Subject: Biology

Class: SS1

Topic: Classification II – Kingdoms Fungi, Plantae, and Animalia

Duration: 40 Minutes

Term: First Term

Introduction (5 minutes):

Previously, we studied **Kingdom Monera** and **Kingdom Protista**, which contain mostly simple and microscopic organisms.

In this lesson, we will discuss more **complex and multicellular organisms**, classified into:

1. **Kingdom Fungi**
2. **Kingdom Plantae**
3. **Kingdom Animalia**

These are the **higher kingdoms** because they contain most of the large living things seen in nature.

Lesson Content (25 minutes):

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1. Kingdom Fungi

Definition:

Fungi are **eukaryotic organisms** that are usually **multicellular** (except for yeast which is unicellular).
They are **heterotrophic** organisms that feed by **absorbing nutrients** from dead or living organisms (saprophytes or parasites).

Characteristics of Fungi:

Feature	Details
Cell type	Eukaryotic (has true nucleus and organelles)
Number of cells	Mostly multicellular (e.g., mushrooms), some unicellular (e.g., yeast)
Cell wall	Present, made of **chitin** (not cellulose like plants)
Mode of nutrition	Heterotrophic – absorb food from environment (saprophytic or parasitic)
Reproduction	Both **asexual** (spores, budding) and **sexual** reproduction
Habitat	Mostly in moist, warm, and dark places

Examples of Fungi:

- **Mushrooms** (*Agaricus*)
- **Moulds** (*Rhizopus*, *Mucor*)
- **Yeast** (*Saccharomyces*)
- **Toadstools**

Importance of Fungi:

- **Decomposers**: Break down dead plants and animals
- **Food production**: Yeast is used in baking and brewing
- **Medicine**: Some fungi produce antibiotics (e.g., *Penicillium* makes penicillin)
- **Diseases**: Some cause diseases like athlete's foot, ringworm

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2. Kingdom Plantae

Definition:

Plantae are **multicellular, eukaryotic, autotrophic organisms** that make their own food by **photosynthesis** using **chlorophyll**.

Characteristics of Plantae:

Feature	Details
Cell type	Eukaryotic
Number of cells	Multicellular
Cell wall	Present, made of **cellulose**
Mode of nutrition	**Autotrophic** (photosynthesis)
Reproduction	Both **sexual** and **asexual reproduction**
Movement	Plants do not move from place to place
Habitat	Found in soil, water, land, everywhere where sunlight is available

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Examples of Plantae:

- **Flowering plants** (*Hibiscus*, *Mango*, *Maize*)
- **Non-flowering plants** (*Moss*, *Fern*, *Pine*)
- **Algae** (in some classifications, algae are considered plants if multicellular)

Importance of Plants:

- **Produce oxygen** during photosynthesis
- **Source of food** for humans and animals
- **Source of medicine, timber, and raw materials**
- **Maintain ecological balance** (absorbing carbon dioxide)

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3. Kingdom Animalia

Definition:

Animalia includes **multicellular, eukaryotic, heterotrophic organisms** that **feed on other organisms**.
They **do not have cell walls** and most of them are capable of **movement**.

Characteristics of Animalia:

Feature	Details
Cell type	Eukaryotic
Number of cells	Multicellular
Cell wall	**Absent**
Mode of nutrition	**Heterotrophic** (ingest food)
Movement	Most animals can move actively
Reproduction	Mostly **sexual reproduction**
Nervous system	Present in higher animals for coordination

Examples of Animalia:

Invertebrates (no backbone):

- **Insects** (*Grasshopper*, *Butterfly*)
- **Worms** (*Earthworm*)
- **Snails**

Vertebrates (with backbone):

- **Fish** (*Tilapia*, *Catfish*)
- **Birds** (*Pigeon*, *Eagle*)
- **Mammals** (*Goat*, *Man*)
- **Amphibians** (*Frog*)
- **Reptiles** (*Lizard*, *Snake*)

Importance of Animals:

- **Food source** (meat, milk, eggs)
- **Pollination** of plants (bees, butterflies)
- **Transport and labor** (horses, donkeys)
- **Companionship** (pets like dogs, cats)
- **Maintain balance in the ecosystem**

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4. Differences Among Fungi, Plantae, and Animalia

Feature	Fungi	Plantae	Animalia
Nutrition	Heterotrophic (absorb food)	Autotrophic (photosynthesis)	Heterotrophic (ingest food)
Cell wall	Present (chitin)	Present (cellulose)	Absent
Movement	No movement	No movement	Can move
Examples	Mushroom, Yeast	Mango, Maize	Goat, Man