GOING GREEN

NIE
New York News Publishers Association
Newspaper In Education Program

Newspapers as Sources for Greener Teaching

Teaching Guide

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GOING GREEN

Newspapers as Sources for Greener Teaching

A Newspaper in Education Teacher Guide

Lessons adapted and compiled by teachers of the
Syracuse City School District and the Syracuse Teacher Center

Layout and Design by Jill Emery, *The Post-Standard*

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The lessons in this guide are designed to be starting points for implementation of instruction to expand students' knowledge of the use and abuse of the natural resources in the state of New York and elsewhere, and of efforts to meet the need for resource conservation and stewardship. These lessons employ the daily newspaper's current and archival wealth as a source of information, investigation and source material for instruction.

Developments in technology and the political ramifications of a wide range of problems identified and options for solutions are other topics and issues for which newspapers offer information that educators will find beneficial.

The lessons were developed and used in classrooms from grades five-eight, and can readily be adapted for other grade levels depending on the curriculum content requirements and students' developmental level.

Common Core State Standards Chart

Lesson	Anchor Standards for Reading	Anchor Standards for Writing	Anchor Standards for Speaking and Listening	Anchor Standards for Language	Anchor Standards for Mathematical Practice	Anchor Standards for Science and Technical Subjects	Standards for History/ Social Studies
1	5, 7, 8, 9	1, 7, 9	1	1	4	1	7
2	1, 2, 6		1, 3, 4	1, 2, 3		5, 7	1, 2, 4
3	1, 2	1, 7	1, 3		2	1, 3, 7	1
4	1, 3, 7		1, 5	4		2, 7	2, 7
5	1, 2	1, 4, 8	2, 4	1, 2		1, 8	1, 2
6	1, 7	1, 8, 9	4			2	2
7	1, 7	3, 5	4, 5	1		1	1
8	1, 2	1, 7, 8	2, 4	1, 2		4, 6	
9	1, 8	8, 9	1, 2, 3			1, 2	1
10	1, 7	1, 2, 3	2, 4	1, 2	1, 2	7	4, 7
11	1, 5	7, 8	1, 3		1	5	
12	5, 6	4, 5	2				7, 9

For details of the Common Core State Standards by grade level go to **www.corestandards.org**

Other resources online:

• **Teacher Domain: Ecology** - provides video clips and interactive resources for learning about life cycles and processes, ecosystems, and human influences on ecology. Find lessons on biomes, coral reef ecosystem, population growth, and exploring the "systems" in ecosystems. Teachers' Domain is an online library of more than 1,000 free media resources from the best in public television. These classroom resources, featuring media from *NOVA*, *Frontline*, *Design Squad*, *American Experience*, and other public broadcasting and content partners are easy to use and correlate to state and national standards. **http://www.teachersdomain.org/browse/?fq_hierarchy=k12.sci.life.eco**

• Earth Day is April 22. On this Environmental Protection Agency site, individuals can choose 5 actions one might take to protect the environment. Find out about smart commuting, green buildings, and ways to reduce energy use. **http://www.epa.gov/earthday/index.html**

• **Green Revolution** - created by the National Science Foundation, features 10 fast-paced videos on alternative energy -- wind, solar, hydrogen, biomass, green roofs, smart grid, microbes, electric vehicles, and the CityCar project. **http://www.nsf.gov/news/special_reports/greenrevolution/**

1. Environment:

Identifying Environmental News

Standards

NYS Standards: ELA 1; MST 2 and 6; Social Studies 3 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will learn to identify and use the different sections of the newspaper and gather information.

Students will determine how to locate information on relevant environmental topics under study.

Students will draw conclusions about the relevance and importance of the newspaper information being examined for their study purposes.

Students will connect information across content areas and common themes.

Vocabulary

Headline, weather, editorial, local, national, international, environment, pollution, food web

Materials

Scavenger Hunt worksheets, newspapers

Activities

This lesson is a way to introduce students to "navigating" the newspaper. This is an open-ended, independent experience which requires students to get to know their newspaper through a hands-on experience of turning pages or clicking through the e-edition to discover what's in any edition of the paper that is pertinent for a particular unit of study or point of view.

Students can work individually or in pairs to complete the Scavenger Hunt worksheets.

Assessment

Students will be assessed on their ability to work together and to complete the worksheets.

Going Further

Students can find newspapers from other areas, or newspapers that are smaller or larger in size to the one they used, and complete the worksheets based on those newspapers. Other questions can also be written.

Students can develop a "Scavenger Hunt" for use with another class within the school or with younger students.

Students can write their own classroom newspaper, including a front page, local section, and weather page.

Name_____ Date_____

Newspaper Scavenger Hunt

Scan the newspaper for headlines and other important information. As you identify headlines, read and identify the type of story (local, national or international) and evaluate the story for its environmental impact on air, water, land and food supply. If the impact exists, indicate whether it is positive (+) or negative (-). Be sure to support your answers.

Part I. Front Page Headlines:
What are the headlines of the front page? List at least three.

1) Headline_____

Identify if this is a.) local_____ b.) national_____ c.) world / international_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air _____ Water_____ Land_____ Food supply_____
Support your answer:

2) Headline_____

Identify if this is a.) local_____ b.) national_____ c.) world / international_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air_____ Water_____ Land_____ Food supply_____
Support your answer:

3) Headline_____

Identify if this is a.) local_____ b.) national_____ c.) world / international_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air_____ Water_____ Land_____ Food supply_____
Support your answer:

4) Review the photographs on Page 1. Choose one.

Photograph Headline: _____

Identify if this is a.) local_____ b.) national_____ c.) world / international_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air_____ Water_____ Land_____ Food supply_____
Support your answer:

Part II. Local Pages Headlines:
What are the headlines of the local pages? List at least three.

1) Headline_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air _____ Water_____ Land_____ Food supply_____

Support your answer:

2) Headline_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air_____ Water_____ Land_____ Food supply_____

Support your answer:

3) Headline_____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air_____ Water_____ Land_____ Food supply_____

Support your answer:

4) Review the photographs on the local pages. Choose one.

Photograph Headline: _____

Do you think this is an environmental story? Why or why not?

Potential impacts: Air_____ Water_____ Land_____ Food supply_____

Support your answer:

Part III. Weather Page

Weather Statistics

1. What is the weather forecast for today for your community?

   _____

2. What was the record high temperature for this day?_____ Record low?_____

3. How much rain has fallen so far?_____ Are we above or below the average?_____

   How much snow has fallen so far?_____ Are we above or below the average?_____

4 . Temperature – U.S. Cities

a. Which city is forecasted to have the Highest temperature today?

City _____ Temperature_____

b. Which city is forecasted to have the Lowest temperature today?

City _____ Temperature_____

5. Temperature – International Cities

a. Which city is forecasted to have the Highest temperature today?

City _____ Temperature_____

b. Which city is forecasted to have the Lowest temperature today?

City _____ Temperature_____

6. Which area will have the world's worst weather today? Why did you choose this area?

7. Which area looks like it's going to have the best weather? Why did you choose this area?

9. Write a brief paragraph to answer the following questions:

Is your community receiving the average rainfall or snowfall?
How is the weather impacting the food supply?
How else does the weather impact the environment?

Part IV

1) What story or photo on the front page of the paper causes you the most concern about the environment? Why?

2) What story or photo in the local section of the paper causes you the most concern about the environment? Why? (List the page # and the heading of the article.)

3) What information on the weather page tells you about an environmental issue that could be a problem for the animals or plants in that area?

4) What other sections of the newspaper do you read? What section of the newspaper do you like to read first? How does reading the newspaper help our community address environmental issues? Be sure to support your answers.

2. Pollution:

Go Green Advertisements

Standards

NYS Standards: MST 1, 2, 4, and 7; ELA 1, 2, 3 and 4 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will observe how local and worldwide companies' commit to reducing energy and pollution by changing how products are manufactured or distributed.

Students will decide if a company's changes would persuade a consumer to choose its products or services over another company based on its commitment to help the planet.

Students will critically analyze an advertisement for purpose, content and design.

Vocabulary

Consumer, energy, pollution, recycled, eco-friendly, propaganda terms (such as assertion, bandwagon and testimonials), advertising design techniques (such as layout, focal point and color use)

Materials

Print or electronic edition newspapers
Newspaper archives and/or newspaper sales circulars

Activities

Students will search the newspaper for advertisements from companies that claim to be helping the environment by reducing use of energy, reducing pollution, using recycled products, or cutting down on waste. Some key phrases to look for in the ads include but are not limited to: "Go Green", "Green Initiative", "eco-friendly", "environmentally safe", "recycled", and "reducing energy".

Analyze the ad to see how a company is changing to help reduce energy or pollution. Discuss with a partner what effects the change might have on the environment.

Students can share their ad with the class and discuss whether they would choose this company's products or services based on its pledge to help save our planet.

Assessment

Students will be assessed based on their ability to find advertisements from the newspaper and verbally critique the company's claim to helping the environment.

Going Further

Find a product or service from a company that could be made more environmentally friendly. Then create an advertisement making the consumer aware of these changes. *(i.e. local ice cream stand switches to 100% recycled paper products, stops using plastic straws and utensils, and only uses 100% locally produced milk and flavorings to reduce carbon footprint).*

3. Climate: Using the Weather Page

Comparing Weather Data over Time

Standards

NYS Standards: Social Studies 3 and 5; MST 3, 4 and 6; ELA 1 and 3 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will collect data on weather in different cities.

Students will compare weather data with cities in different climate and latitudes.

Students will compare data with historical weather averages.

Vocabulary

Climate, weather, temperature, average, range

Materials

Newspapers
Tracking Weather Data Chart
Weather temperatures over time
Graph paper
World maps with city locations
Teacher-collected daily averages (suggested site: **http://www.weatherbase.com/**)

Activities

Note: This activity can be part of yearlong classroom data collection or for a shorter period of time. Students are assigned in pairs to find and record information found on the newspaper's weather page. This data is charted and graphed to show patterns over time. The data collected can be used to look at the relationship between weather conditions and events that are impacted by these conditions.

Discuss with students in what kind of climate they might want to live. Brainstorm what it must have been like to live during the ice age.

Discuss what would happen if the climate changes – and how that might affect their lives positively or negatively.

Ask students how scientists would determine if the climate was changing.

Hand out the Tracking Weather Data Chart. Students and teachers will review the data.

Refer student to the newspaper's weather page. Explore the weather page with partners. Create a list of the information found on the weather page.

The teacher will review the symbols, and ask students to find information from the chart. Teacher and students will find the table listing weather data for various cities

The teacher will record data for two cities for the class, showing how to complete the data chart.

Students will work on their own to collect data. The chart can be expanded to record more data over time.

Students will answer questions at the bottom of the data chart.

Partners will be assigned to use the weather page to find and record the daily high and low temperature and the weather conditions (sunny, cloudy etc.)

~Continued on page 10

Use graph paper to create a temperature graph, temperature on the vertical and day and date on the horizontal axis.

Students will also find articles in the newspaper related to effects of weather conditions and human responses to weather conditions that have an impact on the environment or on the use of natural resources.

Use the e-edition to find stories about past weather conditions that impacted your city, county or the state.

Assessment

Depending on grade level and complexity and duration of the weather study, the assessment can be as simple and formative as checking the successful completion of the graphing and charting of the data from the newspaper source and gathering information as students are working together using a rubric.

Going Further

Students will graph cities' weather data, then determine at what latitude the cities are located.

Students could track selected cities' weather over time using the newspaper, "Weather Temperatures Over Time" at **http://www.weatherbase.com/** or other sources.

Students will evaluate information collected to determine if there is a La Nina effect and will write a feature science story about their conclusion.

Use of the data gathered over time from the newspaper source can be the lead to further study, using the newspaper archives and other print and electronic sources, to more in-depth research on local effects of weather extremes and patterns, investigating weather and climate patterns and the effects of those patterns over time on topics of local, state, or national importance.

The possibilities of connecting many aspects of weather tracking to environmental issues are almost unlimited. (For example, cleanup efforts following the 2010 oil spill in the Gulf of Mexico was impacted by severe weather. While this doesn't seem like it has an immediate direct connection to communities in New York State, students can use data about weather patterns and effects of weather to predict outcomes and project impact or lack of impact on their communities and their lives.)

Tracking Weather for (city)_____

DAY	HIGH	LOW	WEATHER CONDITIONS
WEEK ONE DATES			
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
WEEK TWO DATES			
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			

1. What is the average high recorded?_____ Average low? _____
2. During what season was the data recorded?_____ Do these temperatures seem normal?_____
   Check your newspaper, its web-site, or other weather-related sites such as **http://www.weatherbase.com** to justify your answer.
3. Write an essay listing three reasons that support your answer.

Tracking Weather

CITY	STATE / COUNTRY	H-L WEATHER	H-L WEATHER
Anchorage	Alaska		
Seattle	Washington		
Los Angelos	California		
Miami	Florida		
Chicago	Illinois		
San Juan	Puerto Rico		
Baghdad	Iraq		
Beijing	China		
Ottawa	Canada		
Sydney	Australia		
Buenos Aries	Argentina		

1. What city had the **worst** weather this week? _____

   Describe the weather and tell why you would or would not want to go there.

2. What city had the **best** weather this week? _____

   Describe the weather and tell why you would or would not want to go there.

3. Using weather map in the newspaper, **describe** the weather in the following states. Be sure to use weather data and other information in your description. Also include geographic characteristics in your description.

New York

Florida

Texas

California

Washington

Michigan

Tennessee

Colorado

4. Resources:

What's eco-friendly in your river?

Standards

NYS Standards: Social Studies 3, 4 and 5; ELA 1 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will be able to classify different types of rivers and their uses.

Student will recognize examples of the types of land uses by scanning newspapers.

Students will demonstrate understanding of how water is impacted by man by assembling a river puzzle.

Note: By assembling a "river" from puzzle pieces, students will develop awareness of how people and wildlife use and depend on rivers; how actions within a river system can affect the entire system; and that people need to take action to maintain the vitality of river systems.

Vocabulary

Nature, agriculture, Industry, pollution, fertilizer, pesticides, storm drains, wetlands

Materials

Newspapers, handout "River Puzzle" (2 sets for each student/group), construction paper, glue, crayons, scissors.

The following online resource will provide the teachers with additional information on water quality.

http://ga.water.usgs.gov/edu/waterquality.html

Activities

Ask students to think about where the water they use at home and school comes from? Discuss that most drinking water comes from lakes or rivers and pose questions such as: What impacts rivers? What makes them clean or dirty? Are there other uses for rivers, lakes besides drinking water?

Pass out the puzzle pieces to students who can work individually or in groups. Have the students group the puzzle pieces according to the following land use categories: Nature, Agriculture, Industry, Recreation, and Power.

After the students have classified their puzzle pieces, have them take 5 pieces of construction paper, and write the Category names across the top. Then have students glue the pictures to each category.

On another set of construction paper have the students find examples for each category in the newspaper. Each day students would review the newspaper and cut out examples of each category (Using pictures, articles, headlines etc.).

Students working in groups would then review each category and list the positive and negative impacts the land use could have on water quality.

Students or student groups each review "River Example - What is happening and impacts" on page 18.

Students describe next to each land use - what is happening and impacts.

Students could use crayons to color the pictures, and color the stream using blues for clean water, green colors to represent impact of lawn fertilizers, and brown to represent sewage, etc.

~Continued on page 15

Students now take all of the puzzle pieces and assemble them into a river system. The only requirement is that the "Source" goes first, and the "Mouth" goes last. Students assemble their puzzle pieces, and then glue their final plan onto construction paper.

Students can then take photos, articles or headlines from newspapers to attach near each land use to provide relevant examples from their community or other communities from around the world.

Assessment

The teacher will review information while students are putting their puzzle together to check for understanding.

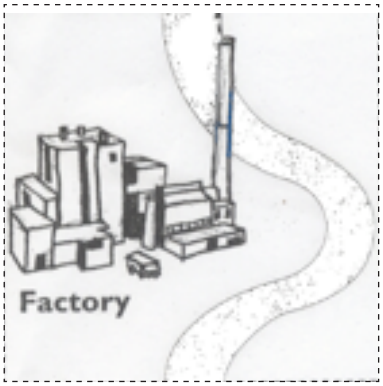
Students will be able to describe their river systems to their classmates.

Going Further

Allow students to explore this concept further by playing the computer simulation game - Sim City.


Megalopolis


Mouth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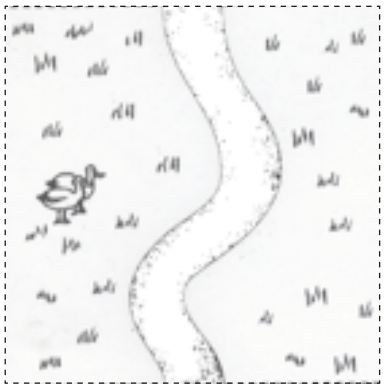
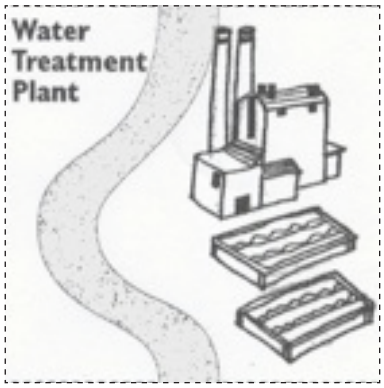
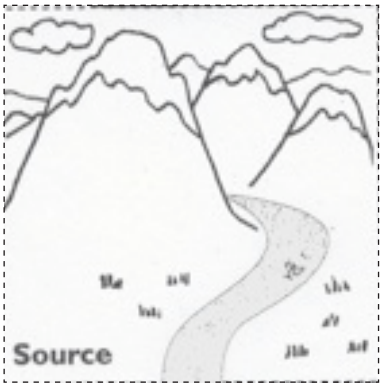
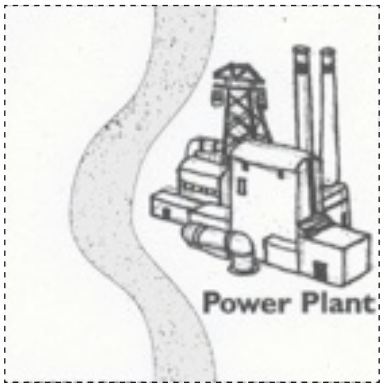
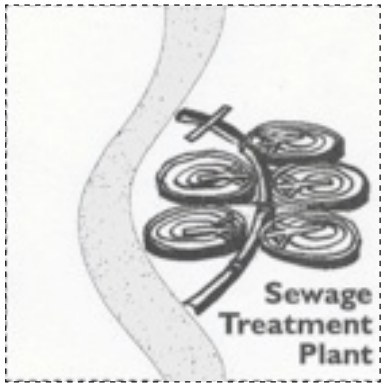
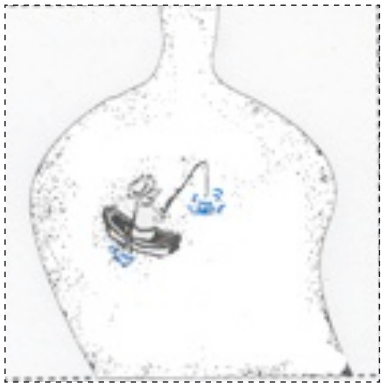


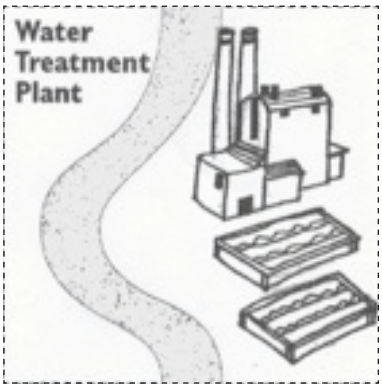

Water
Treatment
Plant


Source









Portions of this lesson were adapted from a lesson originally in Geography Action! Rivers 2001, National Geographic Society.

River Example: What is Happening and Impacts

Name_____ Date_____

Directions: Use different shades of blue and other colors to show impacts and changes in the river water quality.

	What is happening to the water? What impact will it have on the next area?
	What is happening to the water? What impact will it have on the next area?
	What is happening to the water? What impact will it have on the next area?
	What is happening to the water? What impact will it have on the next area?
	What is happening to the water? What impact will it have on the next area?

5. Energy Conservation:

Political Action

Standards

NYS Standards: MST 1, 2, 4 and 7; ELA 1, 2, 3, 4; Social Studies 3, 4 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will collect information on renewable resources and decide how to use them in the community.

Students will discover ways families can help lower energy use in their homes every day.

Vocabulary

Renewable, nonrenewable, reduce, reuse, recycle, fossil fuels, wind power, solar power, hydroelectric power, geothermal power, biodiesel

Materials

Newspapers (print and electronic) especially articles on alternative energy resources, articles on current energy resources used in cities/towns, and articles on reducing energy use in homes

Activities

Inform each student that he or she is now the "Mayor" of their city or town and is responsible for speaking to the people of the community on the importance of saving energy. The city (or town) has a tremendously large energy bill and the Mayor needs help from all of the residents to reduce the energy bill. Each student must write a speech to convince people to save energy and to reduce use of fossil fuels or other non-renewable sources of energy. Each student must include everything that is on the "Organizer for Essay" sheet (found on next page) and write a 5-paragraph essay that includes an introduction, three paragraph body, and conclusion.

Students will search the newspapers (print or electronic), newspaper archives, and other sources for articles on alternative energy resources being used locally. They will also search for articles on ways families can reduce their energy use and recycle at home.

Students will then fill out the "Organizer for Essay" page using articles and other resources.

Students will use the "Organizer for Essay" as a guide to create a 5-paragraph essay.

Each student, playing the role of Mayor, will present his or her speech to the class to convince "their residents" of the importance of saving energy. (Allow students to be creative in their Mayor role. Each student may dress the part and/or create their own Mayor personality. Props, posters, or models to help him or her "sell" their energy saving ideas to the residents are encouraged.)

Create a press release giving the citizens of the town all the information they'll need to attend the Mayor's speech. They must include the Who, What, Where, When and Why information for the speech. The press release should be no more than one page in length and should "grab" the attention of the readers to get them excited about attending.

Assessment

Students will be assessed based on the completion of organizer, essay, and speech. Additional credit can be given for props, posters, the press release and models.

Going Further

Students will write letters to the editor of the local newspaper on the importance of conserving energy.

Students will write a feature story (as a reporter 10, 25, or 50 years from now) detailing the effects of energy conservation.

Organizer for Essay

Write the definitions of each:

Renewable _____

Nonrenewable_____

Reduce_____

Reuse_____

Recycle_____

Fossil Fuels_____

Wind power_____

Solar power_____

Hydroelectric power_____

Geothermal power_____

Biodesiel_____

We need to reduce the use of fossil fuels or other non-renewable sources of energy because (give 2 reasons)

a._____

b. _____

We need to use other resources like _____ and _____because

a._____

b. _____

Ways families can help save energy at home (be creative and specific!)

a. _____

b. _____

c. _____

d. _____

e. _____

6. Energy:

Discovering Energy Resources

Standards

NYS Standards: MST 1, 2, 4 and 7; ELA 1, 2 and 3 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will collect and analyze important and applicable information from a technological resource.

Students will work to understand current and alternative energy resources available to the U.S.

Students will discuss and debate the advantages and disadvantages of these resources.

Vocabulary

Energy sources, geo, bio, hydro, thermal, electric, diesel, solar

Materials

Newspapers (print or electronic) or newspaper archives - especially newspaper articles on alternative and current energy resources used

Activities

Students will search newspaper articles, the electronic newspaper archives and other print and online resources on the following topics: oil, coal, natural gas, geothermal energy, biodiesel, nuclear energy, solar energy, wind energy and hydroelectric energy.

Working with a partner or alone, students will choose one energy resource and write a brief summary answering the following questions:

- What is the energy resource and what is it used for?
- What are the advantaged of this resource?
- What are the disadvantages of this resource?
- Do you think we should use it as a main energy resource in our city? Why or why not?

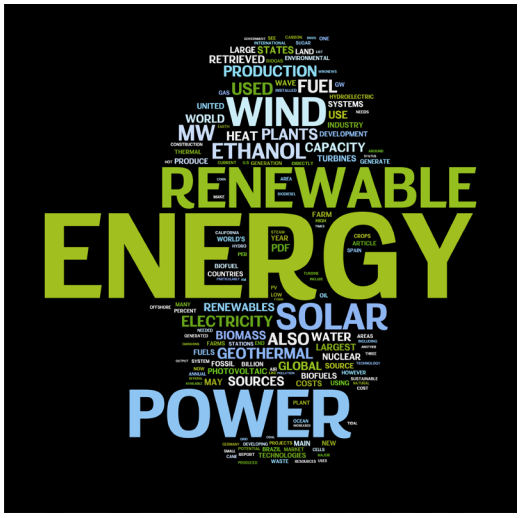
Students can share their energy resource summary with the class. The class can discuss the advantages and disadvantages of each resource and decide whether we should use it a major energy supply in the city.

Assessment

Students will be assessed based on their ability to thoroughly answer all questions about the energy resource they chose in their summary.

Going Further

Students will create an advertising brochure highlighting the various energy sources, including advantages and disadvantages of each resource. Students will write opinion letters to the editor asking local politicians to support an alternate energy source.



7. Living Environment/Ecology:

Creative Creature Project

Standards

NYS Standards: MST 1, 2, and 4; ELA 1 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will identify the ways animals adapt to their environment to survive and reproduce.

Students will develop an understanding of an organism's role in its ecosystem.

Vocabulary

Habitat, niche, adaptation, predator, prey, endangered, reproduce, food chain

Materials

Newspapers, colored pencils, scissors, glue, white paper, e-edition newspaper

Activities

Students will find articles about animals and their adaptations in the newspaper (print or electronic) and other sources to discover ways animals survive in their habitat.

Students will fill out the "Creature Guide" to create their own animals burrowing adaptations from other animals or making up their own.

Students will then create a picture of their creature in its habitat using pieces of pictures or illustrations found in the newspaper or other sources

The students will then write a 5-paragraph essay using their "Creature Guide" as an outline. They should include an introduction and conclusion paragraph.

Students will take the role of a scientist who will present their newly discovered creature to the class.

Assessment

Creative Creature Project – Grading Rubric

Final Product & Presentation = 100 points

"Creature Guide" Completed	_____/30 pts
Essay completed and all parts of creature guide used	_____/40 pts
Picture is colored and shows creature in habitat	_____/10 pts
Presentation is well planned, organized, and clearly presented	_____/20 pts

Going Further

Students will create a three-dimensional model of their picture out of recycled materials or paper mache.

Students will make a book with illustrated pictures about the creature's habitat, its feeding habits, etc., as compatible with grade level curriculum and/or student interest.

Students will write a press release for the new creature's discovery announcement. The press release must include all the "5 W's" information: Who, What, When, Where, Why, be just one page in length and be able to "grab" the attention of the reader.

Students will dramatize the development and announcement of the press release: newspaper reporter, photographer and editor and produce a "mini" front page covering the event that expands the press release to a "Front Page Story"

Students will draw a map locating where the creature was discovered in your community, state, country or world.

Describe the environmental factors (pollution, global warming, acid rain) that may have contributed to your creature's physical appearance or adaptive changes from another form.

"Creative Creatures" Guide

Name_____ Date_____

You are a scientist that just discovered a new species deep in the heart of _____ (choose a place)! You have been studying it for weeks, taken pictures of this new organism, and observed its habits. Now you are about to show the scientific community your discovery! To help you properly inform everyone of your creature, please complete the "creature guide" before writing your essay and presenting your discovery to the class.

In order for an organism to survive, it must adapt to its environment. To start, think about where the creature lives, what it eats, what eats it, how does it blend into its environment, how does it find a mate, how many babies it has, how does it defend itself…

This project must include:

- a colored picture of your creature in its habitat formed from newspaper pictures or illustrations of other animals' parts or objects
- the "creature guide" filled out
- an essay based on your "creature guide" findings of at least 5 paragraphs including an introduction and conclusion
- a well planned presentation

Remember: BE CREATIVE!!!

Animal's Common Name: _____

Scientific Name: _____

Define these vocabulary words to help you answer the questions in the guide:

Habitat: _____

Niche: _____

Adaptation: _____

Predator: _____

Prey: _____

Endangered: _____

Reproduce _____

Food chain: _____

What habitat does your creature live in? (forest, desert, ocean, rain forest, tundra, mountains)	
What is your creature's niche or job in the ecosystem? (What other animals does it interact with and what is the creatures affect on the ecosystem?)	
What does your creature prey upon? What is its predator? (What does it eat? How often does it eat? How much does it eat? What eats your creature?)	
What general adaptations does it have? Explain. (Does it live by itself or in a group? Is it active at night or during the day? Does it take care of its young? How does it find a mate?)	
Does your creature have an abundant population or is it an endangered species? Why?	
Defense Adaptations: Characteristics that help your creature survive in its habitat and describe why it needs them! (spines, claws, poison, wings, camouflage)	
Competition (Whom does your creature compete with? Why and how do they compete?)	

Communication (How does your creature communicate? With who and why?)	
Life Span: How long does your creature live? Why does it die?	
Dimensions: How tall or long is your creature?	
Reproduction: How many babies or offspring does your creature have? How often does it reproduce?	
Draw a food chain for your creature: be sure to include producers, consumers, and decomposers	
BONUS: Draw a food web for your creature	

8. Environment:

Food Chain Gang

Standards

NYS Standards: MST 1, 2, 4, and 5; ELA 1, 3, 4 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Student will be able to identify producers, consumers, and decomposers within an ecosystem and understand the role each has in that ecosystem.

Students will create a food chain and food web to show the transfer of energy from organism to organism.

Vocabulary

Producer, consumer, decomposer, food chain, and food web, carnivore, herbivore, onmivore

Materials

String, index cards, newspapers, glue, scissors

Activities

Read the introduction on the activity sheet and discuss with students.

In groups of 5, students will search through newspapers (print or electronic) for pictures or words to represent of producers, consumers, and decomposers. They will cut them out and glue them onto index cards. Each group must collect one producer, several consumers, and one decomposer.

Then each student within the group of five will take an index card and stand in a line to show a food chain starting with a producer and ending with a decomposer. The group will be connected with a string.

Remind students that each group must describe their food chain using the terms in the activity.

Assessment

Students will be assessed based on correct placement of cards, verbal explanation of food chain, and completion of discussion questions

Going Further

Using the newspaper or other print and electronic sources, find information about the environmental impact of any member of a food chain that is in the news and describe why it is newsworthy and what impact on its place in the food chain the issue may cause to develop, locally now or in the future.

www.sheppardsoftware.com/content/animals/kidscorner/foodchain/foodchain.htm – an online resource about food chains including an interactive game for younger students

Name_____ Date_____

Food Chain Gang

Introduction:

Do you like to play games? If you do, you will need energy. Every time you run or jump, you are using up energy in your body. How do you get the energy to play? You get energy from the food you eat. Similarly, all living things get energy from their food so that they can move and grow. As food passes through the body, some of it is digested. The process of digestion releases energy.

A **food chain** shows how each living thing gets its food. Some animals eat plants and some animals eat other animals. For example, a simple food chain links the trees & shrubs, the giraffes (that eat trees & shrubs), and the lions (that eat the giraffes). Each link in this chain is food for the next link. A food chain always starts with plant life and ends with an animal.

Plants are called **producers** because they are able to use light energy from the Sun to produce food (sugar) from carbon dioxide and water.

Animals cannot make their own food so they must eat plants and/or other animals. They are called **consumers**. There are three groups of consumers.

1. Animals that eat ONLY PLANTS are called **herbivores** (or primary consumers).
2. Animals that eat OTHER ANIMALS are called **carnivores**.

   carnivores that eat herbivores are called secondary consumers

   carnivores that eat other carnivores are called tertiary consumers
   e.g., killer whales in an ocean food web …

   Phytoplankton → small fishes → seals → killer → whales
3. Animals and people who eat **BOTH** animals and plants are called **omnivores**.

Then there are decomposers (bacteria and fungi) which feed on decaying matter.

Example of food chain: grain → mouse → cat → coyote → bacteria

Question: What is the relationship between organisms in an ecosystem?

Procedure:

Part 1:

1. Form groups of 5 students.
2. Look through the newspaper for pictures or words that describe producers, consumers, and decomposers. Cut them out and glue them onto the index cards.
3. Each person should have an organism card in the group. You are now that organism
4. Line up in order to make a food chain.
   (Remember: always start with a producer and end with a decomposer)
5. Attach a string (representing energy being transferred) going from the first person in the food chain to the next person and so on up to the last person in the chain.

6. Be prepared to describe to the teacher your food chain, using the following words: producer, primary consumer, secondary consumer, tertiary consumer, scavenger, decomposer, carnivore, herbivore, and omnivore. burning leaves

Part 2:

7. Now, we are going to make a **HUGE** food web!
8. The entire class is going to arrange themselves into a food web using string.
9. Work it out as a group. The producers will be first and attach with a string to the primary consumer that eats them. However, one consumer, for example, a mouse, might eat seeds **AND** grass, so there should be string connecting the grass and seeds to the mouse.
10. Attach additional string wherever one animal consumes another.
11. Once the web is created, show what happens when an organism is removed from the web.

Complete discussion questions sheet.

Name_____ Date_____

Discussion Questions:

1. What type of organism does a food chain always begin with? Why?

2. What happens if one member of a food web disappears?

3. Can more than one organism eat the same food? Would a food chain or a food web show this?

4. At what part of the food web do you always find bacteria and nutrients? Explain why.

9. Environment:

Identifying Human-Environment Interactions

Standards

NYS Standards: ELA 1; MST 2 and 6; Soc. Studies 3 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Student will grow to understand the concepts of the five (5) themes of geography.

Students will explore and explain the theme of Human-Environment Interactions.

Students will share examples of Human-Environment Interactions through newspaper articles and pictures.

Students will connect information across content areas and common themes.

Vocabulary

Movement, human-environment interaction, location, place, region

Materials

Newspapers, construction paper, glue, scissors
Teacher Reference on five (5) themes of geography
One possible resource can be found online at **http://geography.about.com/od/teachgeography/a/5themes.htm**. Other resources on the five themes of geography can be found by searching Google Books.

Introduction

In studying human-environment interaction, geographers look at all the effects—positive and negative—that occur when people interact with their surroundings. Sometimes a human act, such as damming a river to prevent flooding or to provide irrigation, requires consideration of the potential consequences. The construction of Hoover Dam on the Colorado River, for example, changed the natural landscape, but it also created a reservoir that helps provide water and electric power for the arid Southwest. Studying the consequences of human/environment interaction helps people plan and manage the environment responsibly.
To understand and explore these effects, students will scan the newspaper for examples of human-environment interactions.

Activities

Students list ways that people affect their environment every day (for example, driving cars, using water, disposing of garbage, smoking cigarettes). Make a second list of ways people affect their environment through seasonal activities (for example, watering lawns, burning leaves, fishing and hunting). Make a comparison chart of the two lists and have students discuss which activities are more harmful or more helpful to their environment. Discuss the findings and have students suggest ways that people can change their behavior and improve their environment.

Review the five (5) themes of geography with the students. Explain and discuss in depth the theme - Human-Environment Interaction.

Direct students to review the front page of the paper and other pages, find and share examples of human-environment interaction. Review the criteria below with the students to insure that the example fits human-environment interaction. This list could be posted on a blackboard, overhead, or given as a handout.

Examples of how humans and the environment affect each other.

–We depend on it.

- People depend on rivers for water and transportation.

~Continued on page 28

–We modify it.

- People modify our environment by heating and cooling buildings for comfort.

–We adapt to it.

- People adapt to the environment by wearing clothing or using other tools suitable for summer (shorts) and winter (coats), rain (umbrella) and shine (sunscreen).

Teacher and students review the newspaper to find other examples. The class reviews the criteria for acceptance as an example of human-environment interactions - and in which category it fits in.

Students may work as individuals, in pairs or groups. Students label three pieces of construction paper - "We depend on it", "We modify it", "We adapt to it". Students collect and paste examples from the newspapers to each of the categories. Students should gather news headlines, feature stories, sditorials, photographs/illustrations, and advertisements that show one of the three concepts of Human-Environment Interactions.

Assessment

Teacher reviews information while students are gathering examples to check for understanding.

Students share their results with classmates. Examples of student work are posted in the classroom.

Going Further

Have students find examples of the other themes of geography from the newspaper.

Students go to their neighborhood and draw examples they find in their local areas.

10. Environment:

Transportation

Standards

NYS Standards: ELA 1 and 4; MST 4; Soc. Studies 1 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Student will be able to identify modes of transportation and the possible environmental impacts (both positive and negative) of each mode.

Students will be asked to justify a position regarding the use of a mode of transportation supporting its use.

Students will write a position paper and/or participate in a debate regarding modes of transportation.

Vocabulary

Vehicle, transportation, emissions, alternate fuels (biodiesel, ethanol, electricity, hydrogen and compressed natural gas), facts, opinions, environmentally-friendly, green

Materials

Newspapers (including classified ads), air quality data and vehicle emissions data

Activities

Students will explore the history of transportation, including wagon trains and the pony express, canal and steamboats, the development of automobiles, trucks, trains and airplanes, particularly in terms of the ability to transport goods across state and the nation. Use the graphic organizer "Transportation Through Time" to organize the sequence of developments in transportation.

Students will compare costs of vehicles in the classified ads and will compare emission data of the to determine the best value for a personal vehicle, such as a car, motorcycle or truck.

Students will create charts that explain the costs associated with different kinds of transportation, including purchase price, maintenance, and fuel.

Students will use the newspaper, newspaper archives and other sources to find stories about transportation and alternative fuels and will determine how the types of transportation and fuels affect the environment. They will develop solutions to correct any negative effects.

Students will also determine which type of transportation is best for the environment and write an opinion letter to the newspaper stating their position and participate in a debate with classmates. Students can also be assigned a role from which to write the paper *(i.e. automobile manufacturer, car salesperson, environmental scientist, consumer, reporter)*.

Assessment

Teacher reviews information while students are gathering information to check for understanding.

Students share their results with classmates. Examples of student work are posted in the classroom.

Written pieces and verbal performances will be evaluated using a rubric. Positions and statements must be supported with facts.

Followup

Based on what you've learned and technology advancements you've read about in the newspaper, predict how transportation will evolve in the future.

Going Further

Students will determine what it means to be "environmentally-friendly" or a "green" vehicle and will develop a newspaper ad. The ad should include elements of desgn and benefits of the vehicle.

Students will develop comparison charts and graphs using the major types of transportation.

Name_____ Date_____

TRANSPORTATION THROUGH TIME

Date	Brief description of the type of transportation
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11. Ecology:

Food, Glorious Food!

Standards

NYS Standards: ELA 1; MST 3 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Student will be able to identify environmentally-friendly and locally grown foods and the possible environmental impacts (both positive and negative) of different types of foods.

Students will create a family grocery list and calculate accurate pricing.

Student will be asked to adjust recipes ingredients to different quantities.

Vocabulary

Locally-grown, environmentally-friendly, packaging, recyclable, organic

Materials

Newspapers (including grocery ads and weekly recipes), calculators

Activities

Have students list everything each ate and drank at his or her last meal. As a class, determine the details about the packaging the food came in. Discuss what value the packaging added to the product, and if the packageing was recyclable. Ask students to think about what happens to the packaging when the food is consumed and how food choices might reduce the amount of trash we generate. Brainstorm a class list of foods that would have very little or no packaging or packaging that is recyclable.

Have students think about how food gets to our tables. Students should consider the cost of the food against the environmental, social and economic cost for these food purchases. Discuss the advantages and disadvantages of transporting food in terms of air pollution, energy and global climate change.

Use the newspaper (print or electronic) or other sources to find recipes. Adjust the recipes to larger and smaller servings. Have students determine the costs to prepare the original recipe, the adjusted recipes and also determine the impact on the environment.

Use the newspaper grocery ads and create a shopping list of the foods that are environmentally-friendly. Calculate the costs for purchasing foods for

~Continued on page 32

their family meals. Compare the costs of items grown locally with items grown further away.

For more resources on food and the environment go to **www.gardenabcs.com/uploads/foodmiles.pdf** (Food Miles: Growing Local Food Connections Grades K-8)

Assessment

The teacher reviews information while students are gathering information to check for understanding.

Students share their results with classmates. Examples of student work are posted in the classroom.

Teacher reviews accuracy in calculations.

Written pieces and verbal performances will be evaluated using a rubric.

Going Further

Have students keep a log of costs for specific items (such as fruits and vegetables) over a period of several months. Use the data to determine trends, find mean, median, mode, range, and seasonal pricing trends.

Have students compare costs of fresh, frozen or canned foods. Use newspaper ads over time to record information.

Have students research the impact of pesticides, solar energy, and organic production on food. Find articles in the newspapers, newspaper archives and other sources that address these issues. Write an opinion piece to send to the newspaper or conduct a debate on the topics.

12. Ecology:

Picture This!

Standards

NYS Standards: ELA 1 and 4; MST 1, 4 and 6 – *See Standards Chart for Common Core State Standards alignment*

Objectives

Students will learn to identify habitats in a local area.

Students will analyze and interpret information from a photograph.

Students will capture pictures of various habitats in the local area

Vocabulary

Habitat, caption, photograph, symbiosis

Materials

Newspapers, cameras

Activities

The teacher will introduce a newspaper photo to students and review vocabulary. The teacher will lead a discussion about what students see in the photo, and what impact the actions observed in the photo might have on the environment.

The teacher will also read the caption aloud to students and ask them to explain the caption in their own words.

The class will then write a caption for the picture using one of the environmental impacts generated during their discussion.

Students will also review the headline and story of the article and discuss the elements used in creating the headline and the article. The class will develop a new headline and story that supports the new caption that was written about the environment.

In small groups, the students will explore the newspapers over a period of time and collect other pictures that show plants, animals and humans in their environment. Students will cut out the pictures, including the captions and stories. Students will create a portfolio of the photos, including a written narrative of each photo that includes a new caption, headline and brief story about the environment. Each group will share their portfolios with the entire class.

Students will use cameras to capture pictures of habitats in their local area. This can be done as a field trip around the school or as a homework assignment. Photos can be printed or projected and students will write captions, headlines and stories about the interactions noted in the photo and the possible environmental impacts.

Assessment

Teacher reviews information while students are gathering information to check for understanding.

Students share their results with classmates.

Written pieces and verbal performances will be evaluated using a rubric.

Going Further

Students can develop a brochure, poster, or class newspaper about the features of a local habitat.

Students can write letters to the newspaper expressing concerns over local issues identified through this lesson.

Students can create a collage of photos from different areas in the country or world obtained from newspapers (print or electronic) and other sources that show different habitats and environments.

Online resource to newspaper websites: **www.Newspapers.com**