

Carl Rush
APES Course Outline Detail and Pacing
with CLIMATE CHANGE ACIVITIES LINKED
[Course Syllabus](#)

- 1 week Ecosystems: Components, Energy Flow, and Matter Cycling (Topics 1A,2A,2B)
 Lab: The Carbon Cycle⁴ (hands on: 60 min)
 Lab: Nitrogen Cycle (hands on: 30 min)
 Lab: Observing Producers & Consumers⁷ (hands on: 60 min)
 Lab: The Web of Life⁷ (pen & paper: 30 min)
- 1 week Evolution and Biodiversity: Origins, Niches, and Adaptation (Topic 2C)
 Lab: Modeling Evolution⁴ (pen & paper: 60 min)
 Lab: Island Biogeography (hands on: 60 min)
 Video: Evolutionary Arms Race (Evolution, Episode 4. PBS, 2002)
- 2 weeks Population Dynamics, Carrying Capacity, and Conservation Biology **with**
 The Human Population: Growth, Demography, and Carrying Capacity (Topics 3A,3B)
 Lab: Predator-Prey Interaction⁴ (hands on: 60 min)
 Lab: Ecological Succession⁴ (hands on: 60 min)
 Lab: Survivorship (hands on: 60 min)
 Lab: Species Diversity (hands on: 60 min)
 Lab: Power of Pyramids (computer lab: 60 min)
- 1.5 weeks Biogeography: Climate, Biomes, and Terrestrial Biodiversity **with**
 Aquatic Ecology: Biodiversity in Aquatic Systems (Topics 2A,2B,2C,2D,2E)
 Lab: Factors That Influence Ecosystems⁴ (pen & paper: 60 min)
 Lab: River & Stream Systems (hands on: 60 min)
 Lab: Flood Bank³ (computer lab: 30 min)
 Lab: State of Global Forests¹ (case study: 90 min)
- 2 weeks Long Term Study (StreamWatch: Wetland Ecology) (full lab write up)
 Sustaining Terrestrial Biodiversity: The Ecosystem Approach **with**
 Sustaining Aquatic Biodiversity (Topics 4B,4D,4F,7C)
 Lab: Forestry & Conservation⁴ (hands on: 60 min)
 Lab: Tree Cookies (hands on: 60 min)
 Lab: Catch of the Day¹ (case study: 90 min)
 Video: Freshwater (Planet Earth, Episode 3, BBC, 2006)
- 1 week Sustaining Wild Species (Topics 2A,7C)
 Lab: Endangered Species⁴ (pen & paper: 60 min)
 Lab: Moose Malady³ (computer lab: 30 min)
 Lab: Illegal Immigration (exotic species)¹ (case study: 90 min)
- 1 week Food Resources **with** Pesticides and Pest Control (Topics 4A,4C,4F,4G)
 Lab: Food Production & Consumption⁴ (pen & paper: 60 min)
 Lab: Global Grain Production¹ (case study: 90 min)
 Video: Food Inc. (Participant Media, 2008)
- 1 week Water Resources (Topics 1C,4G,6A)
 Lab: Foul Water (hands on: 90 min)
 Lab: Water Conservation² (computer lab: 60 min)
 Lab: Wastewater Treatment (computer lab: 30 min)
- 1 week Geology: Processes, Hazards, and Soils (Topics 1D,2E,4D,4E)
 Lab: Temperature & Chemical Weathering⁸ (hands on: 60 min)
 Lab: Soil Porosity & Permeability (hands on: 90 min)
- 2 week Geologic Resources: Nonrenewable Mineral and Energy Resources **with**
 Energy Efficiency and Renewable Energy (Topic 5A,5B,5C,5D,5E,5F,5G)

	Lab: Oil & Natural Gas ¹ (case study: 60 min)
	Lab: Mission Possible ⁵ (pen & paper: 60 min)
	Lab: iPad-Our Choice-Renewable Part 1, Part 2 & Nonrenewable Resources (ipads: 120 min)
1 week	Risk, Toxicology, and Human Health (Topic 6B) Lab: What's Bugging You ³ (computer lab: 30 min) Lab: Organochlorines ¹ (case study: 60 min) Project: Public Service Announcement
2 weeks	Air and Air Pollution with Climate Change and Ozone Loss (Topics 1B,6A,6B,7A,7B) Lab: Emissions Trading (hands on: 60 min) Lab: Lichens & Air Quality (hands on: 60 min) Lab: Tracking Ozone Pollution ⁴ (pen & paper: 60 min) Lab: Global Warming & the IPCC (pen & Paper: 60 min) Lab: iPad-Our Choice-Climate Change (ipads: 30 min) Video: An Inconvenient Truth (Paramount Home Entertainment, 2006)
1.5 weeks	Water Pollution (Topics 6A,6B) Lab: Deadly Waters ⁶ (hands on: 60 min) Lab: Find the Sample ² (computer lab: 30 min) Lab: Restoring Estuaries (case study: 60 min)
1 week	Solid and Hazardous Waste (Topics 6A,6B) Lab: Why Recycle ⁴ (hands on: 60 min) Lab: Superfund Jigsaw (computer lab: 60 min) Lab: Fruitvale (hands on: 60 min)
1 week	Long Term Study (Wetland Research Project) Sustainable Cities: Urban Land Use and Management (Topic 4D) Lab: City Planning (pen & paper: 90 min) Lab: Symbiocity (computer lab:60 min) Guest Speaker: City Planning
1 week	Economics, Environment & Sustainability with Politics, Environment & Sustainability (Topic 6C) Lab: Bringing the World to the U.S. Standard of Living ¹ (case study: 90 min) Project: Politics & Environmental Policy Lab: iPad-Our Choice-Economics & Politics (ipads: 60 min)
1 week	Review and Final Exam

Additional requirement of the course: 15 hours environmental community service