SCIENCE

TERM 3 | LECTURE BY: sir teddy and miss claire

LT 1: EXTINCTION AND SYSTEMS

1 six kingdom system and three domain systems

1.1: importance of classification

Classification is important because it helps scientists **organize living things, identify similarities and differences,** understand **evolutionary relationships**, and avoid confusion in **naming organisms.**

Memory Aid: "**Classify to Clarify**."

1.2: three domain system

The Three-Domain System groups all living things into three large categories called domains:

Domain Bacteria

- Unicellular
- No nucleus (prokaryotic)
- Has cell wall
- Reproduces asexually

Domain Archaea

- Unicellular
- No nucleus (prokaryotic)
- Has cell wall (different from bacteria)
- Reproduces asexually

Domain Eukarya

- Has a nucleus (eukaryotic)
- Can be unicellular or multicellular
- Includes Protists, Fungi, Plants, and Animals

Memory Aid: BAE – Bacteria, Archaea, Eukarya

1.3: six kingdom system of classification

The Six-Kingdom System classifies living things based on cell type, structure, how they get food, and how they reproduce.

Memory Aid: BAPFPA

Kingdom Bacteria

Meaning:

Bacteria are simple microscopic organisms found almost everywhere. Some are helpful while others cause disease.

Characteristics:

- Unicellular
- No nucleus or prokaryotic
- Has cell wall
- Reproduces asexually
- Some make their own food, others do not

Importance:

They help in decomposition and nutrient recycling.

Kingdom Archaea

Meaning:

Archaea are microscopic organisms similar to bacteria but different genetically. Many live in extreme environments.

Characteristics:

- Unicellular
- No nucleus or prokaryotic
- Has cell wall
- Reproduces asexually
- Some produce their own food

Importance:

They show how life can survive in extreme conditions

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Kingdom Protista

Meaning:
Protists are mostly microscopic organisms that do not belong to plants, animals, or fungi. Most live in water.

Characteristics:

- Mostly unicellular, some multicellular
- Has nucleus or eukaryotic
- Some have cell walls
- Reproduce sexually and asexually
- Some make their own food, others consume organisms

Importance:
They are important in aquatic food chains and oxygen production.

Kingdom Fungi

Meaning:
Fungi are organisms like mushrooms, molds, and yeast that absorb nutrients from other organisms.

Characteristics:

- Mostly multicellular
- Has nucleus or eukaryotic
- Has cell wall
- Reproduce sexually and asexually
- Cannot make their own food

Importance:
They act as decomposers in ecosystems.

Kingdom Plantae

Meaning:
Plants are multicellular organisms that make their own food through photosynthesis.

Characteristics:

- Multicellular
- Has nucleus or eukaryotic
- Has cell wall
- Reproduce sexually and asexually
- Make their own food

Importance:
They produce oxygen and are the main source of food in ecosystems.

Kingdom Animalia

Meaning:
Animals are multicellular organisms that depend on other organisms for food.

Characteristics:

- Multicellular
- Has nucleus or eukaryotic
- No cell wall
- Mostly reproduce sexually
- Cannot make their own food

Importance:
They help maintain balance in ecosystems.

2 why humans are classified under class mammalia and order primates

2.1: class mammalia

Humans belong to Class Mammalia because we have:

- Hair
- Mammary glands that produce milk
- **Endothermic** (warm-blooded)
- Live birth
- Placenta
- Vertebral column
- Three middle ear bones
- Specialized teeth

2.2: order primates

Primates are **mammals** that have:

- Opposable thumbs
- Forward-facing eyes
- Large brains
- Flexible shoulders
- Ability to grasp objects

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2.3: similarities and differences of humans and chimpanzees

Similarities:

- Both are **primates**
- Both have **opposable thumbs**
- Both have **large brains**
- About **98–99% similar DNA**
- Both are social and intelligent

Differences:

- Humans walk fully **upright**, chimpanzees mostly walk on knuckles
- Humans have **larger brains**
- Humans have more developed **language and complex thinking**

3 species extinction and failure to adapt

Species extinction happens when all members of a species die and no individuals remain.

When there are **abrupt environmental changes** (like climate change, pollution, deforestation, natural disasters), species must **adapt**. If they cannot adapt fast enough, their population decreases and may eventually become extinct.

Key idea: **No adaptation = population decline = extinction**

4 threats to biodiversity and extinction

Biodiversity means the variety of living organisms in an area.

Threats to biodiversity include:

- ★ **Habitat destruction**
- ★ **Pollution**
- ★ **Climate change**
- ★ **Overhunting or overfishing**
- ★ **Invasive species**

When biodiversity decreases, ecosystems become unstable, and more species are at risk of extinction.

Memory Aid: **HPCOI**
Habitat loss
Pollution
Climate change
Overexploitation
Invasive species

5 classification of philippine species

Extinct – No members of the species are alive.
Endangered – Very high risk of extinction in the near future.
Critically Endangered – Extremely high risk of extinction.
Vulnerable – Likely to become endangered if threats continue.

Most Philippine species disappear mainly because of **human activities** such as deforestation, illegal hunting, pollution, and land conversion.

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6 factors that limit carrying capacity

Carrying capacity is the maximum number of organisms an ecosystem can support.

Factors that limit carrying capacity:

- **Food availability**
- **Water supply**
- **Shelter or space**
- **Mates**
- Disease and competition

If these resources are limited, population growth slows down. If carrying capacity is at the maximum, competition increases

Memory Aid: **FWSM – Food, Water, Shelter, Mates**

7 population growth carrying capacity

- When a population is small, it grows **quickly**.
- As it gets closer to the carrying capacity, resources **become limited**, so **growth slows down.**
- This forms an S-shaped curve called logistic growth.

Key idea: More organisms = more competition = slower growth

8 primates and taxonomy

Primates are mammals with opposable thumbs, forward-facing eyes, and large brains. Examples include monkeys, apes, and humans.

Taxonomy is the science of **classifying and naming organisms**.

It helps scientists organize living things based on similarities and evolutionary relationships.

9 main reason philippine species disappear

The main reason Philippine species disappear is **human-induced activities**, especially:

- Deforestation
- Illegal wildlife trade
- Pollution
- Urbanization

Natural causes exist, but today, **human activities are the biggest reason** for species loss in the Philippines.

SUBTOPIC 1

SUBTOPIC 2