Sustainable and Organic Agriculture Curriculum Resources
By
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Abundant Food and Fiber
Agri-Education, Inc.
[online:] http://www.agri-ed.com/affgoals.html

These lesson materials focus on how to produce enough food and fiber to support the world's population while remaining in balance with the environment. They are available on CD-ROM from Agri-Education for $119. Other lessons are also available at this URL.

Ag in the Classroom
USDA
Main site [online:] http://www.agclassroom.org/teacher/lessons.htm

This is the USDA's Ag in the Classroom (AITC) main site. It provides a variety of lesson plans available in pdf format, as well as links to state AITC sites. The states with helpful interfaces and useful content have also been excerpted in this bibliography.

Units available at this site include:

- Key Ingredients
- Agriculture Counts
- Listening to the Prairie - Farming in Nature's Image
    - Losing Ground: examines the dust Dust Bowl
    - Farming in Nature's Image: case study of an environmentally-sound farmer
- Geography

Air to Earth: Nike's Environmental Education Program
[online:] http://www.nike.com/nikebiz/nikebiz.jhtml?page=27&cat=ate

A curriculum developed by the shoe manufacturer, Nike, that focuses on sustainability, product life cycle, reuse & recycling, and consumer choices. It draws heavily on Nike shoes.

An Introduction to Sustainable Agriculture, prepared by Ecological Agriculture Projects
Macdonald College of McGill University June, 1989
[online]: http://www.eap.mcgill.ca/Indices/Alternative_Agri/AASA.htm

This would be useful as a teacher's background reference. See also http://www.eap.mcgill.ca/General/FAQ.htm for frequently asked questions.

Backyard Conservation Tipsheets
[online:] http://www.nrcs.usda.gov/feature/backyard/

These tipsheets provide information on topics including composting, nutrient management, and water conservation that could be adapted to lesson plans focused on applying the principles of sustainable agriculture to a schoolyard plot or home garden.

California Foundation for Ag in the Classroom.
[online]: http://www.cfaitc.org/LessonPlans/LessonPlans.php

CFAITC offers a variety of lesson plans for students in grades K-12. Most are free and available in PDF format; a few are available through the mail for a nominal fee. A sampling of available lesson plans follows; descriptions taken from the CFAITC website.

- Edible Numbers
  By Pamela Emery and Gina Hieb
  Grade: 3-6
  Through a series of activities, students analyze, using mathematical and scientific processes, the food they buy at the grocery store and understand that it ultimately comes from plants or animals.
- Science Fair and Lesson Ideas
  By Pamela Emery
  Grade: 3-12
  Includes stimulating questions that teachers can use when teaching a specific scientific topic, science fair ideas, in the form of questions, that relate to agriculture, and Web sites that educators and students may find useful when preparing a science lesson or a science fair project.
- Fruits and Vegetables for Health
  By Pricilla Naworski, MS and Brenda Byers, MS
  Grade: 4-6
  The comprehensive unit teaches students about the production, distribution, and nutritional value of California fresh produce. Geography, language arts, mathematics, science, health, and nutrition concepts are incorporated. Aligned to the Content Standards for California Public Schools.
- Agricultural Awareness Through Poetry
  By Alta Bjornsen
  Grade: 9-10
  In this lesson, students will see how poets have used farming as an interesting and important topic and then will write a poem on how and why agriculture is important in his or her life.
- That was Then, This is Now
  Edited by Pamela Emery
  Grade: 3-6
  Students will learn about food prices, and how they have changed over time, as they perform mathematical computations, analyze date charts, and compare and contrast statistical information.
- An Ag Interview
  Edited by Pamela Emery
  Grade: 9-10
  In this lesson, students will gain a greater awareness of the role agriculture plays in the American economy, practice oral and written communication skills, and learn about numerous agricultural careers.
- Simple and Complex Machines Used in Agriculture
  By Tonya Cargill and Pamela Emery

Grade: 2-4
This unit incorporates many science and math concepts as students learn about farm machinery and the use of machines in agricultural practices. Concepts focus on simple machines such as inclined planes, levers and pulleys and show how these simple machines are combined to form complex agricultural equipment.

- Where'd You Get Those Genes?
  By Beth Brookhart and Pam Schallock
  Grade: 5-7
  The students participate in a variety of lessons that examine the basic principles of heredity, as well as learn some specifics about genetics and how they are incorporated into today's agricultural industry. After reading an interview with a horse breeder, students will understand that certain traits are carried from one generation to the next. The Rock, Paper, Scissors activity helps students understand that some traits are dominant and others are recessive. Students are then asked to create a new produce item by combining existing traits with desirable traits. By reading biographies of scientists who have contributed to the study of genetics and biotechnology, students gain a better understanding of the history of genetic research. Finally, using tomatoes as an example, students learn how technological advances have affected tomato production.
- What's Bugging You?
  By Pamela Emery and Ethan Heifetz
  Grade: 4-6
  Through a variety of activities, students reinforce their skills of reading, writing, designing, investigating, and problem-solving while learning about a current issue--pest management. The students develop a definition for the word "pest," learn about agricultural pests in a cooperative setting, observe insects in student-made insect observation chambers, learn about the life cycles of certain pests, and create individual and class poems. In a concluding activity, students create an imaginary pest and discuss its hypothetical habitat.
- From Genes to Jeans
  By John Vogt and Mary Yale
  Grade: 7-9
  Students are introduced to the genetic research and technologies associated with agriculture. Students are provided with the scientific principles and tools associated with genetics and are encouraged to use their knowledge to think critically, creatively and freely about the viability and ethics associated with genetic engineering and agriculture. Careers related to science and agriculture are also introduced.
- Counting on Cooperatives
  By Nancy Harris and Michael Jarman
  Grade: 5-6
  This six-lesson unit introduces students to the study of economics, including an introduction to basic business types and systems. Students learn about international, national and California history as they take a historical tour of cooperatives and how they have evolved into the business structures that exist today. Arithmetic skills are reinforced as students cooperatively solve word

problems and exchange money. In a culminating activity, students open a business of their own choosing and experience the business world first-hand as classmates act as consumers. Agriculture is the overall theme for this unit.

- The Invaders
  By Kelly King and Cynthia Livingston
  Grade: K-3
  In this comprehensive unit, the students become detectives and gather evidence against the suspect (the pesky Mediterranean fruit fly).
- Tree to Table
  By Kelly King and Cynthia Livingston
  Grade: K-3
  Integrates language arts, mathematics, science, social science, and visual and performing arts concepts while following food production from the tree to the table.
- Where Does it Come From?
  By Amy Cage and Pamela Emery
  Grade: 2-3
  Students examine a variety of food and fiber products. Through hands-on activities and experiments, students learn about the raw sources of food and fiber products, trace a product back to the farm, and examine food packaging and storage techniques. This lesson plan is only available by mail. Please contact CFAITC.
- Invasion of the Medfly
  By Jerry Delsol and Holiday Matchett
  Grade: 4-6
  This comprehensive unit teaches students about the pesky and persistent Mediterranean fruit fly. Students learn science concepts, review California and world geography, practice reading and writing, perform art projects and use mathematics in this exciting unit.
- How Much Is Too Much? How Little Is Too Little?
  By Pamela Emery
  Grade: 5-8
  Taking further the idea that plants require certain nutrients, students discover, through hands-on activities, that nutrients are required in proper forms and amounts. Lesson titles include "What's Wrong With Me?" and “Can There Really Be Too Much of a Good Thing?"
- Starting All Over Again (The Cycles of Nature)
  By Lois Bechely and Karen Traiger
  Grade: 6-8
  Middle school students perform activities, experiments and a cross-curricular role play to learn the importance of cycles in nature and their relationships to the production of food and life on planet Earth. Carbon, Oxygen, water, rock/soil and nitrogen cycles are examined. This unit may be used as a supplement to How Much Is Too Much? How Much Is Too Little?
- The Interrelationships of Soil, Water, and Fertilizers and How They Affect Plant Growth

By Pamela Emery
Grade: 9-12
This comprehensive unit offers high school students the opportunities to perform guided classroom science projects and relate their newly gained knowledge to current agricultural issues including ground water quality and sustainable agriculture. A problem-solving role-play concludes the unit.

- The Chemistry of Fertilizers
  By Jean Kennedy
  Grade: 10-12
  High school students use fertilizer science as a tool to apply chemistry to real world situations. Hands-on experiments, activities, practice problems, discussions and writing assignments are incorporated as students learn to break compounds into ions, make a fertilizer and test several fertilizers for phosphate content.
- Genetic Engineering in Agriculture
  By Suzanne Weisker
  Grade: 10-12
  This unit designed for advanced science students introduces biotechnology and genetic engineering in a format that supports critical thinking and problem solving. Bacterial transformation activities are performed in this unit that highlight a current agricultural challenge the gossypol content in cotton.

Center for a New American Dream
[online:] http://www.newdream.org/make/bts/index.php
Web-accessible lists of socially and environmentally responsible back-to-school products.

Consortium in Sustainable Agriculture Research and Education (CSARE)
Sustainable Educator's Share List
[online:] www.csare.org/programs/educatio.htm
This website provides information about an email listserv, moderated by Dick Richardson. The goals of the listserv are "to share educational materials" and "to discuss educational methods and key issues in education for sustainable agriculture." To subscribe, send an email to Chad Kruger [cekruger@students.wisc.edu] with your name, email address, and subscribe to SAEd-Share-L.

Creative Change Educational Solutions
Ypsilanti, MI
[online]: http://www.creativechange.net/se/prof_development/index.htm
CCES is a non-profit organization founded by Susan Santone that works in partnership with schools and other organizations to offer curricula in sustainability. They also offer professional development opportunities for educators in Michigan.

- Introduction to Sustainability and Education for a Sustainable Future
- Economic Production and Natural Capital
- Incentives, Policies, and Economic Choices
- Indicators and Economic Measurement

Dr. Art's Guide to Planet Earth
By Art Sussman
Information and Additional Activities
[online]: http://www.planetguide.net/index.html

Dr. Art's Guide to Planet Earth looks at living on earth from a systems approach, and investigates human impact on the earth systems from both a global and local perspective. Dr. Art's website provides additional information and activities to supplement the book. Book topics include: earth systems: matter, energy, life webs; rock cycle, water cycle, carbon cycle; energy from the sun, the greenhouse effect, geothermal energy, earth's energy budget; webs of life, ecosystems, and feedback loops; species extinction, climate change, ozone layer; healthy food, air, and water, what can I do? Many activities are referenced to the Utah State Earth Systems educational standards.

Education for a Sustainable Future
[online:] http://csf.concord.org/esf/

This site is a clearinghouse for information and resources on sustainability education. It is worth occasional viewing.

Education for Sustainable Development Toolkit
Rosalyn McKeown
Energy, Environment, and Resources Center
University of Tennessee
[online:] http://www.esdtoolkit.org

This site provides a free download of the Education for Sustainable Development Toolkit. This 142-page document was written to help communities and educational systems design plans and reorient existing curricula in sustainable development. The document includes many helpful guiding activities for community planners and educators, as well as many graphic organizers to help record reflections, discussions, and ideas. Finally, the document provides a brief list of references on sustainable development. A few of the activities and discussions could be adapted to elementary or high school use in teaching concepts of sustainability.

EnviroGuide 2002
Kitsap County Government-- Kitsap County, Washington
[online:] http://www.kitsapgov.com/sw/teachers.htm

This guide outlines resources available to Kitsap County educators and includes classroom presentations, field trips, action projects, and technical assistance. It covers composting, soil health, earthworms, recycling, waste management, water quality, watersheds, and a listing of further resources for teachers. Although these programs are specific to Kitsap County, most are outlined in enough detail to provide educators in other areas of the U.S. with substantial inspiration.

EPA Safewater: Contaminant Scavenger Hunt
[online]:http://www.epa.gov/safewater/kids/wsb/682.pdf

This site provides a lesson plan for exploring environmentally-safer and less toxic cleaning products and insect control methods for use in the home.

EPA Safewater: Dilution and Pollution
[online]: http://www.epa.gov/safewater/kids/wsb/685.pdf

This site provides a lesson plan for investigating chemical pollutants in water.

Feeding Minds, Fighting Hunger
[online:] http://216.92.237.252/projects/food/worldfoodday/index.html

These lesson plans investigate the political, social, environmental, and economic influences on world hunger, and ways of overcoming hunger. Of particular interest is "Lesson 8: Can We Produce Enough Food AND Sustain the Environment: Balancing the gains and risks of using, or not using, high tech agriculture."

Glen Rose FFA Chapter
John Jones, site coordinator.
Glen Rose High School Agricultural Education Department
[online]: http://www.glenroseffa.org/lesson%20plans.htm

This site contains a wealth of lecture-style lessons in power point format. The presentations include topics from animal science, plant science, integrated pest management, soils, ag mechanics, ag business, FFA and leadership, and food safety. The content of most presentations is geared toward conventional agriculture; however a few are based in organic or sustainable ag ideals.

Global Learning and Observations to Benefit the Environment Program (GLOBE)
[online:] http://archive.globe.gov/tctg/tgtoc.jsp
This site provides a teacher's guide, complete with data sheets and lesson plans, with chapters including hydrology, soils, and the earth as a system.

Green Means Series
KQED-TV9
San Fransciso, CA

"Green Means, KQED-TV9's popular series of upbeat, short stories about ordinary people whose lifestyles and activities are making positive contributions to the environment. Produced by Ken Ellis and hosted by NPR's Susan Stamberg, the award winning series is underwritten for a fourth year by the Richard and Rhoda Goldman Fund, a prominent philanthropic organization that annually awards the prestigious Goldman Environmental Prize." Season 4 episodes include "Ecotimber," "Phytoremediation," and "Ecoliteracy." Past episodes include "The Green Cowboy," "Seeds of Change," and "Organic Milk." Seasons 1, 2, and 3 are available from Environmental Media, Inc. [online:] http://www.envmedia.com/xcart/customer/search.php?substring=Green+Means

Healthy Foods from Healthy Soils: A Hands-On Resource for Teachers
Elizabeth Patten and Kathy Lyons, Illustrated by Helen Stevens
Paperback, $19.95
ISBN 0-88448-242-1
Grades K-6

This teacher's guide is available from Tilbury House Publishing, [online:] www.tilburyhouse.com. Using simple activities, "'H*ealthy Foods from Healthy Soils*' invites you and your students to discover where food comes from, how our bodies use food, and what happens to food waste. You'll participate in the ecological cycle of food production > compost formation > recycling back to the soil, while helping children understand how their food choices affect not only their own health, but farmers, the environment, and your local community."

Iowa SOARs (Sustaining Our Agricultural Resources)
Iowa State University
Shellie Orngard and Diana Mayerfield
[online:] http://www.iastate.edu/vision2020/IowaSOARs/homepage.html

This site presents five days' worth of lesson plans, activities, and resources for introducing students to sustainable agriculture. It is very complete and user-friendly.

Kansas Agriculture in the Classroom
[online]: www.ksagclassroom.org

There are many agriculture lesson plans available for PDF download at this site; however, search options are limited.
Plans focused on organic or sustainable agriculture:

- Transgenic products

http://www.ksagclassroom.org/lessons/genag/5-6/Transgenic_products.pdf

- Soils, water, and erosion

http://www.ksagclassroom.org/lessons/water/PDFs/5-6/soils_water_erosion.pdf

LifeLab Science Program
[online:] http://www.lifelab.org/products/index.html

This site includes many resources for sale. Each guide teachers students about sustainability through the context of a school garden. Prices vary.

- Kindergarten: Great Exploration--Use your senses as built-it tools for exploration of the physical properties of soil, water, plants, garden animals, and more. Culminate units of study with garden celebrations.
- 1st Grade: Earth Is Home--Investigate the concepts of diversity and cycles while studying the differences among organisms. Themes include: plant life, soil, weather, and garden creatures.
- 2nd Grade: Change Around Us--Observe and investigate the concept of change by measuring the conditions that affect living and non-living things such as plants, water, food chains, resource conservation, and air.

- 3rd Grade: How things Work--Investigate concepts such as: garden tools as simple machines, structure and function of plant parts, garden animals, and soil.
- 4th Grade: Connections--Explore the interactions and physical properties of a habitat or ecosystem while applying the skills necessary for science investigation of water, nutrient cycles, food webs, and light.
- 5th Grade: Change Over Time--Study the adaptations and evolution of living organisms and their interactions with climate, soil, plants, animals, and seasons.

Linking Food and the Environment
Teachers College, Columbia University
[online:] http://www.tc.columbia.edu/academic/nutri/LIFE/lifenew/overview.htm

This site provides information on the LiFE curriculum, in inquiry-based science program that focuses on the food system to engage urban youth in science education. It also provides information on becoming a "LiFE Partner" or a school involved in the use of the curriculum.

National Gardening Association: Kids Gardening Teacher Resources
[online:] http://www.kidsgardening.com/teachers.asp

Contains many useful resources and links for teaching, all relating to agriculture in the context of school gardens.

Natural Resources Conservation Service
A Geography of Hope
A three-part pdf download
[online:] http://www.nrcs.usda.gov/news/pub/GHopeHit.html

Explore the State of Our Land! *America's Private Land, A Geography of Hope* tells the story of America's private, non-urban land. Private land is America's working land. It produces food and fiber, and much, much more: It also produces clean water, clean air, wildlife habitat, healthy and productive soil, and scenic landscapes. But this story is more than a national report card on the state of our Nation's natural resources; it will help the reader learn to think about land (soil, water, air, plants, and animals) in a different way. *A Geography of Hope* is a call to action, a call to renew our national commitment to America's private land and private landowners. The Nation will never achieve its goals for conservation and environmental quality if farmers and ranchers and all other private landowners are not engaged in a cooperative effort to use the land according to its capabilities. You'll get the facts and figures on natural resources from *A Geography of Hope*, all woven into a framework of land stewardship and a vision for natural resource management in the 21st century.

Ohio State AgScience Lesson Plans
Unit 3: Environmental Science
[online]: http://www-cms.ag.ohio-state.edu/AgSciLPs.html#Unit3

This unit includes lesson plans on maintaining air and water quality, managing soil, factors affecting nitrates in groundwater, and describing environmental interrelationships. Other lessons can be found at [online:] http://www-cms.ag.ohio-state.edu/AgSciLPs.html

Oklahoma Ag in the Classroom
[online]: http://www.clover.okstate.edu/fourh/aitc/lessons/index.html

This site provides a number of excellent lessons plans appropriate for many grade levels. Those dealing most closely with organic and sustainable agriculture are:

- At Home on the Range
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/bison.pdf
- At Your Fingertips
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/finger.pdf
- Be a Bug Scout
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/bugscout.pdf
- Bug's Eye View
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/bugseye.pdf
- The Farmer Cares for the Land
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/cares.pdf
- Fresh from the Farm
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/fresh.pdf
- Let it Rain
http://www.clover.okstate.edu/fourh/aitc/lessons/primary/letrain.p
- Look out below!
http://www.clover.okstate.edu/fourh/aitc/lessons/primary/below.pdf
- Mud in the water.
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/mudwater.pdf
- Save our Soil
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/savesoil.pdf
- Soak it Up
http://www.clover.okstate.edu/fourh/aitc/lessons/primary/soakup.pdf
- Weeds on the Windowsill
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/weeds.pdf
- What's organic?
http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/organic.pdf

Oklahoma Food Policy Council
Oklahoma Farm to School Pilot Program
[online]: http://www.kerrcenter.com/ofpc/farmtoschool_faq.htm

This site provides and overview of the Oklahoma Farm to School Pilot Program to introduce locally grown fruits and vegetables into Oklahoma's school cafeterias.

Organic Consumer Association.
[online]: http://www.organicconsumers.org/sos.htm

OCA is an action group devoted to changing the public school landscape to a more sustainable future. They advocate organic foods for school lunches and reduction in the application of pesticides at schools, among other things. They also act as a clearinghouse on sustainable news items and provide links to sustainable education sites.

PBS: Journey to Planet Earth
Land of Plenty, Land of Want
[online]:http://www.pbs.org/journeytoplanetearth/education/landofplenty.html

Topics covered in this program include drought, loss of topsoil, water pollution, misuse of chemical and pesticides, and loss of farmland to urbanization. The Land of Plenty, Land of Want Lesson Plan explores these issues in more detail.
To purchase videos, contact Screenscope Inc., http://www.screenscopefilms.com
PBS: Journey to Planet Earth
Sustainable Agriculture: It all starts with the soil [online]:
http://www.pbs.org/journeytoplanetearth/education/agriculture.html
The idea for "Sustainable Agriculture — It All Starts with the Soil" grew out of a desire by Screenscope, Inc., the producer of the PBS television series Journey to Planet Earth, and South Carolina ETV to expand on the idea of sustainable agriculture and to teach youngsters about its importance in their lives. This educational package combines video excerpts from the third program in the Journey to Planet Earth series, *Land of Plenty, Land of Want*, with solid background information on soil and two fun hands-on activities. Soil was selected as the focus because, as Pennsylvania farmer Steve Groff says in *Land of Plenty, Land of Want*, "Soil is my number one asset."

PBS P.O.Vs
POVs Borders for Educators: Lesson 3 Earth
[online]: http://www.pbs.org/pov/borders/2004/educators/edu_earth.html

Humans are altering the earth's landscape at rates and in ways never seen in times past. Using a digital camera to document local landscapes as they are today, students will explore how changes in human land use are impacting local environments. Students will also explore some of the social impacts of various land uses in their area. High School Level.

Pennsylvania Integrated Pest Management (PA IPM)
[online:] http://paipm.cas.psu.edu/schools/schoolEduc.html

This site contains links to publications, curricula, videos, and web sites that help teachers meet the Pennsylvania State IPM Standards. Prepared by the PA IPM Education Program Staff. Of particular interest are the IPM for Teachers curriculum, and the Join Our Pest Patrol curriculum.

Population Connection
[online:] http://www.populationeducation.org/pages/0,productlist,productlist,00.ecs

This site provides resources and links for teaching about the growing population and how it affects sustainability of the earth system.

Project Food, Land, and People: Resources for Learning
Food, Land, and People
Grades preK-12
1998-2003
[online:] https://foodlandpeople.org/resources/new_order_form.html

Project Food, Land, and People is a curriculum comprised of over 55 lessons for preK-12 students. The lessons focus on the links between people, agricultural production, soil, and ecosystems. The curriculum is available from the link above, in various formats including printed, bound, and on compact disc. Prices vary based on format. Lessons of particular interest to sustainable and organic educators are "Cows or Condos?" a lesson on sustainable development; "What will the land support?" a lesson on carrying capacity; "Step by Step," a lesson on agricultural production; "Less Elbow Room," a lesson on population growth; "It All Starts with A," a lesson on what agriculture provides to people; "Till We or Won't We," a lesson on how soil preparation affects erosion; "Schoolground Caretakers," a lesson on being caretakers of the student's schoolground environment, "Tomatoes to Ketchup, Chickens to Omelettes," a lesson on agricultural production; "Lunchtime Favorites," a lesson on food sources and nutrition; "Root Root for Life," a lesson on the importance of roots and soils; "From Apple Cores to Healthy Soil," a lesson on composting; "Expression Connection," a lesson on connections between themselves, farming, food and land; "Investigating Insects," a lesson on insect interactions; "Soil's Not Trivial," a lesson on the importance of soil conservation; and "In Harmony," a lesson on the limitations of soils.

Redefinging Progress
info@redefiningprogress.org
[online:]http://www.redefiningprogress.org/programs/sustainabilityindicators/education/k-12lessonplans.html

This site offers much information and many environmental information links. They also offer a few lesson plans. Of particular interest to organic and sustainable agriculture educators are:

- Food and You
  Designed to incorporate environmental education into general math and science classes for elementary school classes (K-5th grade), this lesson encourages students to think about where their food comes from, the food production process, and the byproducts associated with their favorite foods.
- Sustainable Dining
  Designed for lower high school (7 – 10th grade) economics, home economics, and general education classes, students will learn about sustainably produced shopping.

Also offered is a comparison of environmental education links involving some aspect of sustainable living, [online:] http://www.redefiningprogress.org/programs/sustainabilityindicators/education/edParentMaterials.html

Rodale Institute
Educator's Resources
[online:] http://www.rodaleinstitute.org/education/home.html

Rodale provides resources for educators focusing on regeneration of the environment and farming practices.

SATCHEL: Sustainable Agriculture Training Curriculum Handbook for Educators and Leaders
By Stephanie Rittman

"A development program in sustainable agriculture. The book features a focus on tried-and-true collaborative learning techniques. Published by the Alternative Energy Resources Organization (AERO). $15 (or $10 for AERO members). Contact: AERO at (406) 443-7272."

Also available: **Montana's Sustainable Agriculture: Farming with Foresight.** This curriculum includes videos and a box of resources. For sale from AERO.

School Composting
By Keith Addison
[online:] http://journeytoforever.org/edu_compost.html

This is a thorough review of available resources (including lesson plans) on composting and vermicomposting for schools. Also see their links to city farming, organic gardening, and small farms for more information [online:] http://journeytoforever.org/garden.html

School IPM at Iowa State University.
[online:] http://www.ipm.iastate.edu/ipm/schoolipm/node/view/77

This site provides a lesson plan on pesticide laws and regulations, complete with histories and copies of pertinent legal information. Computers with internet access are required. Grade level 12.

S.K. Worm Answers Your Questions About Soil
[online:] http://www.nrcs.usda.gov/feature/education/squirm/skQstns.html

This site answers common soil questions in a kid-friendly format using the animated character, S.K. Worm. Questions include:

- Is soil made through magic?
- Does soil have parents?
- What does the weather do to soil?
- What's on, and in, the horizon?
- How does soil help me keep my cool?
- Do soils come in different colors?
- How does water stay in the soil?
- How does air get into the soil?
- Why do plants like soil?
- Do roots just help plants?
- Does soil care about time?
- Can we keep the soil from washing and blowing away?
- What is soil conservation?

Soil and Water Conservation Society (SWCS)
[online:] http://www.swcs.org/f_pubs_education.htm

The educational resources produced by the SWCS include "Environmental Awareness," eight booklets for children ages 8-11. Topics covered include in the booklets include: rangeland use, ecosystem management, food production, needs of living things, plants for soil and water conservation, best decision practices, water pollution, and land use.

State of Maryland
Where Do We Grow from Here? A Teacher's Resource Guide on Growth and Its Impacts on Maryland.
[online]: http://www.dnr.state.md.us/education/growfromhere

This lesson plan set concerns issues of land use in Maryland. Particularly related to organic and sustainable agriculture is "Lesson 20: Putting the Land to Work" http://www.dnr.state.md.us/education/growfromhere/LESSON20/LESSON20.HTM

Stonyfield Farm
Adopt-A-Cow
[online:] http://www.stonyfield.com/HaveACow/

This site gives information about Stonyfield Farm's (organic yogurt producer) Adopt-A-Cow educational program. For $3.00 s&h, classes get a cow photo, certificiate, four yearly updates, and a cow bio.

Sustainable Agricultural Resources for Teachers, K-12
Mary V. Gold
Alternative Farming Systems Information Center (AFSIC)
2002
[online:] www.nal.usda.gov/afsic/AFSIC_pubs/k-12.htm

This extensive resources provides a list of contacts, curriculum, lesson plans, books, websites, and articles on topics relating to sustainable agriculture—many of which are included in this guide. Some links are no longer available.

Sustainable Agriculture and Wildlife: Piecing Together a Habitat Puzzle
Iowa State University Extension Service
Youth Education Curriculum for Middle Grades

This curriculum is available from:
Extension Distribution Center
119 Printing and Publications Building
Iowa State University
Ames, IA 50011-3171
Email: pubdist@iastate.edu
Cost: $25

Sustainability Education Center
[online:] http://www.sustainabilityed.org/

This site has lesson plan books and activity guides for sale. The lessons and activities focus on sustainable food systems and economics and are aligned with New York state standards.

Sustainability Education Handbook: A Resource for K-12 Teachers
Urban Options
[online:] http://www.urbanoptions.org/SustainEdHandbook/

Urban Options, a Michigan-based nonprofit organization, produced this online resource to help teachers integrate sustainability into their classrooms using topics outlined by the Michigan State Framework Standards. They provide curriculum ideas for many topics, including active citizenship, ecology, natural resources, agriculture, economics, non-human studies, air quality, energy, population, architecture, environmental action, community restoration, technology, bioregionalism, ethics, water consumption, and living systems. For curriculum idea, other resources (books, videos, websites) are suggested.Sustainable Table
Global Resource Action Center for the Environment (GRACE)

[online]: http://www.sustainabletable.org/schools/teachers/

This site provides useful information on sustainable living, including sections on sustainable shopping, the sustainable kitchen, and sustainable food in schools with a teacher idea section. Also included on this site is an extensive listing of issues synopses.

The Edible Schoolyard

[online:] http://www.edibleschoolyard.org/classroom.html

The Edible Schoolyard is a program at Martin Luther King Junior Middle School in Berkeley, CA. It was founded in part by Alice Waters. The program involves teaching students about nutrition and ecology through a schoolyard garden. Visit the site for information on this program, and for lesson plans (including a worm unit) and educational resource links.

This Land is Your Land

Michigan State University Extension

[online:] http://web4.msue.msu.edu/msuewc/kent/yourland/

This website provides free lesson plan downloads that focus on land use and policy issues, and include community awareness and farmland preservation activities. These are very useful in helping students develop a sense of place.

The Quest for Less

United State Environmental Protection Agency

Grades K-6

November 2000

This curriculum book, available from the EPA, contain many lessons on natural resources, products, waste, recycling, composting, landfilling and combustion. Of particular interest to educators in sustainable and organic agriculture are "How Many People Does it Take to Ruin and Ecosystem?" for grades 5 and 6; the "Teacher Fact Sheet on Products"; "Putting Products Under the Microscope" for grades 5 and 6; "(Hazardous) Waste Not," a lesson on ground water pollution for grades 5 and 6; "Let's Go Ecoshopping" for grades 4-6; "Compost Critters," for grades K and 1; and "Compost Crops" for grades 3-6.

The Sample Curriculum and Plans for Education (SCoPE)

The State of Michigan

[online:] http://www.michigan.gov/scope

This site is designed to provide lesson plans and classroom support to Michigan educators, but is accessible to educators everywhere. Of particular interest in the unit on West Africa, which includes activities on the use of sustainable practices in West African farming. [online:] http://www.michigan.gov/scope/0,1607,7-155-13497_13503_13507-38424--,00.html

The School Yard Ecology Site
[online]: www.ecostudies.org/syefest

This website provides a handbook for teachers (free!) on how to use inquiry-based learning to investigate the ecology of the schoolyard. It also provides many sample activities at: http://www.ecostudies.org/syefest/appen1main.htm
These activities focus on simple but scientific sampling methods. One activity that could easily be adapated for those interested in organic and sustainable agriculture is "School Traffic", that looks at the impact of foot traffic on soil organisms.
For more information on SYEFEST, contact the Institute of Ecosystem Studies at:

SYEFEST
Institute of Ecosystem Studies
PO Box R
Millbrook, NY 12545
Phone: (845) 677-5358 / Fax: (845) 677-6455
Email: berkowitza@ecostudies.org

Underground Network
An online exhibit from the Field Museum, Chicago
[online:] http://www.fieldmuseum.org/ua/nettop.htm

This online exhibit allows students to investigate soil organisms. Sponsored by Monsanto.

United Nations Educational, Scientific, and Cultural Organization (UNESCO)
[online:] http://www.unesco.org/education/tlsf/index.htm

UNESCO provides a free, web-based course/professional development exercise on "Teaching and Learning for a Sustainable Future." The unit encourages reflection on several activities in 25 modules. The modules are organized into four units: Curriculum Rationale, Teaching About Sustainability Across the Curriculum, Interdisciplinary Curriculum Themes, and Teaching and Learning Strategies. The modules take approximately 100 hours to complete. The website also features an embedded journaling tool, so that you can track your reflections throughout the units. Within the modules are also a number of unique and informative sidebars and links to useful information.

United States Department of Agriculture
Kid's Page
[online:] http://www.usda.gov./news/usdakids/index.html

The USDA's Kid's Page provides links to a variety of agriculture topics, with information, activities, and resources geared to young readers.

University of Illinois Extension
Teacher Guides
[online:] http://www.urbanext.uiuc.edu/ecosystems/index.html

This website provides six teacher's guide to various topics relating to ecosystem studies. Those of particular interest to organic/sustainable agriculture educators

are Teacher Guide 3: Integrated Pest Management, Teacher Guide 4: Soils and Ecosystems, and Teacher Guide 5: Sustainable Agriculture. Each guide contains some background information for the teacher as well as several student activities.

University of Nebraska-Lincoln, Center for Sustainable Agricultural Systems
Extension and education materials for sustainable agriculture: Volumes 1 & 2
[online:] http://ianrwww.unl.edu/ianr/csas/cur/aboutcur.htm

This site links several other websites with information or educational materials for sustainable agriculture. Most information is at the college level.

USDA Farmer's Market Coloring Book
[online:] http://www.ams.usda.gov/directmarketing/FMColoringBook.doc

This site provides a free, printable coloring book about a trip to the farmer's market. It emphasizes the tastiness of fresh produce.

UW Madison: Center for Integrated Agricultural Systems
[online]:http://www.cias.wisc.edu/archives/1992/03/01/sustainable_agriculture_curriculum_materials/index.php

This site provides ordering information for the "Toward a Sustainable Agriculture" curriculum set, including the 152 page teacher's guide, a supplemental guide called "Resources for Teaching Sustainable Agriculture," and "Lessons for Teaching Sustainable Agriculture." Price (including shipping) for the set is $15.

To order: Enclose $15.00 per copy (includes shipping and handling) made payable to UW-Madison - CIAS.

Mail to:

Center for Integrated Ag Systems, c/o Trish Haza
1450 Linden Drive
Madison, WI 53706

Please include a note that says how many copies of the curriculum set you are ordering and the address you want them sent to.

For more information, contact Trish Haza at (608) 262-5200 or e-mail: phaza@wisc.edu.

What's up MAC? All about agriculture in Massachusetts.
State of Massachusetts
[online]: http://www.umass.edu/umext/mac/lessons/

Includes several lessons on agriculture, including topics on sustainable agriculture. The following descriptions are taken from the website.

Lesson 1— Agriculture: What is it?: Students learn the wide variety of products grown in Massachusetts and how these products are produced.

Lesson 2—Massachusetts Agriculture Is It Here, There, or Everywhere?: Students create a map of Massachusetts-grown products and use the map to draw conclusions about the geographic location of agriculture in the state.

Lesson 4— A Little Bit of History: Students are introduced to agriculture in the 1700s and draw conclusions about the effects of seasons on farming.

Lesson 5—Give Me Open Space: Students are introduced to the concept of open space and the benefits derived from preserving it.

Lesson 6—Sustainable Agriculture: Students are asked to recognize that the amount of land we have available for food production is very small relative to the size of the earth. The word "sustain" is related to protecting the land.

Lesson 8—New Technologies: Simulating Aquaculture / Growing Plants Without Soil: Students are introduced to both aquaculture and hydroponics.

Wildlife Habitat Council
[online:] http://www.wildlifehc.org/managementtools/backyard-lessonplans.cfm
This site includes lesson plans on native and invasive plants, and on community-based law making procedures.

Wisconsin Ag in the Classroom
[online]: http://www.wisagclassroom.org/Lesson%20Plans.htm
This site provides some lesson plans that are free to download in PDF version. Those most applicable to sustainable/ organic agriculture are:

- Ecosystem Biodiversity

http://www.wisagclassroom.org/Ecosystem%20Biodiversity.pdf

- It All Comes from the Soil

http://www.wisagclassroom.org/It%20All%20Comes%20From%20Soil.pdf

There are also some simple, hands-on activities listed at this site.

WormWoman
By Mary Appelhoff
[online:] http://www.wormwoman.com/acatalog/index.html
This site provides information and links on vermicomposting, including worm bins and equipment. In particular, see “Worms Eat Our Garbage: Classroom Activities for a Better Environment.”
[online:]http://www.wormwoman.com/acatalog/Wormwoman_catalog_Worms_Eat_Our_Garbage_36.html