it.”
 2. According to E. J. Ross “Environment is an external force which influences us.”

Components of Environment:

- Environment mainly consists of atmosphere, hydrosphere, lithosphere and biosphere. But it can be roughly divided into two types such as (a) Micro environment and (b) Macro environment. It can also be divided into two other types such as (c) Physical and (d) biotic environment.
- (a) Micro environment refers to the immediate local surrounding of the organism.
- (b) Macro environment refers to all the physical and biotic conditions that surround the organism externally.
- (c) Physical environment refers to all abiotic factors or conditions like temperature, light, rainfall, soil, minerals etc. It comprises of atmosphere, lithosphere and hydrosphere.
- (d) Biotic environment includes all biotic factors or living forms like plants, animals, Micro-organisms.

Components of Environment

- Environment
 - **Natural (physical)**
 - **Abiotic**
 - * Location
 - * Relief
 - * Geology
 - * climate
 - * Energy
 - **Biotic**
 - * Soils
 - * Plants
 - * Animal
 - * Human begins
 - **Cultural (Man-Made)**
 - * Social- cultural
 - * Economic
 - * Political
 - * Psychological

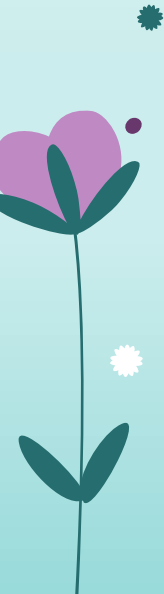
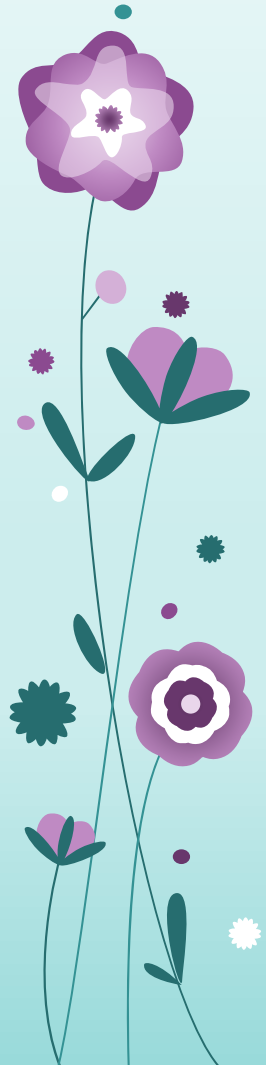


Abiotic

- **Location:** Location of a place is a very vital components of environment. It is abiotic and natural. It also refers to site, situation and the position of the environment on the surface of the earth. There are Absolute(Mumbai 18 degree North and 73 degree North) and Relative location (close to prime location – near to so and so Restaurant)
- **Relief:** The nature of ups and downs of the earth surface. Mountain, plateau and plains are the basic relief feature playing very vital role in the development of farming, laying of transport line and in the domestication of animals
- **Geology:** It is composition of underlying rocks in a region. Rocks contain certain economic minerals and hence such area are attractive for mining activities.

Cont....

- **Climate:** Climate of a place/region is the most dominant component of natural /physical environment. It refers to the general condition of the atmospheres- the air that surrounds us.
- **Energy:** Energy received from the sun also forms a very important component of natural environment. In our solar system, the sun has a central and dominating position.

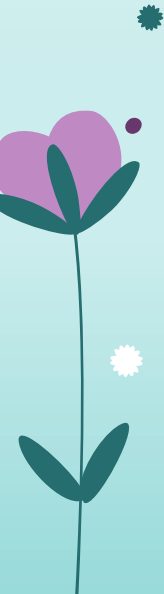
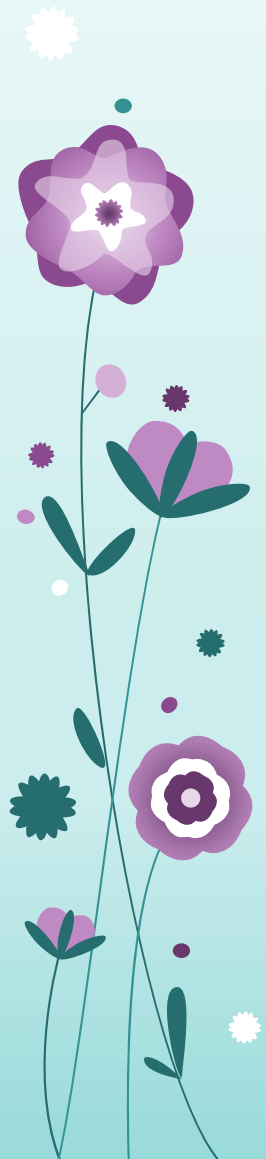


Biotic

- **Soils:** Soil is partly living and partly non-living component of the environment. It occurs as a thin layer, of loose sediments over land surface, eg – residual soil, drifted or alluvial soils etc.
- **Plants:** The natural vegetation occurs on the land in the form of trees, bushes, grasses and climbers etc. It grows under the suitable environmental conditions such as the sunlight, water-supply and soil-cover
- **Animals:** Animal kingdom including man constitutes another biotic component of natural environment.
 - **Herbivores-** they feed on plant species (primary producers) eg- rabbit, insects
 - **Carnivores-** they feed on herbivores and other carnivores eg- frog, snake
 - **Omnivores-** they feed on both plants and animals. Eg- humans
 - **Detritivores-** they feed on parts of dead organisms, waste of living organisms etc. Eg earthworms, ants.

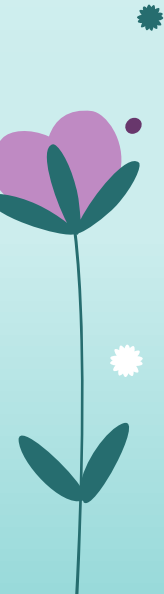
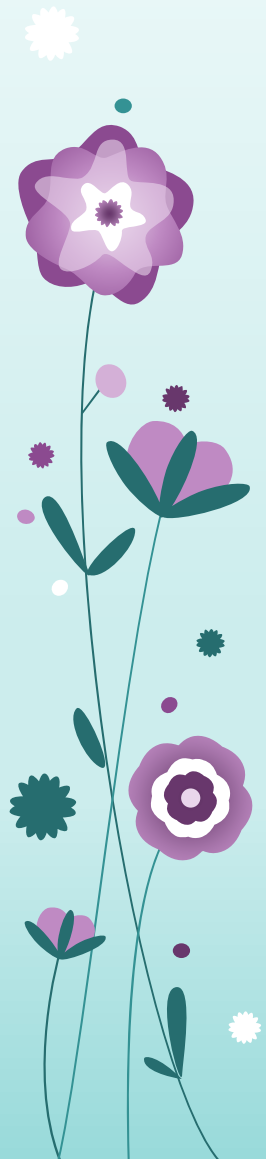
Cultural (Man-made)

- Socio- cultural: It is a typical man made environment. It develops as a consequence of human traits like religion, type of political set up and ethnic character of the population. Economic and commercial utilization of different resources is also related to religious practices.
- Economic: Economic environment develops as a result of economic activities developed by man viz. farming, mining, grazing , fishing, manufacturing and trade. Each of these activities generate their own environment through resource utilization.



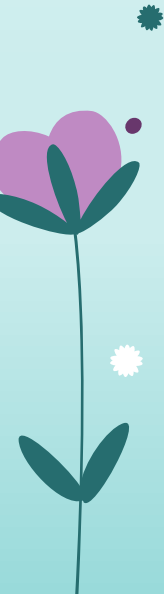
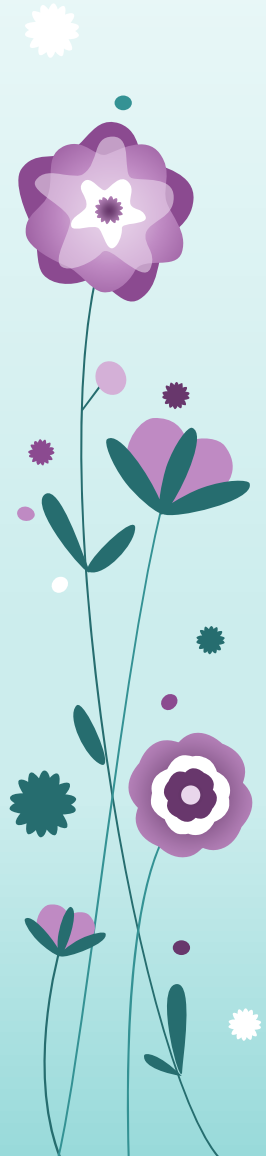
Cont..

- Political: Political Environment is the state, government and its institutions and legislations and the public and private stakeholders who operate and interact with or influence the system. The political atmosphere should be good and very stable for a firm to operate successfully. Political Environment forms the basis of business environment in a country.
- Psychological: Psychological environment deals with the perception and experiences related to any environmental setting. Some environment may be stimulating and exciting for us, while others may be dull and boring. Psychological environment is more often used in the organizational context..



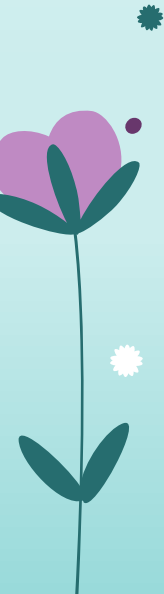
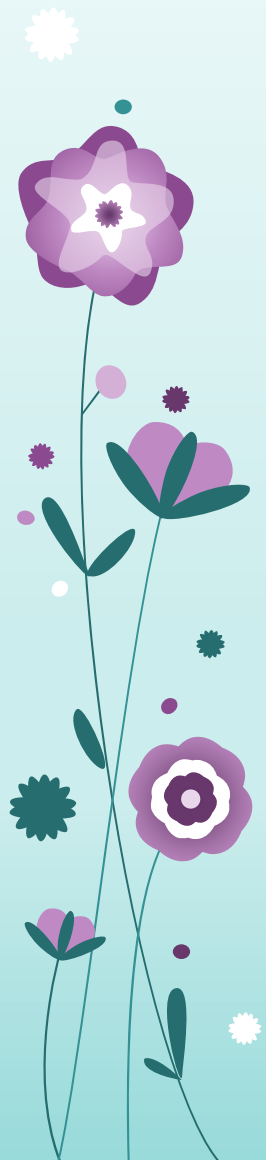
Structure of the Environment

1. Crust
2. Mantle
3. Outer Core
4. Inner core

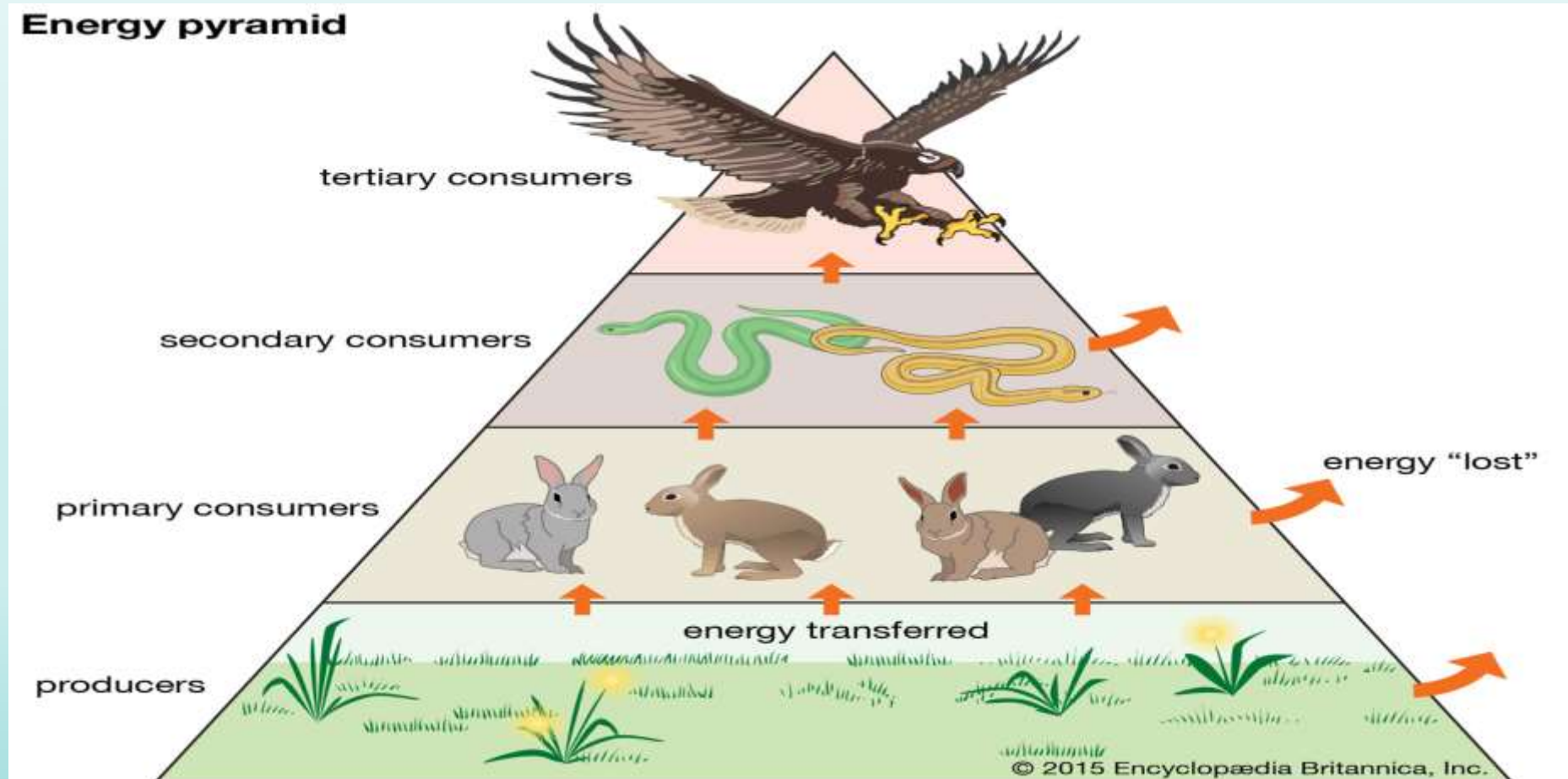


Physical System

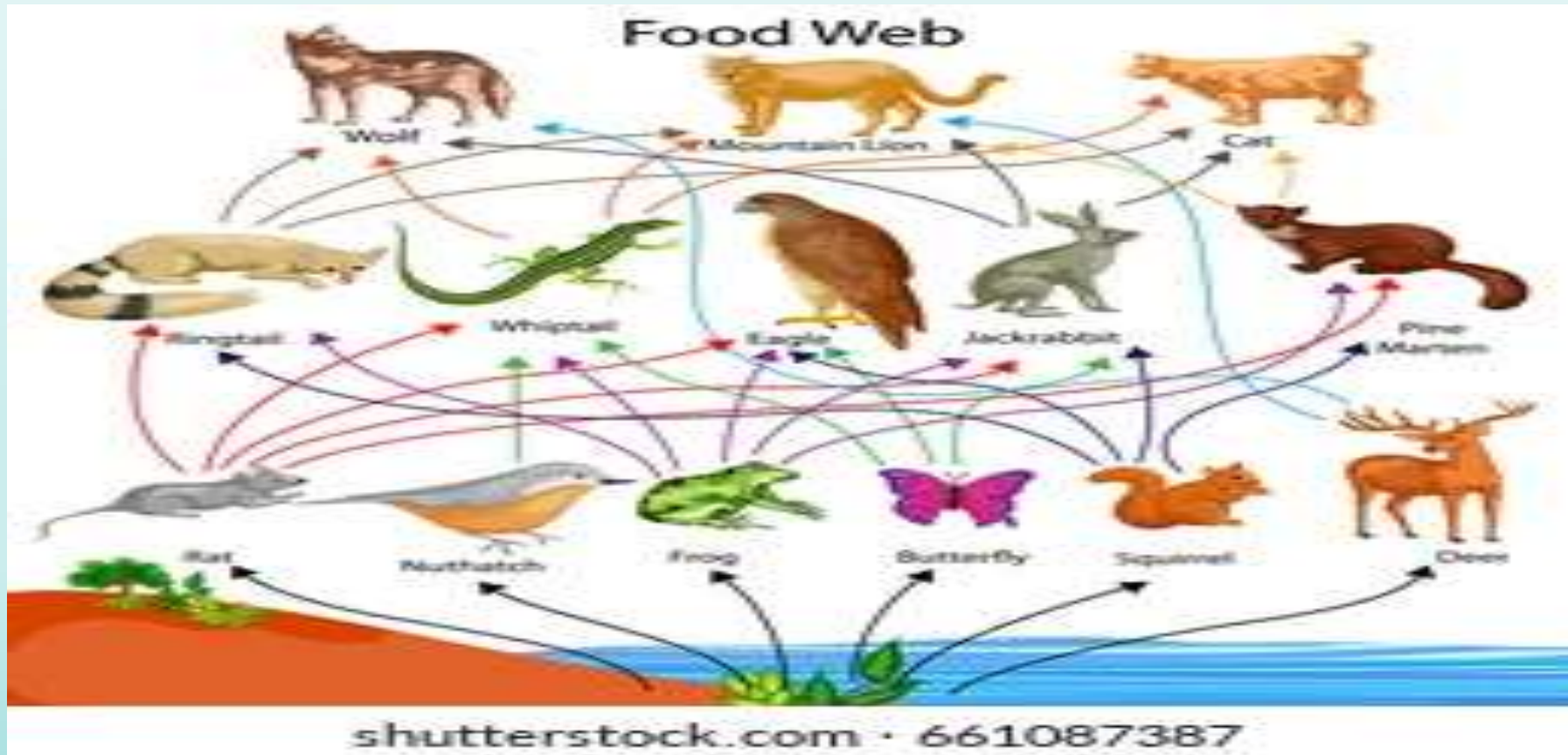
1. **Lithosphere : (Lithos= Rock)**
2. **Hydrosphere : (Hydro = Water)**
3. **Atmosphere : (Air)**
4. **Biosphere: (It is composed of all living organisms)**



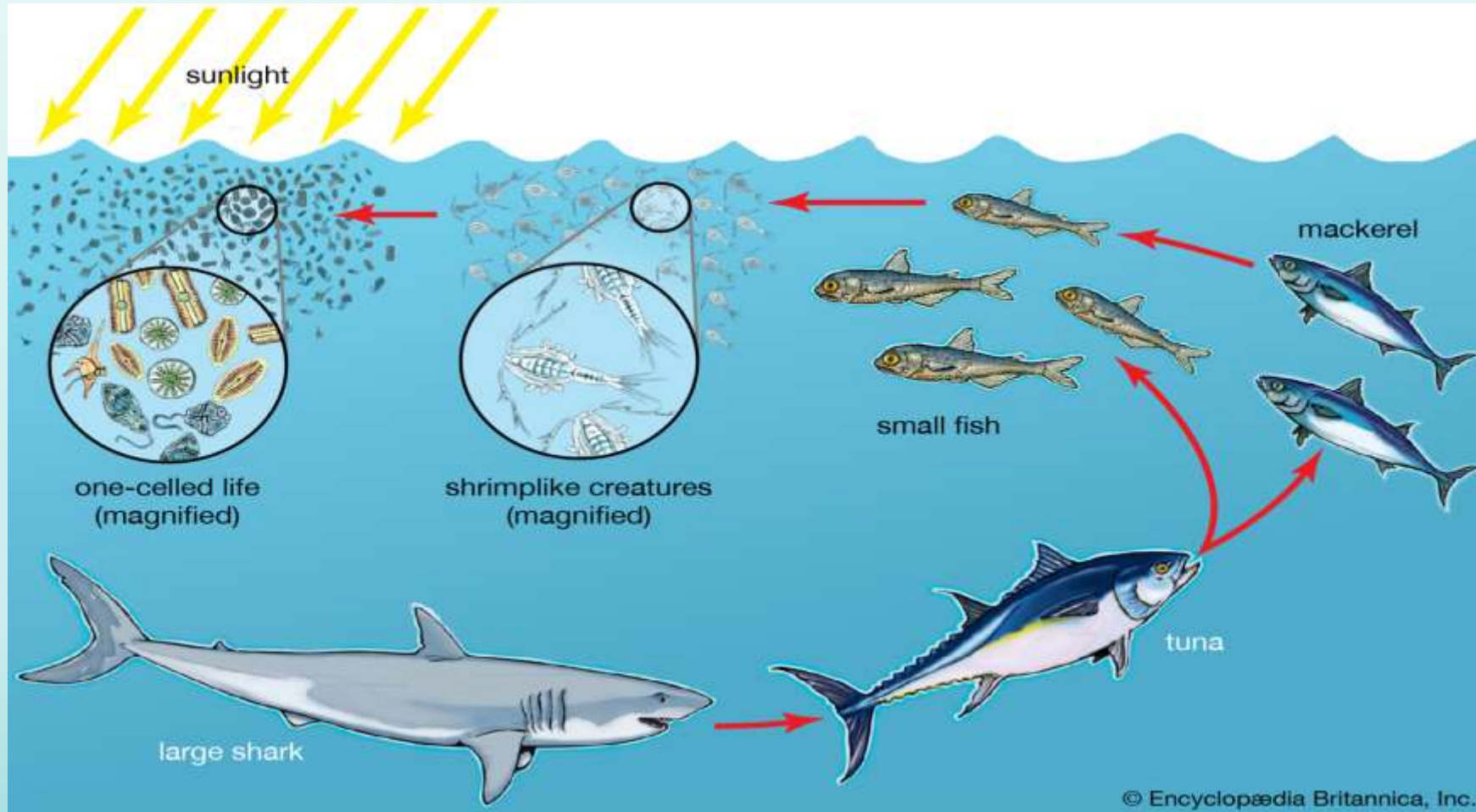
Energy Pyramid



Food Web

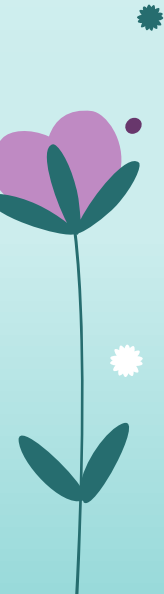
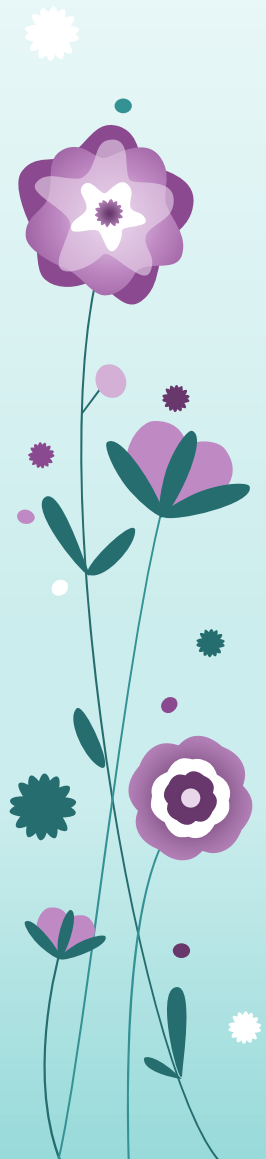


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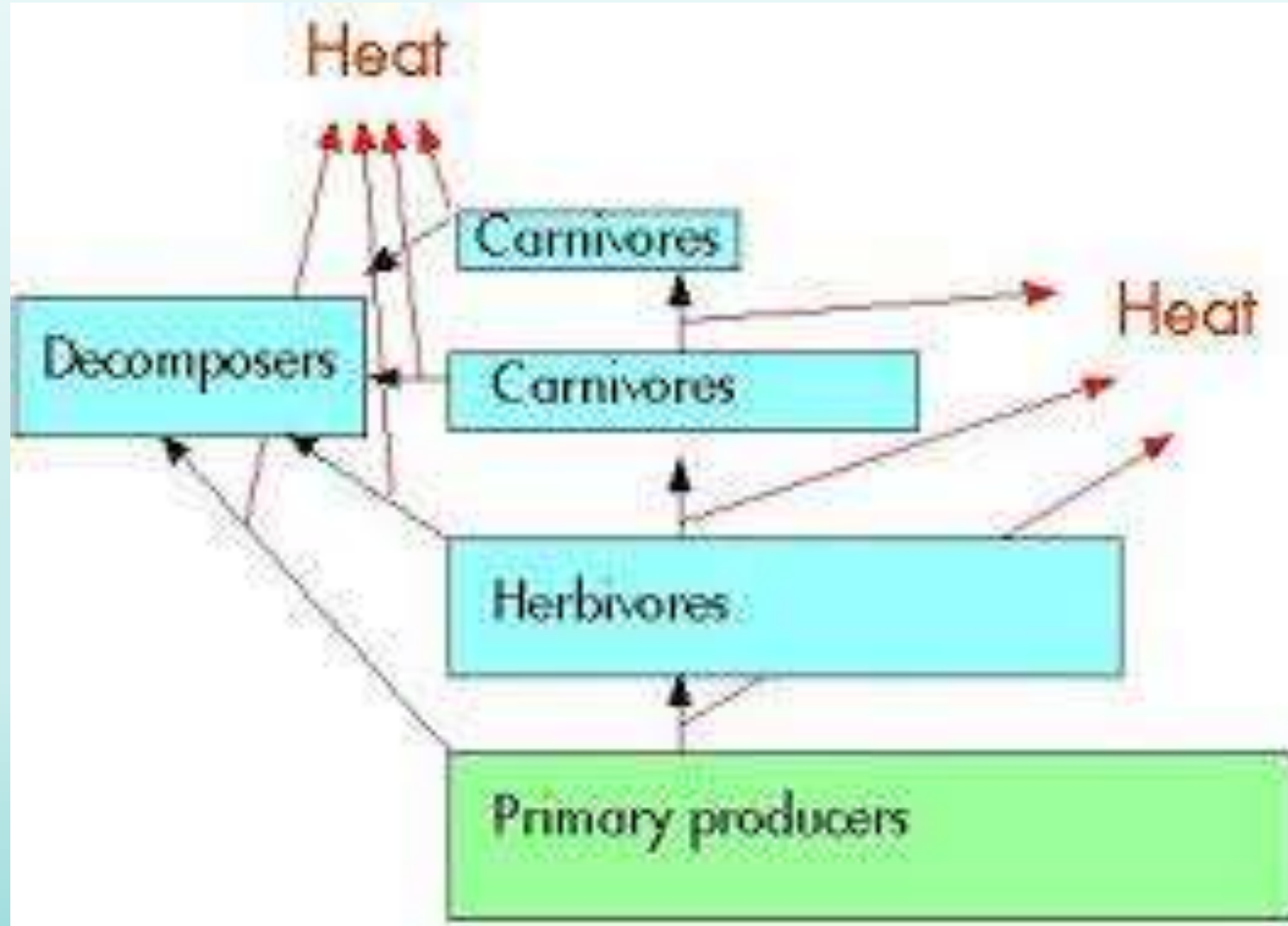


Functioning of Environment

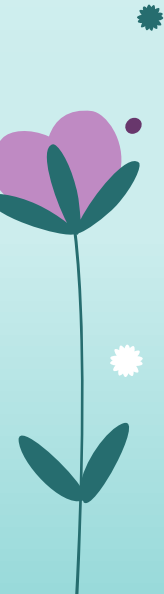
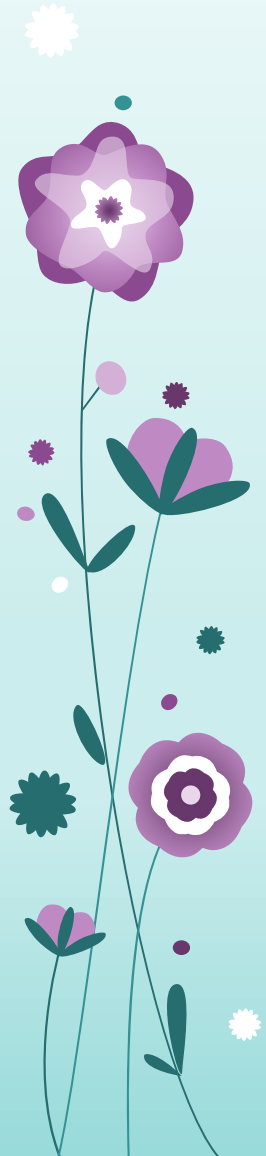
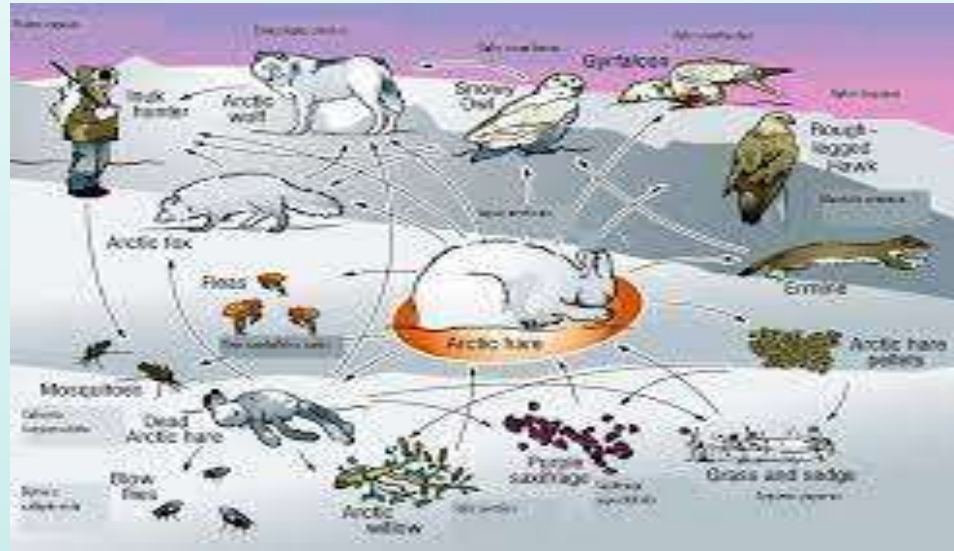
1. Environment
2. Population
3. Communities
4. Ecosystem
5. Biosphere
6. Ecotones
7. Biome
8. Natural Selection
9. Adaptation
10. Competition
11. Niche
12. Symbiosis
13. Parasitism
14. Mutualism
15. commensalism



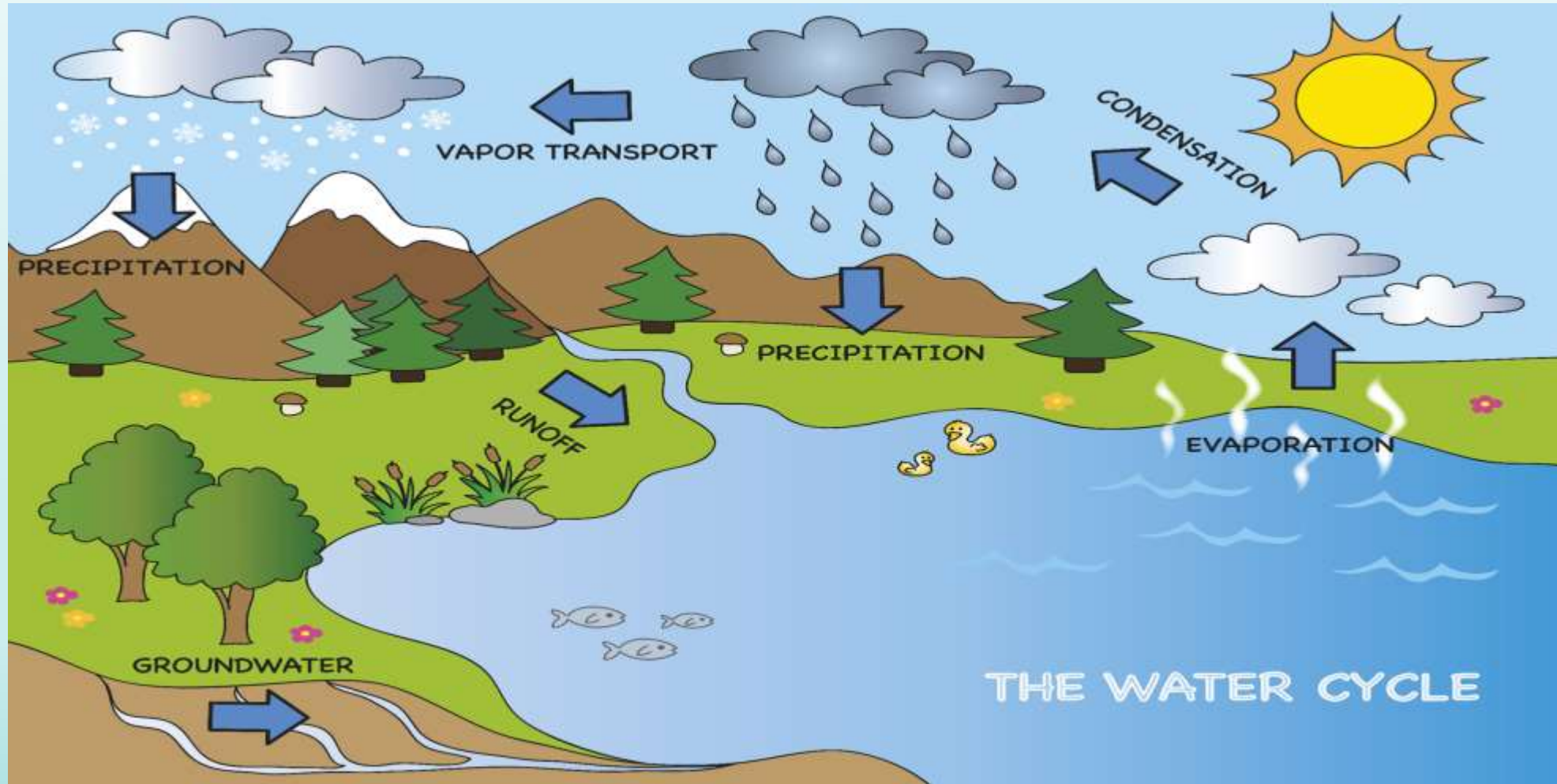
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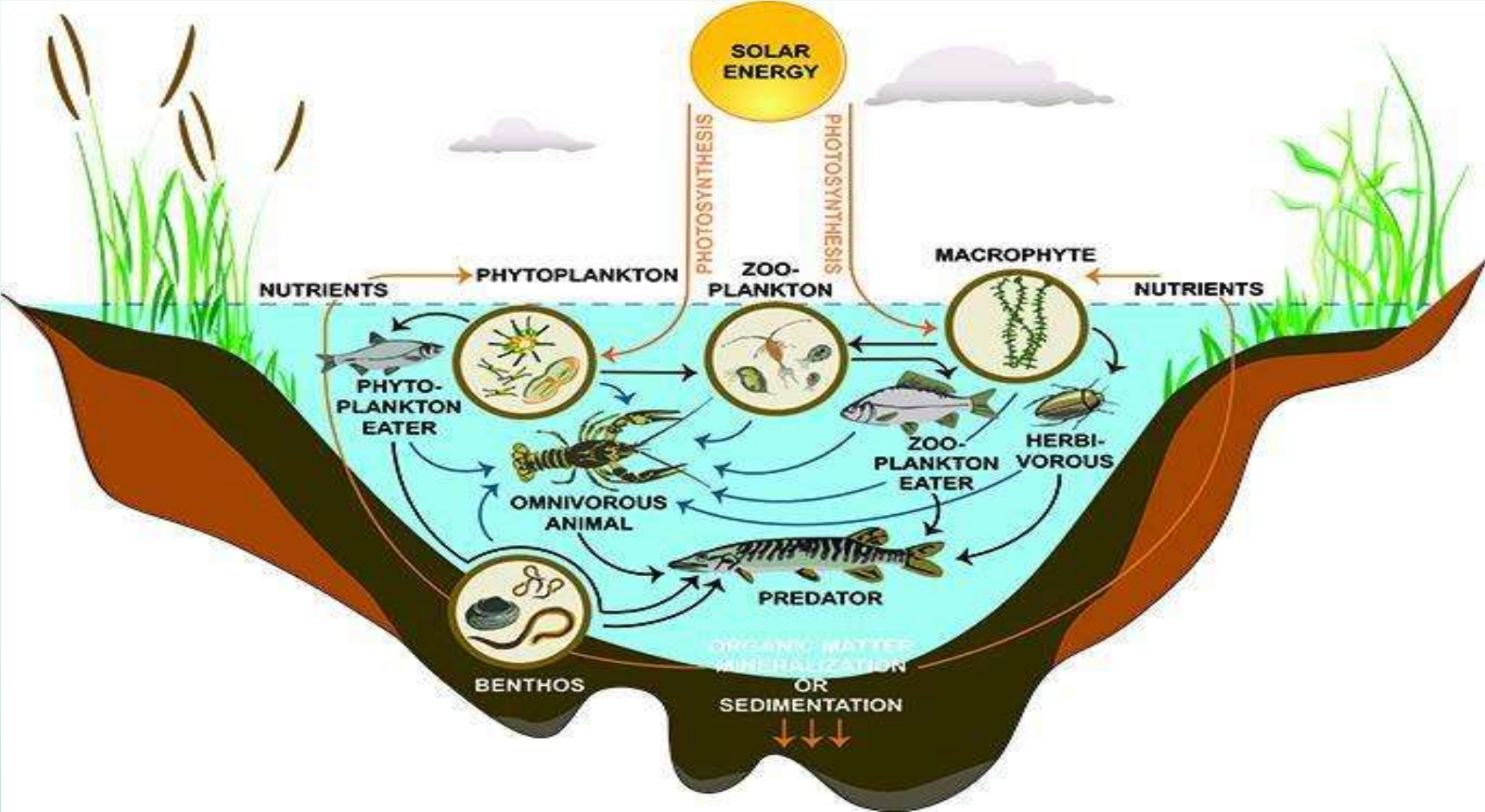
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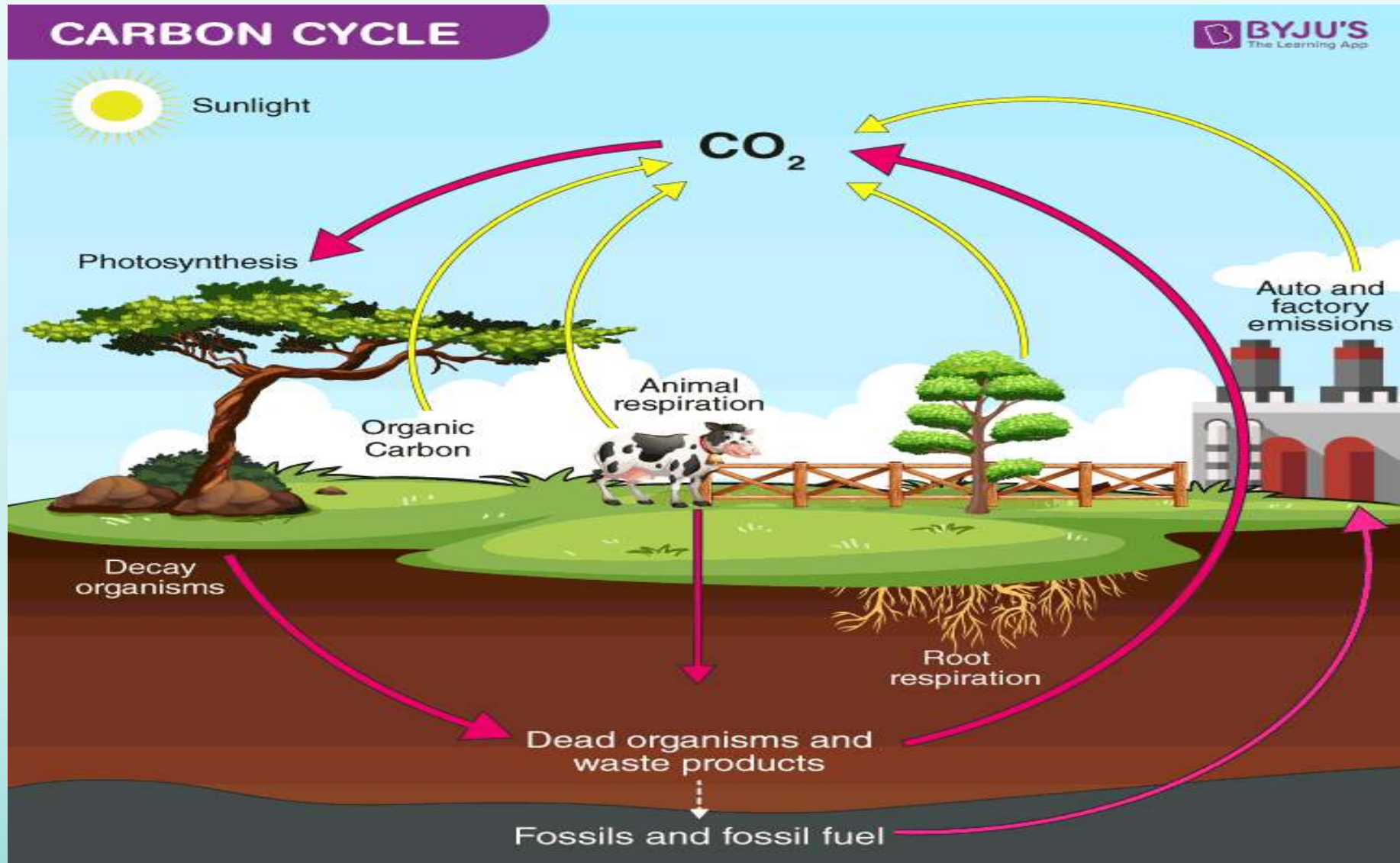
Water cycle



Lake Eco-system



Carbon Cycle



Chapter 2

Natural Resources and Sustainable Development

Resources

1. Natural - Non-Renewable, Renewable,
2. Human - Population, Capital

Non- Renewable

e.g. Fossil fuels (Natural Oil), coal, Metal, Minerals

Renewable

e.g. Crops, water, wind power, tides, sun.



Human- Population, Capital

Population- Technology, Politics

Capital - Buildings, transport



Detail information on Resources

1. Natural (Physical)

i. Land

Large Population

ii. Water

Small Population

iii. Air

iii. Literate

iv. Plants

Illiterate

v. Animals

Skilled

vi. unskilled

i. Land- a. Minerals

b. Soils, c. Landscape

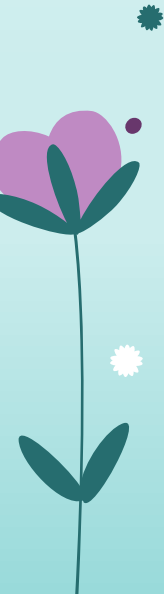
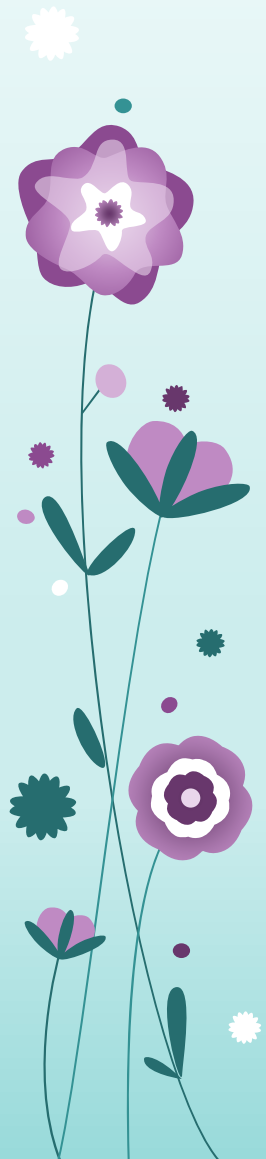
2. Humans

i.

ii.

iv.

v.



Types of Organic Interaction influencing Natural selection

1. Predation (lion is Predator and deer is prey)

2. Competition

a. **Intraspecific competition** (takes place between members of the same species for food, sunlight, site for home or partners etc)

b. **Interspecific competition** (It occurs between organisms of different species for limited resources required for survival)

Symbiotic Relationship in Environment

There are 3 types of symbiosis

1. Parasitism (Dog and insect on his body)

2. Mutualism (Hippo and birds on his body)

3. Commensalism (Bird build nest on tree and tree is not harmed nor helped)

Man and Environment Relationship

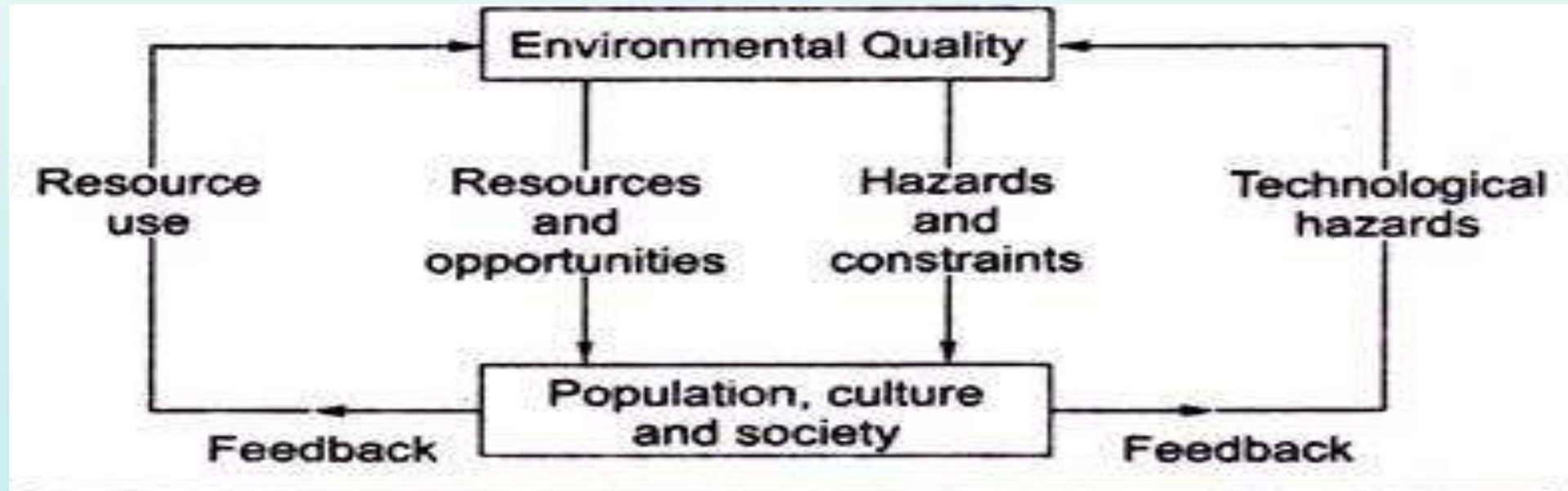


Fig. 1.3: Two-way relationship between people and environment. The relationship between people and their environment is symbiotic, involving both resources (opportunities) and hazards (constraints)

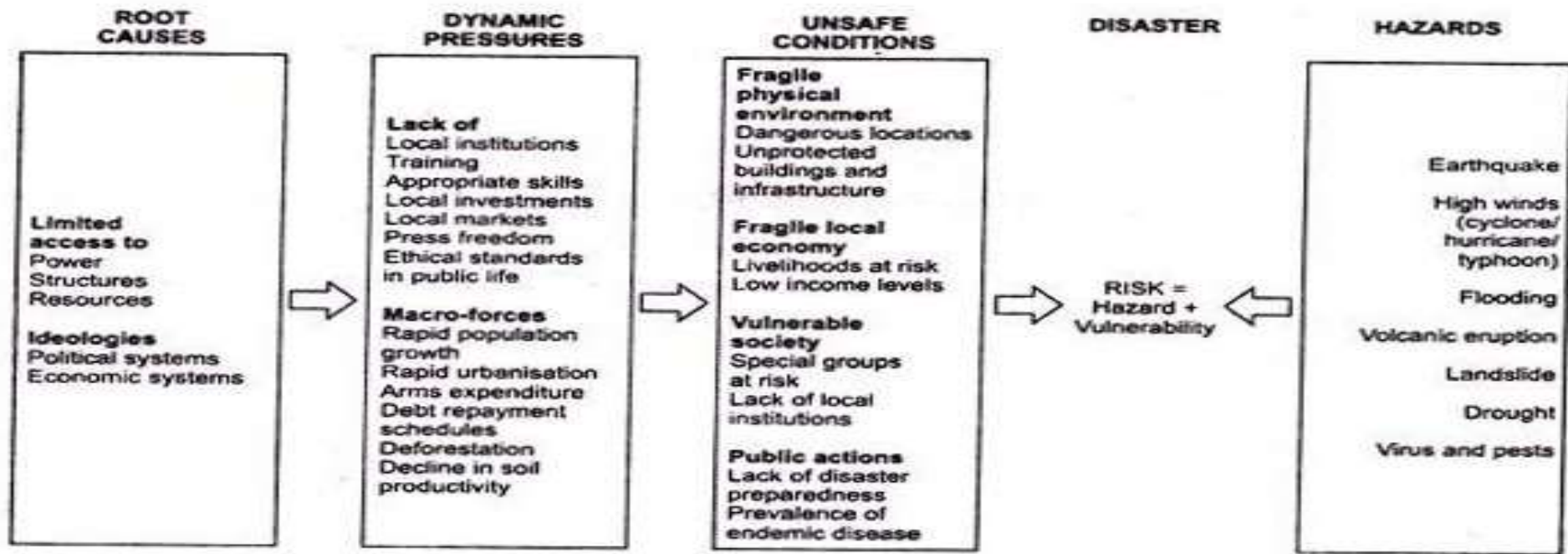


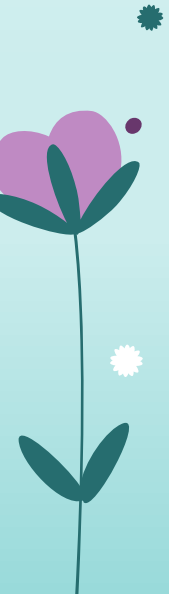
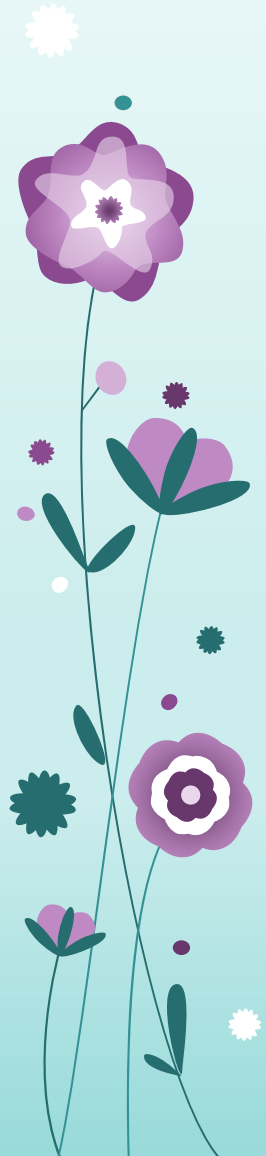
Fig. 1.4: Progression of human vulnerability to disasters. Disasters are caused by hazard events, but the impacts on people are strongly influenced by degree of vulnerability. This, in turn, is a product of unsafe conditions, which result from some important root causes and are compounded by dynamic pressures

Renewable Resources
Non-renewable Resources

Renewable Resources

Non-renewable Resources

Depletion



Factors influencing Resource Utilization

1. Size of Deposit
2. Accessibility
3. Demand
4. Transportation Facilities
5. Stage of Industrial Development
6. Technology
7. Cheap labour Supply

Resource Conservation

Conservation is the protection, Preservation and Rational use of all the resources on the environment.

Method of Conservation: The Golden rule of conservation is the 3 R formula of Reduce, Reuse and Recycle

