

## ***Wild about Wildlife***

Lesson Plan

Grade(s): 4-6

### **Goal/Purpose:**

The purpose of this lesson is for students to develop an understanding of different classifications of organisms, their life cycles, and how light pollution can affect their natural habitats and environments.

### **Desired Learning Outcomes:**

1. Students will learn the classifications of organisms including birds, amphibians, reptiles, mammals, insects, and fish.
2. Students will learn general characteristics, habitats, reproduction methods, and eating habits of each animal.
3. Students will learn that all organisms depend on plants.
4. Students will learn artificial night lighting creates detrimental changes in the natural environments and habitats of all wildlife.

### **New Vocabulary:**

Amphibian: A four-legged vertebrate that spends part of its life living in the water, and part of its life on land.

Bad Light: A light that is too bright (blinds people), or a light that shines light toward the night sky instead of only on the ground where it is needed.

Bird: A warm-blooded animal characterized by a beak, feathers, and wings.

Cold-blooded: When an animal depends on the sun, it's environment, or other external sources to keep warm.

Ecosystem: A close system of plants, animals, and environment that all rely on each other for survival.

Fertilization: The process needed for two organisms to produce offspring.

Fish: An animal that is characterized by fins, breathing in water, cold-blood, and laying eggs.

Glare: An intense and blinding halo of light that causes you to squint. It comes from an unshielded or partially shielded light fixture and contributes to sky glow.

Good Light: An energy efficient light that only shines light toward the ground.

Habitat: The environment that a specific organism must live in to survive.

Insect: An animal that is characterized by a segmented body, six legs, and an exoskeleton.

Light Pollution: Too much outdoor light (glare and light trespass) that causes a glow above a city. It interferes with viewing the night sky and can disrupt surrounding environments.

Mammal: A warm-blooded animal that is characterized by giving birth to live young, having hair, and sweat glands.

Metamorphosis: A process that some insects go through from the time they are an egg to the time they reach adulthood. There are four stages which are egg, larva, pupa, and adult.

Migrate: When animals of the same species travel to different locations for different seasons, such as birds, elk, salmon, whales, etc.

Organism: Any type of plant or animal.

Reptile: A cold-blooded animal that is characterized by having scales, crawling on its belly, and laying eggs.

Vertebrate: An animal having a backbone, such as a human.

Warm-blooded: When an animal's blood is warmed internally and does not rely on the sun or external factors to maintain body warmth.

### **General Misconceptions:**

- Amphibians and reptiles are the same and/or share distinct characteristics.
- Humans are not animals.
- It is easier to see at night if there is more light.
- Since light can't "touch" anything, it doesn't affect animals.
- Insects like unnatural light and this is why they fly around them.

### **Preparation Time:**

Instructor should allow time to thoroughly review presentations and materials.

### **Presentation Time:**

Presentation time will take approximately 40-55 minutes.

### **Physical Layout of Room:**

The room requires a projection screen. In classrooms where there are skylights or windows that cannot be covered, it may be necessary to use an alternative space or method of presentation, such as through color copies or transparencies. In a classroom where a projector and a computer are available, students will

need to be arranged so that the projector can be placed in the center of the room.

### **Materials:**

- Computer with projector capabilities
- PowerPoint presentation
- *Wildlife Shakedown* game
- *Wildlife Match* card game

### **Procedure/Directions:**

- **Introduction**

The instructor will guide students through a PowerPoint presentation. Each slide is organized with graphics and text to lead students through the main types of wildlife and how they are affected by light pollution. At the end of the presentation, students will be assessed with an interactive card game. Students will use the cards to create a better understanding of wildlife and their habitats and characteristics.

- **Engagement Activity**

Here are some suggestions:

1. Have students write a short story about a nocturnal animal and how its habitat is affected by light pollution.
2. Have the students draw pictures of what the lights around their homes and communities look like.
3. Have the students brainstorm and discuss what Earth would be like without the use of lights.
4. Have students draw a picture of their favorite nocturnal animal.

- **Step-by-Step Instructions**

Students view a PowerPoint presentation which outlines the different characteristics of wildlife and light pollution.

The students break into groups to play the Wildlife Double Take game. Recommended group size is about four students per group.

The students will play the game, and compete for points. Instructions for the match game are included with the cards.

### **Evaluation/Assessment**

- **Quizzes**
- **Worksheets**
- **Short-answer questions**

## **Follow-Up Activities**

1. Students can play Wildlife Shakedown!
2. Students will take a walk through a neighborhood, park, or nature preserve and observe the native animals and their behaviors. This activity is best followed by a class discussion about their observations.
3. Ask students to observe moths flying around an outdoor light at their home or in their neighborhoods. Brainstorm ideas about what the moths are missing out on when they become fixated on the light (i.e. reproduction or food).
4. Ask students to observe how shining a flashlight on the ground distracts a pet cat or dog in their homes. Discuss this experiment and relate it to how light pollution can affect the migratory paths of birds, turtles, insects and other animals.
5. Students will work in groups to construct a diorama of a wildlife habitat. Students will use information from the presentation to help them decide what features will work best in their habitats.
6. Students will write a poem about dark skies and wildlife.
7. Students can draw a picture of how they think the night sky looks, and then compare it with an image of how the night sky looks without light pollution.
8. Students can imagine they are their favorite nocturnal animal whose habitat is disrupted by a bright shining light. Have the students write a complaint letter to the owner of the building to inform them of the disruptions the light is causing to their environment.
9. Complete the *Wild about Wildlife* Workbook.

## **One Computer Classroom**

### **Classrooms Without Computers**

Here are some suggestions:

1. If you have access to a computer at home or in the school library, you may print selected parts of the lesson as paper copies or transparencies.
2. If your school has projection capabilities in the library or another room located outside your classroom, use this location as your presentation site.

## **Home School**

This lesson can easily be followed and conducted in a home school group session as long as the district-mandated prerequisites are met. Parents should review the lesson information and fully examine the teacher's guide beforehand.