Curriculum Guide/Lesson Plan

Predator vs. Prey with Aurelia

In this lesson, students will learn how to differentiate the roles an animal takes in an ecosystem based on its physical features.

Subject Areas / Grade Levels / App Tie-In / Learning Standards

Subject Area: Ecosystems, Marine Science, Science

Grade Levels: 3-5

App Tie-In: Aurelia

NGSS Learning Standards:

3-LS3-2 Heredity: Inheritance and Variation of Traits

3-LS4-2 Biological Evolution: Unity and Diversity

3-LS4-3 Biological Evolution: Unity and Diversity

Access

Access the Aurelia app via Verizon Innovative Learning HQ at: https://www.verizon.com/learning/ar-vr-apps/Aurelia/18

Overview

This lesson will lay a framework for students to better understand the differentiation between predators and prey by comparing physical characteristics. This will not only help familiarize students with anatomical characteristics, it will give a greater sense of the predator prey relationship.

- In Segment 1, we will explore the Aurelia app. Students will make their first iterations of predator and prey.
- In segment 2, we will explore characteristics unique to predators and prey.
- In segment 3, recreate the fish from segment 1 in an effort to show improved understanding of their designs.

Objectives

- In Segment 1, get comfortable with the app and test the level of their pre-existing knowledge.
- In Segment 2, students will be able to understand features unique to predators and with reasoning.
- In Segment 3, revamp designs from the first segment in order to improve and learn from previous iterations of their design.

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Essential Questions

- In Segment 1: What makes your predator/prey effective, what do you not understand?
- In Segment 2: What features are unique to predators/why and why?
- In Segment 3: How is your new design improved upon your first?

Materials and Preparation

Segment 2:

- Student Workbook
    - Access workbook here

Background

Predator vs. Prey?

How might one look at an animal and learn if it is a predator or prey? Questions like these can only be answered when there is an understanding of the anatomical features of organisms and their respective purposes. By looking at each part of a fish and realizing its role, we can form an image of that organism's lifestyle and therefore its role in the ecosystem. Through this role we can determine if it is a predator, prey, or both!

Differentiating Predator and Prey:

Predators in the ocean can look different depending on what they are hunting. Some predators are adapted for fast movement to keep up with their prey, while others are slow moving and well camouflage to ambush their prey. Therefore, some traits are less of an indicator than others.

We will first focus on how body shape, tail, and camouflage can all be utilized by both predators and prey. This will encourage students to understand the different types of physical features in different contexts. Second, features like mouth size and eye position are better indicators to tell apart predators vs prey.

Both cases will be explored and give students an encompassing view of the many ways in which fish utilize basic anatomy.

Step-by-Step Classroom uide

Segment 1: Aurelia Introduction and Exploration

Access: Have students explore the different ecosystems that are part of Aurelia. Encourage them to be thinking of differences in the environments!

Objective: Get comfortable with the app and test the level of their pre-existing knowledge.

Pacing: Spend as much time as is needed to engage!

Essential Question: What makes your predator/prey effective, what do you not understand?

1. Engage: 10 minutes
Get students excited in the creation process of their fish. Give time for each student to make both a fish they believe to be a predator or prey.

2. Reasoning: 10 minutes
As students create their fish within the app, they should be thinking of what specific traits are accomplishing their goal. They will need to log these beliefs and reasoning in their workbooks as they create their fish. Once done engaging, they will finish this segment by writing what they may be unsure of, i.e. what traits are they having trouble finding reasoning or purpose for.

Segment 2: Workbook Exploration

Access: N/A

Objective: Students will be able to understand features unique to predators and with reasoning.

Pacing: Go at the students pace, as this lays down a fundamental understanding for the demonstration in the next step.

Essential Question: What features are unique to predators/why and why?

1. Workbook Intro : N/A
Pass out workbooks to the students that they will then work through. The purpose of these books is to supply a bulk of the information in a more digestible manner. Access these workbooks above under *material and preparations*.

2. Explore: At most 10 minutes per Section
Do a workbook along with class. Workbook is divided into separate parts, which follow a similar order to that of the creation feature on the Aurelia app.

Segment 3: Discuss and Revise

Objective: Revamp designs from the first segment in order to improve and learn from previous iterations of their design.

Essential Question: How is your new design improved upon your first?

1. Engage: 5 minutes
Have students log back onto the app to revamp their designs.

2. Conclusion
Have students expand on their revamped fish creations with reasoning on what they learned and how they improved their fish for its niche or role in the environment.