

# Designer Animal

## Lesson Plan: Science – Animal Adaptations

**Purpose** – Utilize knowledge from unit on adaptations to design an animal with to survive a pre-assigned habitat. Essential needs of animals will be examined and design adjusted for.

### Core Competencies:

- 4.2 Interaction and Change: Living and non-living things undergo changes that involve force and energy.
  - 4.2L.1 Describe the interactions of organisms and the environment where they live.
- 4.3S.3 Explain that scientific claims about the natural world use evidence that can be confirmed and support a logical argument.
- 5.2 Interaction and Change: Force, energy, matter, and organisms interact within living and non-living systems.
  - 5.2L.1 Explain the interdependence of plants, animals, and environment, and how adaptation influences survival.

### Modifications –

- Work in groups assigning heterogeneously
- Provide vocabulary worksheet with term definitions
- Assist students with needs in small pull out group setting.
- Advanced Students – after animal is designed provide altered climate and environment and have students create needed adaptations to designed animal for survival in new environment.

**Set up:** We have been studying about animal adaptations for a while now. Review adaptations of animals in various habitats. For example ask, ‘how have some animals adapted to living in a desert environment?’ Let student’s list adaptations for a variety of habitats and biomes.

**Intro** – Today we will begin to design our own animals. Everyone will draw a habitat description then create an animal to survive in that environment. Your animal does not have to be an animal that actually exists, you get to create your own animal based on the environment you draw. As you work on your animal you will need to make sure the animal is able to meet all its needs. What do all animals need? Review the basic needs of animals.

Students randomly draw a habitat and are given a worksheet to work through the design of their animal.

Final product – Web style poster with animal in center and needs branching out, each branch will list the animals adaptations to meet these need within their environment.

### Habitats

1: This habitat is dark and cold most of the time. It is very mountainous. It rains almost all day. Because of the wet, dark conditions, the only plants that grow well are small mosses and funguses. Animals on this planet include a type of mouse, a nocturnal hunting large cat, fish, and a variety of insects.

2: This habitat is dry, hot and flat. Water is found in underground streams but there is little water on the surface. Most of the lands surface is covered in sand, although there are patches of dry grass. When

plants can get their roots down into the water table, they grow into tall trees with leaves at the top but not along the trunk. Plants which are not connected to the water table are small and dry, but they are edible. Animals include insects, a species of birds which roost in the high trees, a sand-colored lizard and a type of rat.

3. This habitat is tropical: wet and hot. Most of the area is covered by rainforest and very flat. Water collects in large pools and lakes which have water in them all year 'round. A species of poisonous plant grows thickly on the ground. The spines of this plant are poisonous, and any animal which steps on one is sure to die. The vegetation is plentiful, and includes leaves, fruits and nuts. Animals include carnivorous snakes, varieties of insects, monkeys, fish and birds.

4. This habitat has a moderate climate. It never gets very hot or very cold, but stays mild all year 'round. It rains for part of the year and the water forms pools and lakes which dry up towards the end of the year and then the area is very dry. The land is partly mountainous and partly flat. Vegetation includes tall trees with high leaves and fruit, and a smaller plant which bears nuts. However, these nuts are inside hard shells which need to be removed before the nut can be eaten. Animals include rats and mice which live underground, insects, birds that nest in the tall trees, slow moving mammals which also live in the trees and a species of carnivorous nocturnal wolf.

Each poster must include information about the following:

- Habitat – description provided, additions accepted.
- Climate – Summarize from provided description
- How does the species have young? Lay eggs? Live Birth? Raise their young? Abandoned at birth? How do the young survive?
- Physical Description – What does your animal look like? Does it have skin, fur, feathers, scales?? How big is it? What color is it? Etc. – Include written description and drawing
- Food- What does your animal eat, does it change throughout the year? How does it obtain its food?
- Water – How does your animal acquire water?
- Shelter – How does your animal protect itself from the elements?
- Protection – How does your animal protect itself from other organism in your habitat.
- Food Chain – Provide a simple food chain that includes your animal. The chain must have at least 4 organisms. Your animal may not be at the top of the food chain.
- Name of your animal Species
- List Adaptations – Point out at least three Physical and two Behavioral adaptation of your animal and the purpose of that adaptation. How does the adaptation help it meet its needs?