

## Canopy in the Clouds (<http://www.canopyintheclouds.com>)

In class you describe this year's scheduled field trip: *remote, exotic, green, tropical, and diverse*. When students try to guess your destination – “a forest?”, “a garden?” – you provide a more explicit description: *Imagine being immersed in a layer of clouds with the lush forest canopy enveloping you as you walk. Endurance and stamina are required as you trek along the mountainside at different elevations.* Your students, intrigued, demand to know the location of this unique microclimate. Without hesitation, you reveal the location as the Tropical Montane Cloud Forest: a unique destination that represents less than 1% of the world's remaining rainforests. No airline tickets, baggage fees, or permission slips required. To embark on this adventure, all you need is a URL: <http://www.canopyintheclouds.com>.

With the click of a button from a high-speed Internet connection, students in grades 6–12 can navigate one of the world's most diverse ecosystems. This website puts your students in control of their own explorations. As they traverse the landscape, they no longer feel as though they are mousing through a traditional computer environment. Instead, they feel as if they are part of an IMAX adventure with crisp, panoramic cinematography.

There are seven forests to learn about, each at a different elevation. After choosing a forest, students are transported to a panoramic landscape with natural sights and sounds, all of which add to the experience. Using the mouse, students can rotate in a 360-degree fashion, hunting for numbered “hotspots.” As they select a hotspot, a personal tour guide explains the various biotic and abiotic parts of the environment. Witnessing the iridescence of an assortment of metallic beetles, observing howler monkeys swinging atop the canopy, and scaling the forest trees with specialized climbing gear are just some of the excursions your students are offered.

“Canopy in the Clouds” is a unique tool that creates a synergistic feel across the many different scientific disciplines. Ecologists may teach about symbiosis using an army of leaf cutter ants as the example; earth scientists analyze weather patterns, water cycles, nutrient cycles, and soil samples; biologists examine the ways in which natural selection and evolution have shaped unique adaptations in insects, amphibians, reptiles, birds, mammals, or plants; and environmentalists–conservationists explore the interactions between humans and nature, with an emphasis on conservation of resources.

The website contains five main links that are located at the upper right-hand corner. These include “Explore,” “Learn,” “Teach,” “Experts,” and “Media.” “Explore” allows students to navigate the different forest elevations. “Learn” provides valuable introductory information. Answers to questions such as “What is a tropical montane cloud forest?”, “How do the clouds form?”, and “What makes them special?” are provided. I recommend the “Learn” page for providing students with background information, allowing them to get the most out of their journey. The “Experts” page lets students meet their tour guides and submit questions that will be answered via their e-mail address. In addition, the “Media” page provides supplementary videos, panoramas, and photographs.

“Canopy in the Clouds” has also designed a “Teach” webpage that includes 26 lesson plans for use in conjunction with existing or new curricula. These free, downloadable lesson plans, aligned to current U.S. national science education standards, are separated into categories including general, water and weather, process of science, soils, ecology and evolution, biodiversity, human interactions, and even lessons for young learners below grade 6. In addition, the site can be viewed in both Spanish and English, which makes the content accessible to ESL learners or for use in an interdisciplinary classroom.

Today's student is very technologically savvy, yearning to learn at his or her own pace. This resource satisfies that need while exposing the student to an otherwise hidden world. Get ready, pack your bags, and visit “Canopy in the Clouds” to plan your itinerary. Your virtual field trip is just one click away. I highly recommend “Canopy in the Clouds” for grades 6–12, although its content and lesson plans can be modified for use by other grades. Tutorial videos are also provided. For those without a high-speed Internet connection, the project team is developing a DVD version.

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## The Great Squeeze: Saving the Human Planet (DVD, 2009, Tiroir A Films Productions, 67 minutes)

This DVD allows the viewer to explore the major ecological and geopolitical problems that the planet Earth and the human population face in the 21st century. The multiple environmental crises, climate change, resource depletion, and species extinctions are explained by respected scientists, economists, and anthropologists, including Edward O. Wilson, Lester Brown, Alexandra Cousteau, and others. Their critical assessments of Earth's situation are very effectively presented and easy to follow. I felt that the piece on water depletion was especially powerful.

The DVD is appropriate for grades 5–12 and would also be a great resource in an AP environmental science class. The strength of this film for education is the way it is broken down into subthemes, such as A Depleting World; The Emerging Crisis; Climate Change and Global Economy; A Stressed Ecosystem; Warnings From The Past; The Great Change; Coming Together; and The Conclusion. This organization allows the teacher to present

each idea without overwhelming the students. The natural breaks provide class discussion breaks.

The film's combination of old and recent footage provides a unique perspective (though the inclusion of an old damaged film clip is distracting). Powerful interviews of famous people give emphasis to some of the main arguments and points. The use of the graphs, overlaid on the images, is also especially effective.

I intend to use "The Great Squeeze: Saving the Human Planet" this year in my own classes. It is a vital teaching tool and an important way to permit our students to visualize their future. It proves to them that what happens in their lifetimes will deeply impact the future of the Earth.

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