

Biology

The study of organisms (living things)

Some traits of living things:

- Made of one or more cells
- Have genes (DNA) that contain instructions for all life processes
- Have metabolism (chemical reactions)
- Have a life cycle (grow and develop by taking in matter and energy, and then reproduction)

Figs 1.2, 1.5, and 1.7

The 3 domains of life

The 3 largest groupings of life forms

Each species belongs to one of the three domains of life:

Bacteria Domain

Archaea Domain

Eukarya Domain

- All species in the bacteria and archaea domains are prokaryotic cells; All are unicellular
- All species in the eukarya domain have eukaryotic cells; most are multicellular

– The eukarya domain is subdivided into four kingdoms:

Plant Kingdom

Fungi Kingdom

Animal Kingdom

Protista Kingdom

Figs 1.14 and 1.15

The hierarchy of biological complexity

The different levels of organization of life on earth

- Ecosystems are composed of organisms
- Organisms are composed of organ systems
- Organ systems are composed of organs
- Organs are composed of tissues
- Tissues are composed of cells
- Cells are composed of organelles
- Organelles are composed of molecules
- Molecules are composed of atoms

Fig 1.3