Standards-Driven Lesson Planning Guide

Course Name or Grade level English/Language Arts 8th grade	Textbook/Resources Exploring Careers Textbook, SCOIS.net Computer Resource, SC ELA Standards, Library Resources
What do want your students to know?	
Content/Topic/Theme (Does it connect with the students' real world?) Research/ Careers/Applying Skills of Inquiry, Decision Making, and Written/Oral Communication.	
Why do they need to know it? To explore careers and understand the connection of school and work as well as the relationships among personal qualities, education and training, and the world of work.	
Reading/Mathematics Standards ELA Standards 8-6; Indicators 8-6.1 – 8-6.8 1. Clarify and refine a research topic 2. Use direct quotations, paraphrasing, or summaries to incorporate into oral or written works the information gathered from a variety of research sources. 3. Create a list of sources that contains information (including author, title, and full publication details) necessary to properly credit and document the work of others. 4. Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose. 5. Use appropriate organizational strategies to prepare written works and oral and visual presentations. 6. Select appropriate graphics, in print or electronic form, to support written works and oral and visual presentations. 7. Use a variety of print and electronic reference materials. **8.** Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, and organizing information**.**	**SCANS Competencies or Real-World Application** Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Applies Technology to Task Basic Skills of Reading and Writing Basic Skills of Listening and Speaking Demonstrates Personal Qualities of Responsibility and Self-Management
How will you know they know it?	
Assessment Students will be graded according to the rubric on research and resource skills, personal interview, and SC ELA Standards.	
How are they going to learn it?	
Activity (What will students do?) Students will research various occupations of interest and refine their choice to one career. (i.e. Dictionary of Occupational Titles, Occupational Outlook Handbook, Guide for Occupational Exploration, SCOIS.net computer resource, etc.) Students will choose a professional in their career field and conduct an interview. Students will organize, develop, and write their research based on the rubric, prepared handouts, and personal interview.	
Strategy (How will they do it?) Students will complete this task by using various textbook, periodicals, and computer resources as well as by conducting a personal interview with a professional in their chosen career field.	
Performance Task (How Will they demonstrate that they have learned it?) The students will have demonstrated their inquiry, research, and oral communication skills in their class presentations.	

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Course Name or Grade level	Textbook/Resources
Science - 7th grade	Exploring Careers Textbook, SCOIS.net Computer Resource, SC Science Standards, Library Resources

What do want your students to know?

Content/Topic/Theme (Does it connect with the students' real world?)
Research/Environmental Careers/Oil Spill Experiment/Applying Skills: Inquiry, Decision Making, Observation, Hypothesis

Why do they need to know it?
To explore careers and understand the connection of school and work as well as the relationships among personal qualities, education and training, and the world of work.

Science Standards – Grade 7	**SCANS Competencies or Real-World Application**
Ecology: The Biotic and Abiotic Environment Standard 7-4: Earth Science, Life Science The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environment. Indicators 7-4.1, 7-4.3, 7-4.4, 7-4.5 1. Summarize the characteristics of the levels of organization within ecosystems (including populations, communities, habitats, niches, and biomes). 2. Explain the interaction among changes in the environment due to natural hazards (including landslides, wildfires, and floods), changes in populations, and limiting factors (including climate and athe availability of food and water, space, and shelter). 3. Explain the effects of soil quality on the characteristics of an ecosystem. 4. Summarize how the location and movement of water on Earth's surface through groundwater zones and surface-water drainage basins, called watersheds, are important to ecosystems and to human activities.	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Applies Technology to Task Basic Skills of Reading and Writing Basic Skills of Listening and Applying Basic Skills of a Hands-on Approach to Work Demonstrates Personal Qualities of Responsibility and Self-Management

How will you know they know it?

Assessment
Students will be graded on participation, research conducted, observations, hypothesis and presentation as well as SC Science Standards.

How are they going to learn it?

Activity (What will students do?)
Students will receive instruction on ecosystems and the environment. Students will conduct an experiment, "Cleaning up an Oil Spill, and write a short paragraph summarizing the results. They will assume the role of an environmental scientist and develop a presentation based on their scientific findings. Students will then research (i.e. Dictionary of Occupational Titles, Occupational Outlook Handbook, Guide for Occupational Exploration, SCOIS.net computer resource, etc.) various occupations related to the environment and the clean up of an oil spill. Students should give specific details about each occupation (i.e. what they do, how much education is required, etc.) once the research is complete.

Students will organize, develop, and write their research based on instructions, prepared handouts, and the experiment.

Strategy (How will they do it?)
Students will complete this task by using various textbooks and computer resources, and by conducting their own experiment. All supplies will be provided by the teacher.

Performance Task (How Will they demonstrate that they have learned it?)
The students will have demonstrated their understanding by written hypothesis and by preparing and presenting a report. They will also have in writing a detailed summary of the occupations involved.

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Course Name or Grade level Science - 8th grade	Textbook/Resources Exploring Careers Textbook, SCOIS.net Computer Resource, SC Science Standards, Library Resources
What do want your students to know?	
Content/Topic/Theme (Does it connect with the students' real world?) Research/Exhibit Activity/Rocks & Minerals/Applying Skills of Inquiry, Display, Decision Making, Observation	
Why do they need to know it? To explore careers and understand the connection of school and work as well as the relationships among personal qualities, education and training, and the world of work.	
Science Standards – Grade 8 Earth's Structure and Processes Standard 8-3 Earth Science: The student will demonstrate an understanding of materials that determine the structure of Earth and the processes that have altered this structure. 8-3.4 Explain how igneous, metamorphic, and sedimentary rocks are interrelated in the rock cycle.	**SCANS Competencies or Real-World Application** Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Applies Technology to Task Basic Skills of Reading and Writing Basic Skills of Listening and Applying Demonstrates Personal Qualities of Responsibility and Self-Management
How will you know they know it?	
Assessment Students will be graded on participation, classification, observation and reporting as well as SC Science Standards.	
How are they going to learn it?	
Activity (What will students do?) Students will receive instruction on rocks and minerals and learn how to classify three types of rocks. They will complete a worksheet that will reveal several types of occupations related to rocks and minerals. Students will then research (i.e. Dictionary of Occupational Titles, Occupational Outlook Handbook, Guide for Occupational Exploration, SCOIS.net computer resource, etc.) and define those occupations in written format. Specific details about each occupation should be addressed (i.e. what they do, how much education is required, etc.). Students will also be asked to create a classroom exhibit by classifying the rocks they find and building their own display. An instruction sheet will be handed out to each student. All projects will go on display at the school. Students will organize, develop, and write their research based on instruction, prepared handouts, and classroom exhibit.	
Strategy (How will they do it?) Students will complete this task by using various textbooks and computer resources. Various supplies will be brought in by the students from home and others supplied by the teacher.	
Performance Task (How Will they demonstrate that they have learned it?) The students will have demonstrated their understanding by preparing and classifying the rocks in there own exhibit and by writing a detailed summary of the occupations involved.	

ENVIRONMENTAL OCCUPATIONS

Environmental Analysts, Environmental Engineers, Environmental Lawyers, Environmental Microbiologists, Recycling Coordinators, Solar Energy System Installers, Urban Foresters, and Water Pollution Control Inspectors

Environmental Analysts

Environmental Analysts assess proposed projects to determine their impact on the environment. They design and direct special studies to obtain technical environmental information about planned projects by contacting and using different sources.

Environmental Analysts research, identifies, and analyzes different sources of pollution to determine their effects on the environment and find alternative ways to handle projects in an environmentally sensitive manner. They do this by collecting and synthesizing data derived from pollution emission measurements, atmospheric monitors, meteorological and mineralogical information and soil or water samples.

Environmental Analysts conduct Research studies to develop theories or methods for abating or controlling pollution sources. Positions are found in government agencies and private environmental consulting firms (see Toxicologist).

Related Jobs: Air Pollution Analysts, Environmental Scientists, Soils Analysts, and Water Quality Analysts.

Education/Knowledge: Bachelor of Science in environmental studies, recreation or urban planning.

ENVIRONMENTAL ENGINEERS

Environmental Engineers can specialize in what is known in the field as either "clean" or "dirty" work. Clean work is the preventative side of the job. The dirty aspect of Environmental Engineering jobs is helping in times of environmental emergencies.

"Clean" Environmental Engineers investigate potential sources that damage the environment and develop ways to ward off pollution and other problems. They design

pollution control systems for manufacturing plants. These types of Engineers can also determine where to build a system, such as a waterfront development, so as not to destroy or interrupt the ecosystem. The "Dirty" Environmental Engineers decide how to clean up environmental problems quickly and efficiently. Oil spill clean-ups, poison seeping from an underground pipe, hazardous waste disposal and restoration of polluted lakes and wetlands are some examples of environmental emergencies.

Related Jobs: Chemical Engineers Civil Engineers Marine Biologists Mechanical Engineers.

Education/Knowledge: Bachelor of Science in mechanical, chemical or environmental engineering or environmental science; Master of Science in environmental engineering.

ENVIRONMENTAL LAWYERS

Environmental Lawyers are experts in environmental law who help companies understand complex and often overlapping EPA rules and regulations. They help bring their clients up to EPA standards. Federal and State governments are enforcing environmental laws and prosecuting those who violate them. Lawyers and businesses often confer to improve proposed environmental laws. When a government agency informs a company that they are not in compliance with federal regulations, Lawyers are consulted to determine if the government is correct, or if the company is exempt from that particular regulation.

Many Lawyers specialize in a certain area of environmental regulations, for example: air pollution, ground water clean-up, or the largest area, hazardous materials and waste management. Lawyers spend most of their time giving legal advice and explaining compliance rules. Occasionally Lawyers may represent clients in court.

Related Jobs: Environmental Compliance Agency Workers, EPA Inspectors, Lawyers, and Paralegals.

Education/Knowledge: Bachelor of Science in environmental studies; A Law degree Specialization in business, government or environmental law and a working knowledge of environmental issues, laws, and procedures.

ENVIRONMENTAL MICROBIOLOGISTS

Resource conservation and restoration practices are used by Environmental Microbiologists to protect the environment and drinking water supplies from pollution problems.

Environmental Microbiologists investigate land, air and water areas and conduct toxicity tests when needed. They take samples from lakes and streams to test the water, plants, animals and dead organic matter. They also inspect food and water in processing plants. Microbiologists are concerned with the effect of pollution on fish and wildlife, and related resources. To prevent destruction of these resources, they evaluate and make recommendations on proposed water projects, waste discharges, stream alterations; dredging, offshore drilling, and pesticide use (see Water Pollution Control Inspectors).

Related Jobs: Ecologists, Environmental Health Specialists, Environmental Service Supervisors, Hydro-geologists, Hydrologists, Medical and Clinical Laboratory Technicians, and Water Quality Biologists.

Education/Knowledge: Bachelor of Science in water quality, biology, biochemistry, zoology, environmental studies or related field. Knowledge of state and federal laws relating to conservation and restoration of fish and wild life is also needed.

RECYCLING COORDINATORS

Recycling Coordinators schedule the distribution and pick-up of containers. They also make sure the recycled materials get deposited in the correct facilities.

Recycling Coordinators are in demand in government programs and environmental consulting and waste management firms. There is an increased use of disposable items, including medical waste products that need to be recycled. Products made from recycled materials such as binder paper and plastic bags are already on the market.

Related Jobs: Chemists, Hazardous Waste Disposal Engineers, and Market Analysts.

Education/Knowledge: High School graduate; but a Bachelor of Science degree is preferred with science or engineering background. Experience with a community recycling program or courses in waste management are recommended.

SOLAR ENERGY SYSTEM INSTALLERS

Photovoltaic systems are High Tech solid state solar modules used to convert sunlight into electricity. The converted electricity can be stored in batteries and used on demand. This is the fastest growing branch of the solar energy industry and has increasing uses in spacecrafts, cars and, soon, housing subdivisions.

Solar Energy System Installers mount pre-assembled solar panels or photovoltaic systems and install storage tanks, pumps, valves, pipes and ducts. They set up and adjust electrical or electronic controls and sometimes do routine maintenance on solar panels used to heat buildings, houses, and swimming pools.

Related Jobs: Carpenters, Plumbers, and Sheet-Metal Workers.

Education/Knowledge: High School graduate, Photovoltaic Systems.

URBAN FORESTERS

Urban Foresters manage and protect the trees in cities and suburbs so that both the people and the environment benefit. Urban Foresters oversee a multi-use system, including municipal water sheds, wildlife habitats, outdoor recreation areas, fire protection, landscape design, municipal waste recycling and the care of trees. They also oversee the future production of wood fiber as a raw material from city forests, forest holdings, woodlots and shelterbelts.

Responsibilities include the management of the city forest ecosystem: soil, space, microclimate pollution and people. Urban Foresters must also monitor public health hazards such as shrubbery burning and garden pesticides.

Related Jobs: Arborists, Foresters, and Horticulturists; Resource Recycling Managers, Wildlife Management Occupations, and Urban Planners.

Education/Knowledge: Bachelor of Science in forestry or resource management, Master's degree preferred, Forester license.

WATER-POLLUTION CONTROL INSPECTORS

Water-Pollution Control Inspectors provide technical assistance on groundwater hydrology to EPA Project Managers or other government agencies regarding contamination problems. They also determine if EPA technical compliance standards are met.

Water-Pollution Control Inspectors investigate complaints concerning water pollution problems and discharge entering state waters. They analyze the content of contaminated waste water and determine the effect it has on the environment and on people. When unacceptable or questionable conditions are present, the property owner is informed and recommendations for corrective action are made. Water-Pollution Control Inspectors warn health professionals and the public about harmful properties of contaminated waste water.

Related jobs: Hydrologists, Water and Waste Treatment Plant Operators.

Education/Knowledge: Bachelor of Science in chemistry, biology, hydrology, or environmental studies.

ADDITIONAL ENVIRONMENTAL CAREERS

Air Quality Managers are technical workers who do highly sophisticated monitoring, chemical and statistical analysis, and computer modeling for compliance and improvement studies for government, industry and consulting firms.

Environmental Planners develop plans and action steps for specific geographic areas (neighborhoods, cities, regions) or specific issues such as air quality or transportation.

Environmental Educators teach all school levels, help firms understand proper disposal of hazardous waste, interpret at State parks, write for trade publications, and translate technical information to the non-technical public.

Forestry, Fishery and Wildlife Managers are Foresters, Fish and Game Wardens and Aides maintaining and managing fish and wildlife ecology.

Hazardous Waste Managers include Environmental Engineers, Groundwater Scientists, Toxicologists, Industrial Hygienists and remediation specialists who identify, categorize, and reduce hazardous waste generation.

Parks and Outdoor Recreation Managers are Park Rangers, Park Ranger Assistants, Recreation Workers, Interpreters and other professionals who balance multi-use recreation with preservation of natural resources.

Solid Waste Managers are Environmental Engineers, Urban Planners, and Business and Finance Managers and other professionals who develop systems such as economical recycling and safe incineration.

Water Quality Managers are Chemical, Civil, Environmental and Mechanical Engineers, Hydrologists, Toxicologists, Planners and other professionals who greatly reduced visible pollutants in lakes, streams and rivers. They now combat newly recognizable toxic pollutants that are harder to control, and non-point-source runoff, erosion and degradation of coastal waters and wetlands.