Researcher Bio

Name: Christina Endara-Arnold

Professional Title: PhD Student

Contact Information (Email): christina.endara@uga.edu

Lesson Plan Title, Grade Level, and Keywords: What do animals and plants need to survive?; 1st grade, basic needs, animals, plants, survival.

Brief Description of Research Interests: My research focuses on how the nervous system influences regeneration. Specifically, I study how neuropeptides influence the regrowth of injured tissues. I love learning about neurodegenerative diseases and possible ways we can maintain our brains healthy!

Lesson Plan Information Sheet

Author(s):	**Christina Endara-Arnold**
Author Affiliation and Location (e.g. UGA, Athens, GA)	UGA, Athens GA
Author Contact Information (e.g. email)	Christina.endara@uga.edu
Introduction/Abstract to Lesson Plan (max. 100 Words) Include aspects of the lesson that are unique and innovative.	**This lesson aims to teach students about basic needs of both plants and animals. Students will learn a few components of what necessities plants and animals need to survive by observation, discussion, and completion of an activity.**
List of Standards Addressed (This should be list of all full standards addressed by the lesson.)	S1L1. Obtain, evaluate, and communicate information about the basic needs of plants and animals. a. Develop models to identify the parts of a plant—root, stem, leaf, and flower. b. Ask questions to compare and contrast the basic needs of plants (air, water, light, and nutrients) and animals (air, water, food, and shelter). c. Design a solution to ensure that a plant or animal has all of its needs met.
Learning Objectives using Measurable Verbs (what students will be able to do)	Goal: identify 4 basic needs a plant and an animal needs to survive
Appropriate Grade Levels	**1st grade**
Group Size/# of students activities are designed for	**15-30**
Setting (e.g. indoors, outdoors, lab, etc.)	**Indoors**
Approximate Time of Lesson (Break down into 20-50 minute periods)	**50-60 mins**
Resources Needed for Students (e.g. scissors, paper, pencils, glue, etc.)	Pencil, colored pencils, worksheet, dry erase markers, and a small white board.
Resources Needed for Educators (e.g. blackboard, Powerpoint capabilities, etc.)	1 physical plotted plant Worms (can be collected before the lesson; some examples include planarians or earthworms) **Planarians can be obtained from the Roberts-Galbraith lab at UGA** Petri dish or container with lid that can hold the worms Optional: Piece of food (for earthworms it can be a leaf and for planarians it can be some liver paste) Flashlight
Lesson Activity (step by step description of activity)	Introduction The teacher will separate class into 4-6 small groups and ask the students to write down a basic need animals or plants require to survive. After 2-3 minutes ask each group to raise their whiteboards to show their answers.
	Background Ask students to circle around the table that will contain both a plant and worms. Point out important resources the worm/plant needs to survive: • Shelter: Planarians are freshwater flatworms that are photophobic meaning they prefer dark areas. A cool way to show students this is shining a bright light (flashlight) on the worms and you will observe that they move away from the light.

	• Food: Animals need to obtain nutrients by eating. Planarians are carnivores meaning they eat meat like liver paste! (Idea: if you add food coloring to their food planarians will become that color.) • Water: Our planarians like being in freshwater so you can find them in rivers and lakes! • Air: Lots of animals have lungs so that they can breathe in air, but planarians do not have a respiratory system. They actually gain oxygen through their environment (the water they are in). Plants need: • Water (rain) which is absorbed through their roots. This is a great time to point out the plants roots so the students can see what they look like. • Air plants turn carbon dioxide into oxygen. • Light which usually comes from the sun. • Nutrients from the soil ** While discussing the plant make sure to point out the roots, stem, leaves, and/or flowers!**
	Step by Step Activity Now, ask your students to sit back down and pass out the worksheet. On the worksheet there is a picture of a different animal, a dog! This will allow the students to think of different resource examples another animal will need. Ask the students to draw and label needs the dog must have to stay healthy! Examples can include a doggy kennel or house to represent shelter. Air can be represented by drawing wind. Food can be represented by dog food in a bowl and water can be represented by water droplets! Next, students will label a plant diagram and draw one need a plant must have to stay alive. An example of a need for plants can be drawing the sun!
	Reflection/Assessment Exit ticket: 1 thing they learned, 1 thing students liked, and 1 question they have
Final Product/Assessment (e.g. quiz, presentation, essay, etc.)	**The final product of this lesson will be completing the worksheet to assess understanding.**