SOLID, TOXIC AND HAZARDOUS WASTE

Content
Types of Hazardous and Toxic Waste
Disposal Methods
Ocean Dumps
Landfills
Natural Hydrogeologic Setting
Leachate Collection System
Cover
Superfund Sites
Exporting
Incineration
Reduction and Reuse
Alternatives to Household Chemicals
Recycling
Long Term Storage

Key Vocabulary
Hazardous materials
Incineration
Integrated waste management
Landfill
Leachate
Municipal Solid Waste
Nonbiodegradable
Reuse
Solid Waste
Superfund

Essential Questions
What kinds and amounts of wastes are generated in a typical house in New Paltz?
How does the amount of solid waste your family generates compare to the U.S. Municipal solid waste data?
How does a solid waste landfill work?
How do you evaluate the effectiveness of waste disposal methods at a landfill?
How can we reduce the amount of material that ends up in solid waste landfills?

ENVIRONMENTAL ECONOMICS, POLICY, AND LAW

Key Vocabulary
Agenda 21
Bottle law
Cost-benefit analysis
Cost-benefit ratio
Endangered species act
GNP (Gross National Product)
Lacey Act
Lobbying

Mitigation
NIMTOO (Not in my term of office)
Nonrenewable resource
Renewable resource
Special Interest group
Tragedy of the Commons

Review Questions
What are the local state and national laws that apply to the air, water and toxic waste regulations?
How are cost-benefit ratios determined and how are they used in natural resources?

CONVENTIONAL ENERGY

Key Vocabulary
Breeder reactor
BTU (British Thermal Unit)
Combined-cycle natural gas unit
Control rods
Deregulation
Fission
Fission products
Fossil fuels
Fusion
Fuel assembly
Land subsidence
Meltdown
Nonrenewable resources
Nuclear power
Oil sand
Oil shale
OPEC (Organization of Petroleum Exporting Countries)
Potential energy
Power grid
Synthetic Fuels
Tar sands
Turbine
Turbogenerator

Essential Questions
What are renewable and nonrenewable resources?
How do you determine the rate of energy use for a private home?
In your home survey, which items required the most electricity to run? Which items were the most inefficient to run in your house (lost the most energy to heat)?
How can the use of conventional energy resources be reduced?
What are the different stages of the development of coal?
What is the history of energy use in the world/U.S.? What sources do we rely most on now?
How long are our world and U.S. oil reserves predicted to last?
Relatively how efficient is the production of electricity from nuclear power, coal and natural gas?
Know the parts and functions of a nuclear power plant.

What new types of automobiles are being invented/produced that would reduce our dependence on oil? What are their draw backs?
Know the factor-label method for calculations.
Study the energy conversion problems we did in class.
Review how to do simple mathematical calculations without a calculator!

SUSTAINABLE ENERGY

Key Vocabulary
Alternative Energy
Bioconversion
Biogas
Cogeneration
Fuel wood
Gasohol
Geothermal
Maximum sustainable yield
Passive Solar Heating
Photovoltaic cells
Recycle
Renewable Energy Resources
Waste-to-energy
Wind turbines

Essential Questions
How do the different alternative energy uses compare in terms of consumption rate and efficiency?
How do we conserve and preserve energy resources in terms of reducing use, using efficient energy devices and alternative renewable resources?
How could the U.S. alter its energy use to become 100% sustainable? Why aren't we doing this?
Know the positive features and negative drawbacks of each type of alternative energy source.
Which types of alternative energy are the most feasible to replace our oil/nuclear power dependency?
What is the fastest growing renewable energy resource?
What is required to install passive versus active solar heating systems in a home?

URBANIZATION, SUSTAINABLE CITIES AND PERSONAL ACTION

Key Vocabulary
Consumptive Use
Sustainable development
Sustainability
Urban blight
Urban sprawl

Essential Questions
What factors have caused urban sprawl throughout the world?

What are some alternative uses of land that create an economical, ecological, uncontaminated and sustainable environment?
What are the goals of sustainable development?
What changes in urbanization are predicted in the next 50 years?
How could American cities be redesigned to be more ecologically sound and culturally amenable?
How can you as an independent, educated citizen alter your lifestyle to live more sustainably?
What methods do we have to encourage politicians to enact more environmentally sustainable policies?
What kinds of governmental regulations would be necessary to promote a sustainable American society?