

**SCIENCE FORM 2**  
**CHAPTER 3 BIODIVERSITY**

**BIODIVERSITY**

- refers to wide variety of living organisms on Earth
- exist due to wide variety of habitats and climates
- Different living organisms have different characteristics to adapt and survive in their habitats. Eg pond, desert, polar region, soil, etc
- habitat with a larger number of species of living organism have a higher level of biodiversity. Eg. Level of biodiversity in a rainforest is higher than of a desert

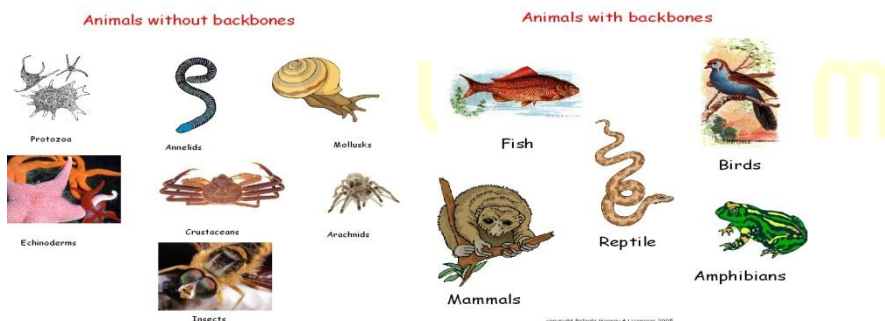
**Classification of living organism**

- sorting of living organisms into groups
- living organisms with the same characteristics placed together in the same group
- two major group:
  - I. Animals
  - II. Plants

**Classification of Animals**

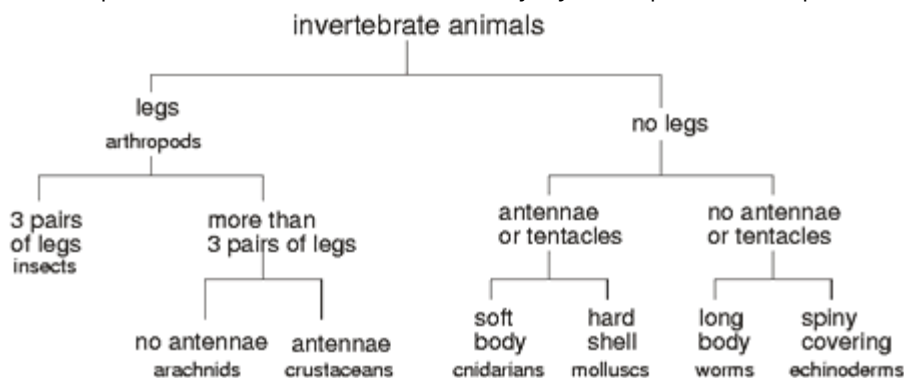
- can be classified into two main groups
  - I. Invertebrates – animals without backbones/ do not have bony skeleton
  - II. Vertebrates – animals with backbones/ have skeletons made of bone and cartilage

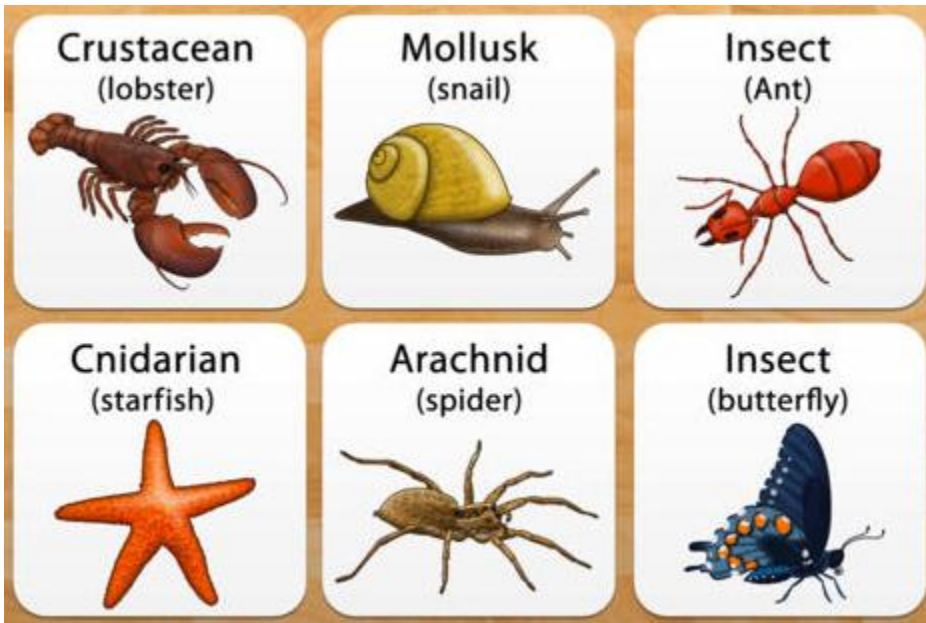
**Invertebrates      Vertebrates**



**Invertebrates**

- some have hard outer coverings, some have internal skeleton made and some have soft bodies
- example ants, worms, snail, starfish, jellyfish, spider, centipede and crabs

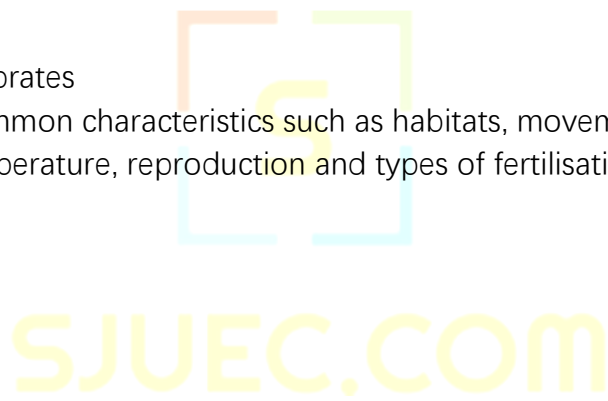




### Vertebrates

- usually larger than invertebrates
- classification based on common characteristics such as habitats, movement, body covering, breathing organs, body temperature, reproduction and types of fertilisation
- classified into five groups:

- I. Fish
- II. Amphibian
- III. Reptiles
- IV. Bird
- V. Mammal

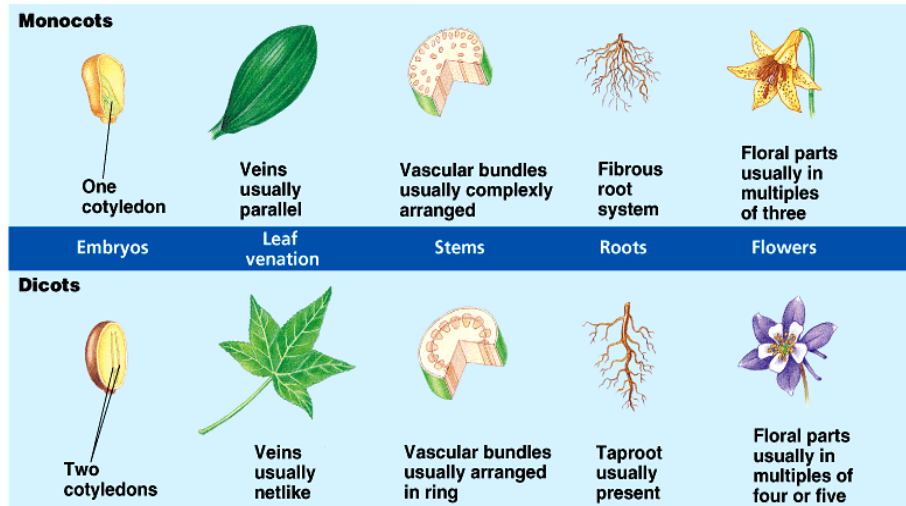


Classes of vertebrates	Characteristics
Fish (Pisces)	<ul style="list-style-type: none"> <li>- Live in fresh water or sea water</li> <li>- Body is covered with slimy scales</li> <li>- Fins and tails are used to swim and balance the body</li> <li>- Breathe through gills</li> <li>- Cold-blooded</li> <li>- Lay eggs</li> </ul>
Amphibians	<ul style="list-style-type: none"> <li>- Can live on land and in the water</li> <li>- Have moist and exposed skin</li> <li>- Cold-blooded</li> <li>- Lay eggs</li> <li>- Have webs</li> <li>- Do not have external ears</li> </ul>
Reptiles	<ul style="list-style-type: none"> <li>- Have dry and scaly skin</li> <li>- Most lay eggs</li> <li>- Cold-blooded</li> <li>- Breathe through lungs</li> <li>- Have one type of teeth</li> <li>- Teeth are sharp and cone-shaped</li> </ul>
Birds	<ul style="list-style-type: none"> <li>- Live on land</li> <li>- Covered with feather</li> <li>- Feathers are waterproof and can trap heat to keep the body warm</li> <li>- Can swim</li> <li>- Can fly</li> <li>- Lay eggs</li> <li>- Warm-blooded</li> <li>- Breathe through lungs</li> <li>- Do not have teeth but use beak to peck</li> <li>- Hard scaly legs and sharp claws</li> </ul>
Mammals	<ul style="list-style-type: none"> <li>- Most live on land</li> <li>- Cover with hair or fur</li> <li>- Skin has sweat glands</li> <li>- Warm blooded</li> <li>- Breathe through lungs</li> </ul>

### Classification of Plants

- can be classified into two main groups:

- I. Flowering plants –
  - a. reproduced by seed which developed from flowers
  - b. further divide into Monocotyledons and Dicotyledons
- II. Non- flowering plants –
  - a. plants without flower
  - b. eg mosses, ferns, conifers, gingko and cycads



Copyright © Pearson Education, Inc., publishing as Benjamin Cummings.

### Importance of maintaining biodiversity

- it is the sources of food to human and living organism
- it is the sources of clothing, building, materials and medicine
- plant helps to maintain oxygen and carbon dioxide level
- some plants and animals are habitats for other living organism
- assist in flood control by absorbing, storing and slowly releasing the water
- provide coastal protection from storms and soil erosion
- forest and wetlands filter water
- various flora and fauna boost to our tourism industry

### Ways to protect and maintain biodiversity

- I. Protect the endangered species under Protection of Wildlife Act 1972 which prohibits the killing or trading of these species
- II. Protect habitats in the form of national and state parks, wildlife reserves, wildlife sanctuaries marine parks. All commercial logging and fishing are banned in protected area
- III. Support ecotourism. Study and admire the biodiversity that exists
- IV. Carry out breeding programmes
- V. Carry out environmental education and awareness