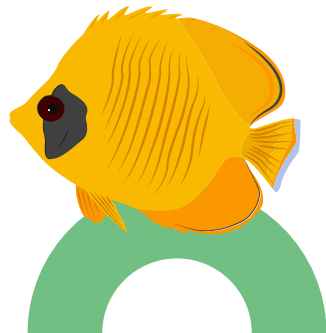
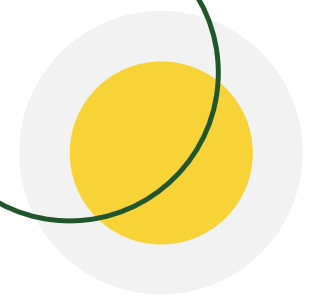


Groups of Vertebrates



Afaf and Mona

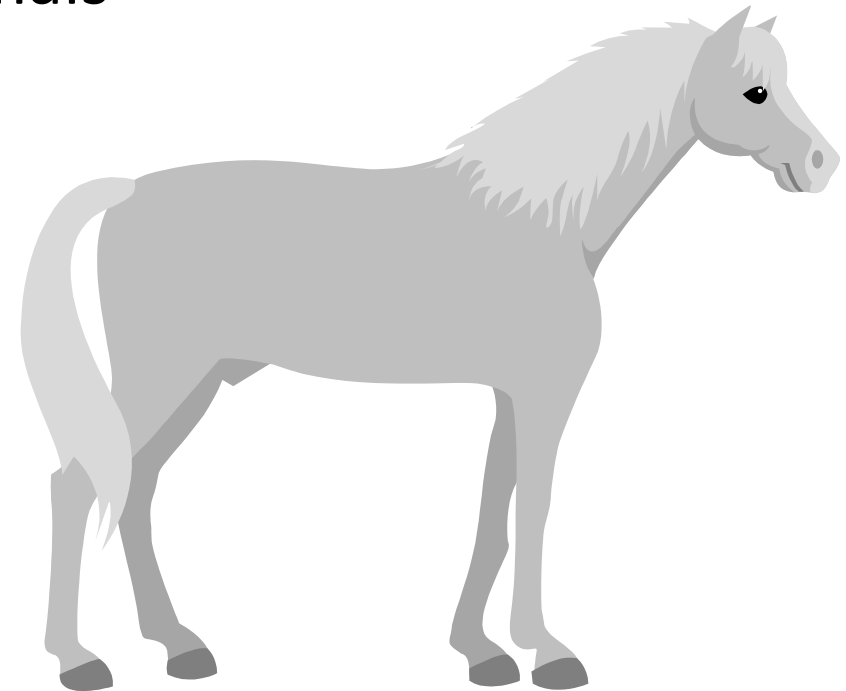




Lessons:

The unit encompasses four lessons :

- Lesson 1: Introduction to the module and Mammals
- Lesson 2: Fish
- Lesson 3: Birds
- Lesson 4: Reptiles/Amphibians



Unit Objectives

Students will be able to :

1. Foundational Knowledge:

Students will actively acquire knowledge. By the end of this unit, students will be able to identify and classify animals into the major groups of invertebrates based on their characteristics and explain the unique features and behaviors of each group.

2. Application:

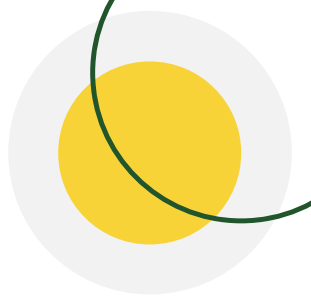
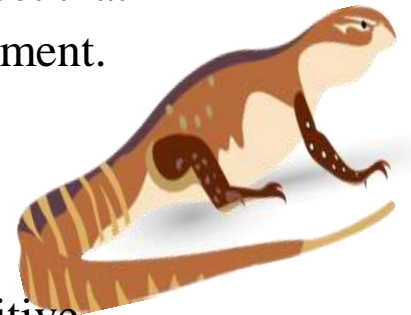
Using their knowledge of the major groups of animals, students will be able to identify and explain the unique characteristics of at least one animal from each group, and then design and present a creative project that demonstrates their understanding of how these adaptations help each animal survive in its environment.

3. Integration:

Students will learn how to apply the information they grasped in other lessons and disciplines.

4. Human Dimension:

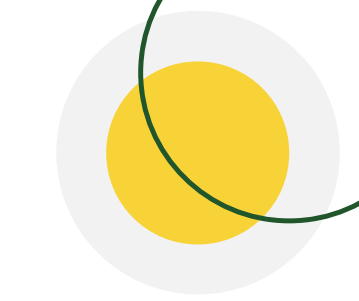
Through team-based learning, students will become effective at working collectively, will be sensitive, tolerant and able to listen to others as well. They will achieve consensus and will take responsibility for the information they gather, research, and acquire.

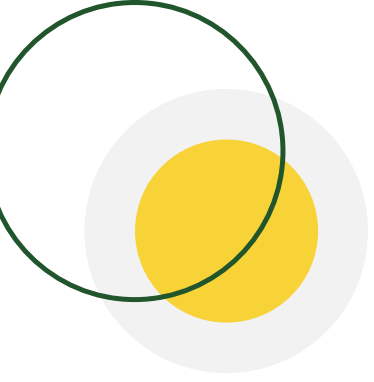


Learning Outcomes of the Unit

Students will be able to :

- Research the topics and create a mind map
- Write a report on their findings after watching a documentary or after paying a visit to the zoo.
- Identify the five groups of vertebrates: mammals, fish, birds, reptiles, and amphibians.
- Define the features of each group of vertebrates.
- Compare and contrast the different groups of vertebrates.
- Categorize animals based on their features.
- Design a final portfolio that comprises examples of animals of their choice.





Learning Outcomes of Lesson 1:

- Identify the five groups of vertebrates: mammals, fish, birds, reptiles, and amphibians.
- List the groups of vertebrates.
- Identify the features of mammals.
- Connect the features with related pictures.
- Analyze why whales and dolphins are classified as mammals.



Teaching Methodology

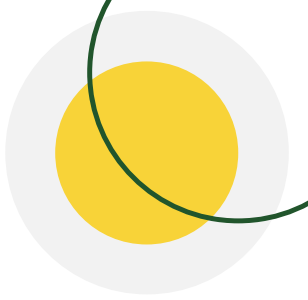
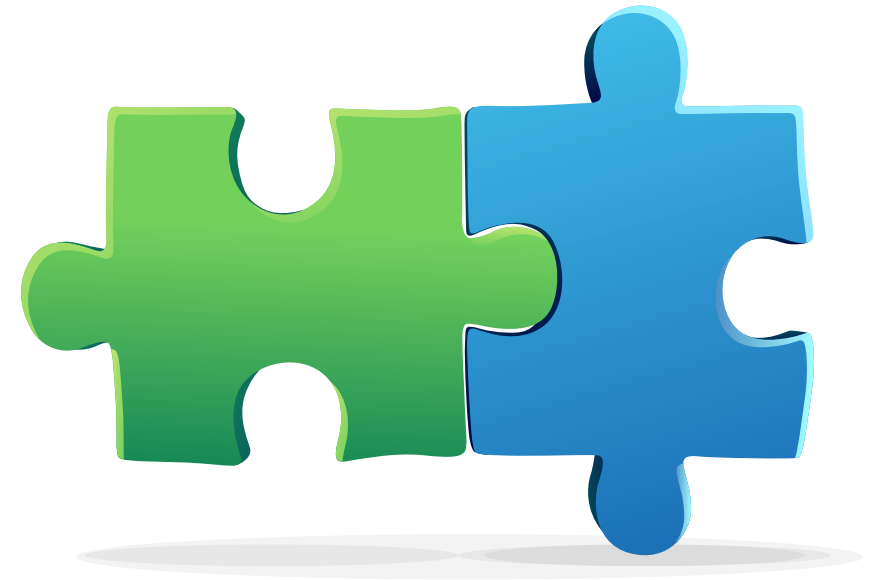
1. Integrate technology in the learning process e.g., PowerPoint presentations, videos to support the material and to make the learning process entertaining and get the students involved.
2. A Field Trip
3. Warm up activities to stimulate ideas and discussions
4. Simulations
5. Visual Aids
6. Student-centered learning / Interactive learning
7. Brainstorming to discover new ideas and thoughts.
8. Group discussions through integrating discussions on topics relevant to the topics, develop their critical thinking skills, exchange knowledge, and ensure their individual participation.
9. Group work for knowledge flow.
10. Class activities
11. Assignments/projects/ Portfolios as various assessment means.

Learning Theories

Theories applied through various activities

Behaviorism:

- Drilling
- Defining
- Employing rewards.



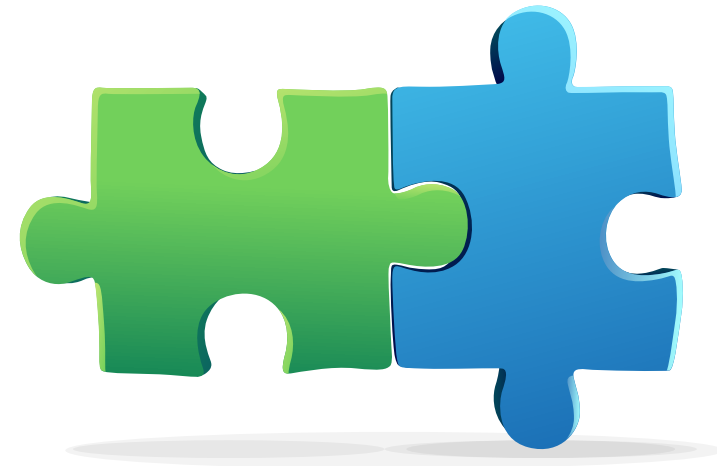
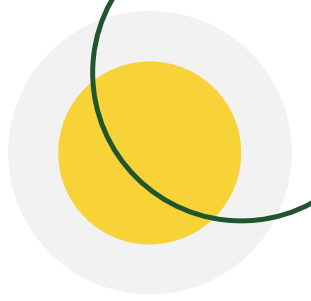
Learning Theories

- Allport (1937) proposed the term **Cognitive Style**.

- **Different Learning Styles:** The students' thoughts, feelings, actions, emotions, and desires are taken on board using various teaching strategies and activities .

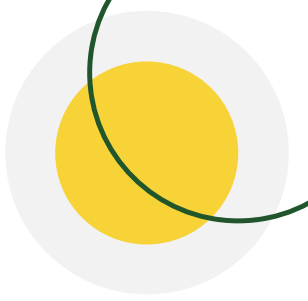
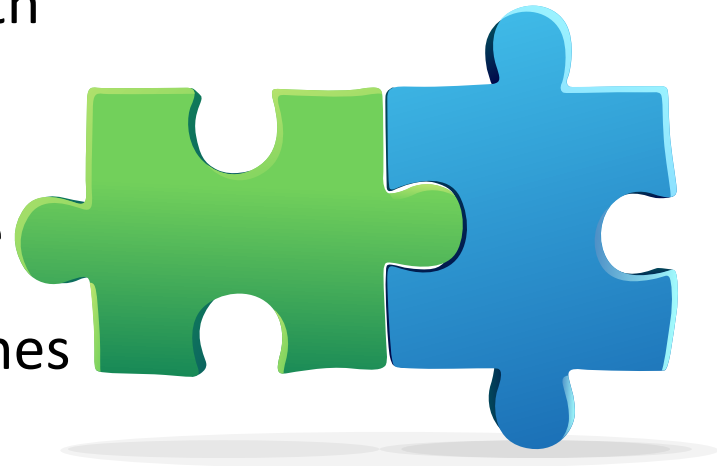
- **Cognitivism:**

- Matching
- Classifying
- Analyzing
- Connecting
- Expressing Thoughts



Learning Theories

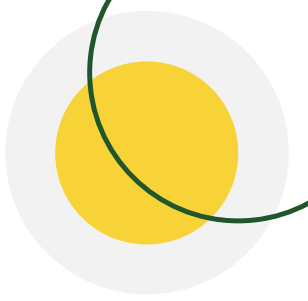
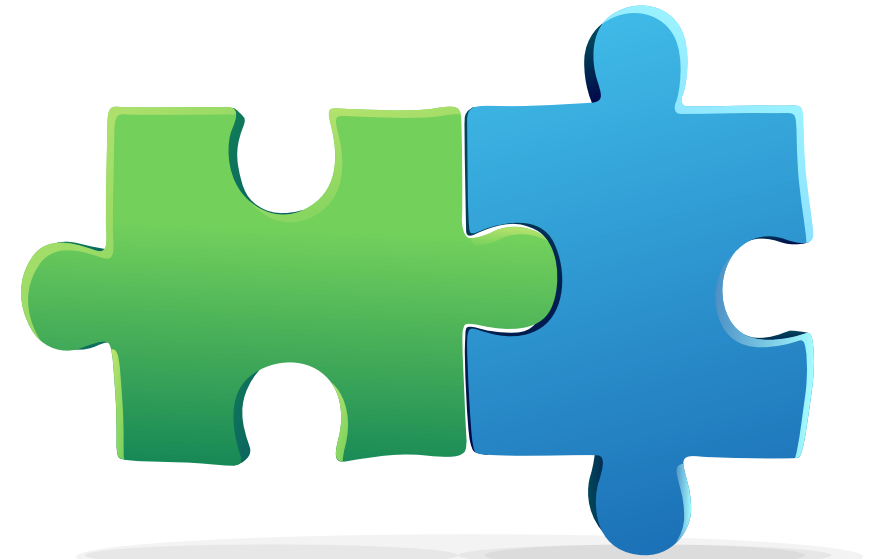
- **ZPD:** Students are instructed and challenged within the bounds of their ZPD through clear instructions.
- **Dual code theory:** The explanations are all complemented with visuals.
- **Multimedia theory – Cognitive load theory:** Activities include videos, interactive PowerPoint presentations, visuals, and games that focus on reinforcing the Germane cognitive load and reducing the extraneous cognitive load.



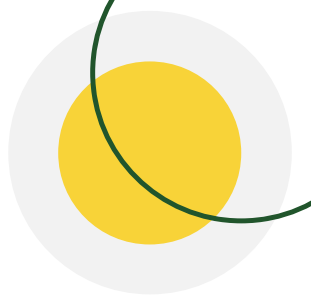
Learning Theories

- Constructivism:

- Doing Problem-based Activities
- Conducting Groupwork Research
- Going on a Field Trip
- Watching a Documentary Video
- Analyzing
- Creating a Portfolio



Learning Theories



- **Connectivism:**

- Researching the topics in question using several links suggested by the instructor
- Discussing their findings with the other members of the group through creating mind maps



Thank you