



## CANOPY IN THE CLOUDS LIVING HISTORY PROJECT

Trysta Wall, The New Teacher Project, Philadelphia, PA

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

**Introduction:** *Living History* projects are non-written, alternative assessments in which students embody a particular object, organism, or person other than themselves. In this lesson, students create a presentation in which they become an organism or species that resides in the tropical montane cloud forest of Monteverde, Costa Rica. Students may also choose to enact the role of a human that works within the forest. This assessment is unique and useful because it can be altered to meet a wide range of content matter and academic criteria, based on the individual needs of the teacher and students. A *Living History* project can also be developed for which completing previous *Canopy In The Clouds* lessons is not necessary.

**Major Themes:** Ecosystems, Defense, Adaptations, Interdependence

**Connections to the National Science Standards:** Structure and function of living systems, Populations and ecosystems, Diversity and adaptations of organisms, Interdependence of organisms, Behavior of organisms

**Time:** One class period for introduction of project and organism selection. One to two class periods for student presentations, dependent on class size. Research and preparation can be performed at school, or at home, as decided by teacher.

**Materials:** Materials needed for teacher-selected *Living History* presentation, research materials for students, computer with internet access, *Canopy In The Clouds* media (panoramas, hotspots, photos, & videos) as needed by individual students. Student handouts included.

**Objectives:** Students will be able to 1) describe and discuss an organism/species that lives within the cloud forest or human that works within the cloud forest 2) evaluate the organism/species/human role and how it contributes to the cloud forest ecosystem 3) present findings to class.

**Potential Misconceptions:** Ensure that misconceptions regarding the following topics are clarified before beginning the *Living History* project:

- 1) Some students may believe that organisms develop new traits because they need them to survive. Similarly, they may believe that adaptation is a conscious process used by an individual to fulfill some need or want. It is a common misconception that a single organism may adapt to its environment within its lifetime. A discussion surrounding natural selection is essential to help students understand that species adapt and evolve, not individuals, over long periods of time.
- 2) Students may believe that only animals can engage in defense activities. They do not believe plants can evolve or respond to the environment.



- 3) Students may confuse plant structures used for other purposes, such as pollination, as defense mechanisms. Clarify that structures may be similar but may have different, or multiple, functions.
- 4) Students may believe that symbiosis and mutualism are synonymous. Clarify that symbiosis is any long-term relationship between two or more species. Mutualism is a *type* of symbiosis, as are commensalism and parasitism.
- 5) Predation is similar to parasitism in that one organism benefits and the other is harmed. Remind students that symbiosis is a long-term relationship between organisms. Use of the terms parasite and host will help to differentiate between parasitism and predation, as will thorough examples.

## PROCEDURE

**Opening:** The teacher should prepare his/her own living history presentation to enact as students enter class. It is recommended that the teacher choose a subject (living or nonliving) that relates to the students' lives or recent studies. For example, if the students have just completed a unit on the biotic and abiotic factors in an ecosystem, the teacher could select "water" as the subject of the living history presentation.

The teacher should dress as water (two hydrogen and an oxygen or a droplet of water), speak to the students in the first person from the voice of water ("Good morning, I am water. I will be your teacher today."), act like water (change states from solid to liquid to gas), and share facts about yourself as water ("I am essential for life and make up 70% of your body"). This will serve as a model for students to use when preparing their own presentations (they usually get a good laugh out of it too).

Explain to students that they will be choosing an organism that lives within the tropical montane cloud forest of Monteverde, Costa Rica or a human that works within the cloud forest and preparing a living history report to present to the class, like the one just demonstrated.

**Development:** Provide students with p.1 of the student handouts *Living History Project Expectations*. Specific criteria can be selected or changed by the teacher, based on the content covered. This handout is based on the assumption that students have completed the *Canopy In The Clouds* lessons on symbiosis, diversity, defense mechanisms, and adaptations.

Create a list of organism/species/human options for students to choose from on the board. Call on students at random to select the focus of their research. Once an organism/species/human is selected, cross it off so that project topics are not repeated. A list of options is provided on p. 2 of the student handouts (*Suggested Topic List*).

Once students have selected a topic for the project, discuss research methods that are acceptable for preparation of the presentation. Make it clear to students that there will not be written component of this project, and that 100% of their grade will depend on the presentation given in class. Encourage them to practice their presentation at home, with classmates, or with the teacher outside of class time.



If possible or desired, provide students with classroom or library time to research their topic. In addition to *Canopy In The Clouds* media, students should use outside research sources to learn as much as possible about the organism, species, or human selected.

**Closing:** Review the *Presentation Rubric* (p.3 of student handouts) with students and answer any clarifying questions regarding the expectations for the project. Pass out a slip of paper and ask students to answer the following questions in regards to the project and their chosen organism, species, or human:

- What will be the easiest part of the *Living History* assignment to complete?
- What will be the most difficult part of the *Living History* assignment to complete?
- What remaining questions do you need answered in order to be successful in your *Living History* presentation?

Collect papers from students as they leave and address any remaining questions or concerns the following class period.

**Suggested Student Assessment:** This activity serves as a culminating, alternative assessment to a unit or series of lessons based on *Canopy In The Clouds* media. Use the rubric on p. 3 of student handouts to determine students' mastery of the concepts covered. The assessment can also be utilized in a classroom that does not have prior *Canopy In The Clouds* experience by altering the criteria to complement current classroom instruction.

**Extending the Lesson:** Create groups of students based on similarities or relationships between the organisms, species, or humans they selected. Ask students to create a revised *Living History* presentation that incorporates several of the roles and focuses on their interactions. Present the multi-character *Living History* projects to younger students as a teaching tool or to the school body as a play or cross-curricular assignment.

**Vocabulary:** habitat, diversity, symbiosis, adaptation