

WHAT TYPE OF ANIMAL IS THAT SUPPOSED TO BE?: TEACHER GUIDE

Subject: Life Science

Grade Level: Middle School

Last Updated: June 11, 2008

Case Summary

Why do scientists use those funny looking names? What can the understanding of Latin classification names tell us about an animal? To solve an argument over who knows the most about classification, Tameika, Shakendall, and Antoine invent their own unique animal (accompanied with a proper Latin name) and then create a model or drawing of the animal. To settle the contest, they create a petition for their animal to have the honorary title of “Animal of the Month” at the Local Zoo.

Credits

This case was written by Vijay A. Mittal (PhD student, Psychology, Emory University, Atlanta, GA) and Rene Lovelace (teacher, Columbia Middle School, Atlanta, GA) fellows of the Emory University PRISM program (<http://www.prism.emory.edu>). Authors may be contacted at vmittal@emory.edu

This case was adapted from *Animal Classification*. Ridgedale Middle School. (2005). Retrieved June 16, 2006 from Web site: http://www.fpk.org/start/PBLProjects/LD_Classification/PBLpg6.htm

Learning Objectives

After completing this case, students will be able to:

1. Classify and associate the 6 kingdoms, classification categories, binomial nomenclature, and the process of scientific naming.
2. Explain why scientist use Latin names as well as identify and characterize members of each kingdom.
3. Integrate knowledge of scientific taxonomies to synthesize a unique product.
4. Classify an invented animal based on its characteristics.

Georgia Performance Standards

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science. (NSES Content Standard A)

S7L1. Students will investigate the diversity of living organisms and how they can be compared scientifically. (NSES Content Standard C)

- a. Demonstrate the process for the development of a dichotomous key
- b. Classify organisms based on a six-kingdom system and a dichotomous key.

Assessment

At the end of each scene, students will turn in their box chart, which will be graded based on clarity and completeness. Students stay on task because they are responsible for turning in their box chart. The case is graded on their combined grades of the box chart and products. A 5-point scale will determine their grade (5=excellent, 4=very good, 3=good, 2=fair, and 1=poor) that will be converted into a percentage depending on the wait of the assignment. For each criterion:

- Accuracy and depth of product component; attention to grammar and mechanics
- Individual/contribution within the team
- Individual research ability and effort – online, print, investigative questions

The last two criteria (participation and individual effort) will be judged not only by the facilitator, but also by the students to be completed at the end of the case. (See Self/Group Evaluation form in *Student Materials*).

Students will be evaluated on the basis of the quality of the end products (1) an new animal with a correct scientific name, and (2), a creative and thoughtful advertisement/petition to the local zoo arguing that their new animal should be considered the “animal of the month”. This will be based on a product that includes an effortful and informative description of appearance, behavior, habitat, and ecosystem, diet, and justification for why it should be the winner. In addition, students will evaluate peers in their own groups, in terms of effort and contribution; an end grade for effort and contribution will be based on these ratings in conjunction with facilitator observations.

Implementation Strategy

The case is designed to take place over five 120 minute sessions.

Day 1 (120-mins.)

- Overview of the Animal Kingdom (5 mins.)
- Read scene 1 (10 mins.); complete box charts (20 mins.); share and discuss as a whole class (30 mins.).
- Divide up learning issues among group (10 mins.)
- Computer Lab: Research learning issues (45 mins)

Homework: Finish researching learning issues.

Day 2 (120-mins.)

- Share and discuss learning issues research with small group (20 mins.) and then with whole group (40 mins.).
- Discuss new learning issues from homework (10 mins)
- Case 1 evaluation; wrap up 5 mins.
- Read Scene 2 (10 mins.); complete box charts (20 mins); share and discuss as a whole group class (20 mins.).
- Divide the learning issues among the group (10 mins.).
- Computer Lab: Research learning issues (40 mins.)

Homework: Finish researching learning issues

During *session 2*, students will present scene 2, and create their own unique animal and include a Latin name.

Day 3 (120-mins.)

- Share and discuss learning issues research with small group (20 mins) and then with whole group. Use textbook to research any additional issues (40 mins.).
- Students will create their own unique animal and include a Latin name. Materials include clay, poster board, colored pens/pencils were made available. Facilitators will redirect questions to the web-based resources.

Homework: Review learning issues from scene 1 and 2

Day 4 (120-mins.)

- Each group will present a 5-minute presentation of their animal.
- Complete scene 2 evaluation; wrap up (5 mins.)
- Read scene 3 (10 mins.); complete box charts (20 mins.); share and discuss as a whole group (25 mins.).
- Divide up learning issues among group (10 mins.)
- Computer Lab: Research learning issues (50 mins.)

Homework: Finish researching learning issues.

Day 5

- Share and discuss learning issues research with small group (20 mins.) and then with whole group.
- Student will create a convincing petition on why their animal should be named “Animal of the Month”. Students can design a brochure, poster board, flyer, video commercial etc. (60 mins.)
- Students will present their petition (30 mins.).
- Complete Scene 3 evaluation; wrap up (5 mins.)

Homework: Review scene 1,2, and 3

Facilitator Guide

Sample Box Chart

Facts

Scene 1
Max is a *Canis lupus familiaris*.
Max is a dog.
Panthera leo is the king in the animal Kingdom.

Scene 2
Antoine, Tameika, and Shakendall

Questions

Scene 1
What kingdom does Max belong to?
How do you use a dichotomous key?

Scene 2
How are the kingdoms different?

will create a fictitious Animal?
The students will compete for the best animal.

What is classification?

Pre-Hypotheses

Scene 1

What is a dichotomous key?
There are six kingdoms.
If Max is a dog then his Kingdom
Is Animalia?

Scene 2

Antoine knows more about the kingdoms
then Shakendall.
Shakendall will create the best animal.
Shakendall will need help with finding
her animal latin name.

Learning Issues

Scene 1

What is a *Canis lupus familiaris*?
What is a scientific name?
What is a Latin name?
How do organisms get a Latin name?

Scene 2

What is classification system?
What is a scientific name?
What is the different between archaeobacteria,
eubacteria, protista, plantae, fungi, and animalia?

Resources

Holt Science & Technology. (2001). Life science. Austin, TX: Holt, Rinehart, & Winston.

University of Michigan. (2008). Animal diversity web. Retrieved June 5, 2008 from <http://animaldiversity.ummz.umich.edu>

Kidport. (2007). The animal kingdom. Retrieved June 5, 2008 from <http://www.kidport.com/RefLib/Science/Animals/Animals.htm>

San Francisco Zoo. (2007). Homepage. Retrieved June 5, 2008 from www.sfzoo.org

Zapato, L. (2008). Help save the endangered pacific northwest tree octopus from extinction. Retrieved June 5, 2008 from www.Zapatopi.net/treeoctopus.html

Pearson Education. (2007). Fact monster. Retrieved June 5, 2008 from <http://www.factmonster.com>