

# **Animals Out of This World**

## **Objectives**

- Design a new animal using a key that is provided
- Recognize the importance of adaptation
- Apply your knowledge of biomes to create a habitat
- Create and construct a new animal to live on a different planet
- Report you new animal discovery through a science world news broadcast

## **Suggested Grade Levels**

**6-12<sup>th</sup> Grade**

## **Subject Areas**

**Biology - adaptation**

**Environmental Science - adaptation**

**Ecology - adaptation**

**Astronomy – life forms on other planets, and terrain of terrestrial planets**

**Speech/Communication – giving an oral presentation to the class**

**Art – creating and contrasting your new creature**

**Language Arts – writing a descriptive and informing speech**

## **Timeline**

**1 day working on the key**

**1 day building creature**

**2 days for presentations (3-5 minutes a student based on 55 minute class and 30 students)**

## **Standards**

### **Science**

#### **Unifying Concepts and Processes**

**Evidence, models, and explanations**

**Evolution and Equilibrium**

#### **Science in Personal and Social Perspectives**

**Population, resources, environment**

#### **Life Science**

**Structure and function in living system**

**Regulation and behavior**

**Diversity and adaptations of organisms.**

#### **Earth and Space Science**

**Earth in the solar system**

### **Language Arts**

**Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.**

## **Art**

### **Making connections between visual arts and other disciplines Understanding and applying media, techniques, and processes**

#### **Background**

This lab is being implemented during our environmental unit, specifically when teaching about adaptations to an environment. Students have finished learning about different kingdoms, classification of organisms and using a dichotomous key. Students will be using their prior knowledge to complete this activity. Students have also studied and reviewed their planets and characteristics. A key will be used in this activity to help students randomly create an animal that does not exist. Students should be aware of the different biomes listed under the key, and give you distinguishing characteristics of the biomes. For instance, a rainforest biome should have dense vegetation and a lot of annual rainfall etc...

#### **Helpful Hints**

1. It would be helpful to review the biomes before releasing the students to perform this activity. I would also suggest reviewing this on day 1, so if students finished using the dice they are able to begin sketching.
2. I would review the vocabulary that is listed below, so students are aware of the different terms. Especially, spikes vs. horns (this threw a lot of students)

#### **Vocabulary**

Exoskeleton, Endoskeletons, Appendages, Segments, Omnivore, Carnivore, Herbivore, Asexual Reproduction, Sexual Reproduction,

#### **Materials**

Adaptation Worksheet  
Document Camera (ELMO)  
LCD Projector  
Art Supplies (markers, crayons, colored pencils)  
Paper  
Dice  
Toilet paper rolls  
Paper towel rolls  
Aluminum foil  
Plastic silverware  
String, Yarn, Wikki-Stix (waxy-covered yarn)  
Pipe cleaners  
Hot glue gun  
Beads  
Scissors  
Glue  
Buttons

#### **Helpful Hints**

1. I listed several ideas above for building materials for your creature. You can use any supplies you would like to have students build their creatures. I would also recommend letting student bring in their own materials on day 2.
2. Since hot glue is hot! Please remind students of safety expectations and rules.
3. If you have multiple classes, set aside a set amount of supplies for each class. If you fail to do that, your last class will have limited supplies.

### Pre-Activity Information

Set aside space in your room for students to store their critters. If you are limited on space, you can allow students to work in groups of 2 or 3. Also, speech with your teammates and see if they would be willing to accompany some new “class pets” until they are finished. The art teacher would be a great idea.

Also, have technology equipment turned on and cued up ready for class instruction. This will cut down on the amount of dead time in your class.

### Lesson

#### Day 1

1. As students enter room begin with a warm up question similar to the following, “Given your knowledge on adaptations, give me 3 adaptations you would need to live on Mars. Explain.”
2. Create a short (10 minutes) discussion on adaptations, have students share their ideas.
3. Pass out “Animals out of This World” worksheet/key.
4. Pass out a sheet of computer paper (used for sketching out environment and/or animal)
5. Read over instructions
6. Demonstrate the first several steps in the key, on the document camera. Make sure you roll the dice, and explain how you perceived the number that correlates with the trait.
7. Review any lab instructions that are pertinent to your classroom (i.e. supplies, paper, moving around etc...)
8. Ask students if they have any questions?
9. Give students remainder of class time to work on project

#### Day 2

1. As students enter the room begin with a warm up question, “Give three characteristics that your creature has that will cause a dilemma to live in his/hers habitat.”
2. Have students share some of their thoughts with the class (5-7 minutes)
3. Go over any safety concerns you have before beginning the constructing process of their creature (i.e. hot glue gun).
4. Allow students to begin constructing their creatures with the materials provided, and/or any objects they brought from home.
5. Give remainder of class to work on project. (Be sure to walk around the entire time to ensure students are staying on task)
6. Last 5 minutes of class, you should remind students that presentations begin the following day.

#### Day 3 and 4

1. As students enter the room, begin with a warm up question, "Describe the products you used to create your creature. Why did you pick these particular items?"
2. In alphabetical order have students come up present their creature (2-3 minutes per presentation)

### **Extensions**

1. Students could build the habitat to accompany the creature
2. Students could write a descriptive essay

### **Evaluation/Assessment**

1. Students will be assessed on their creativity and relativity to the environment they rolled for.
2. Students will be assessed on their availability to explain the adaptations that were needed to live on their particular planet.

### **Resources**

<http://www.seti.org>

<http://www.nsta.org/publications/nses.aspx>

[http://artsedge.kennedy-center.org/teach/standards/standards\\_58.cfm#04](http://artsedge.kennedy-center.org/teach/standards/standards_58.cfm#04)

<http://www.ncte.org/about/over/standards/110846.htm>