

They Write the Songs:

Using Writing-to-Learn Strategies to Develop Insight about Environmental Health Topics



Grades 6–12

Using AIT Products

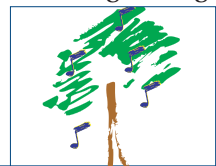
- *Energy, the Pulse of Life*, program 5, “A Changing Environment”
- *Energy, the Pulse of Life*, program 6, “Some Brighter Ideas”
- *Cracking the Code*, program 5, “Seeds of a New Era”
- *Energy, the Pulse of Life*, program 4, “Water, Wind, and Watts”
- *Front Row Center*, program 15, “The Songwriter: George David Weiss”

Overview

This lesson utilizes the “writing-to-learn” instructional strategy in which students explore and acquire deep understanding of informational texts through creative writing and reflection. Writing-to-learn activities can range from journal writing to interactive learning logs to creative note-taking. The strategy highlighted in this lesson will involve students in a collaborative group effort to research the environment’s impact on human health and write new lyrics to one of their favorite songs to create a new song designed to persuade listeners to help solve the problem.

Students will learn about three persuasive techniques, discover persuasive metaphors and hid-

den meanings in the lyrics of a well-known song, and examine some clever songs about energy, efficiency, and the environment. They will conduct research to develop insight about a chosen environmental health topic and demonstrate deep understanding through creative song writing.



“We are changed as we
change our environment.”

—Proverb

Objectives

- Define and apply three terms for persuasive argument appeals: *pathos*, *ethos*, and *logos*.
- Listen to, analyze, and describe song lyrics for meaning and persuasive arguments.
- Participate in a collaborative research project to gather information about an issue related to environmental health.
- Create original lyrics for an existing song, matching text to the rhythm of the melody.

Vocabulary

environmental health	melody
<i>ethos</i>	<i>pathos</i>
<i>logos</i>	persuasive arguments
lyrics	rhythm

Preparation

Materials Needed

- AIT video *Energy, the Pulse of Life*, “A Changing Environment”—CUE the tape to the beginning of the program (about 8.5 minutes in total length).
- OPTIONAL: An overhead transparency or other projection copy of the first song on the **Lyrics to Moxy Frivious Songs** reproducible handout
- Classroom copies of the **Lyrics to Moxy Frivious Songs** reproducible handout
- AIT video *Energy, the Pulse of Life*, “Some Brighter Ideas”—CUE the tape to approximate time code 05:01 (less than 2 minutes in total length).
- AIT video *Cracking the Code*, “Seeds of a New Era”—CUE the tape to approximate time code

08:35 (two separate clips, about 2.5 minutes in total length).

- AIT video *Energy, the Pulse of Life*, “Water, Wind, and Watts”—CUE the tape to approximate time code 06:00 (about 40 seconds in total length).
- OPTIONAL: An audio or video recording of the Louis Armstrong song, “What a Wonderful World” (see Resources for more information)
- AIT video *Front Row Center*, “The Songwriter: George David Weiss”—CUE the tape to approximate time code 02:12 (less than 3.5 minutes in total length).

Planning Notes

Before beginning this lesson, you might want to gather recordings of popular songs or music from television commercials that illustrate some or all of the following purposes. See the Resources section for online versions of many examples. Those versions contain video, but you may choose to have students listen to the music only.

- Songs that contain persuasive techniques (appeals to the audience’s emotions, logic, character, or ethics), for example:

- * Patriotic songs or anthems
“The Star-Spangled Banner”

- * Protest songs
“Big Yellow Taxi”

- * Inspirational Music
“We Shall Overcome”

- * Ballads
“Mercy, Mercy Me (The Ecology)”

- Songs that contain the same melody but different lyrics, for example:
 - * The 1971 Coca-Cola song, “I’d Like to Teach the World to Sing,” which was later rewritten and released as a pop song
 - * Weird Al Yankovic’s songs which spoof popular music

In addition to the recordings, you might wish to find and duplicate the lyrics to some or all of the songs you collect. See the Resources section for sites that offer printable lyrics to popular songs.

Time

This project will take about four 60-minute class periods, in addition to the out-of-class time needed to perform research, write lyrics, and rehearse groups’ songs. (The fourth class period is a performance day with no other activities or assignments.)

Procedure—Day 1

Introduce Topic: People and the Environment

In this lesson students are going to be looking at how people impact the environment as well as how the environment can affect human health. To get students ready for the first part of the lesson, lead a discussion about students’ opinions on the advantages and disadvantages of using gasoline-powered automobiles.

Pre-Viewing Activity

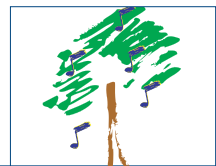
Next, conduct a quick (30- to 45-second) brainstorming session by asking students to list alternatives to using fossil fuels for our energy needs, not only for powering vehicles but also for other energy uses. Write all the suggestions students propose on the board or chart paper, leaving room next to each item. Then ask students to name the advantages and disadvantages of each alternative, and list those next to each.

Video

Prepare students for watching the first AIT video from *Energy, the Pulse of Life* by asking them to watch for additional information they might add to their list of fuels as well as advantages and disadvantages for the new ideas. Encourage students to take notes during the program. Show the entire video program, “A Changing Environment.” PAUSE at approximate time code 05:04, after the scientist says, “. . . in the last billion years,” and before the scene changes to a waterfall. Discuss the harmful byproducts of fossil fuels, noting any additional problems students hadn’t mentioned in their earlier discussion. Then PLAY to the end of the program. (NOTE: Return the video to the song “Energy Blues” at approximate time code 06:22 to have it ready to play again during Day Two.)

Return to the list of alternative fuels and work together as a class to add to the list, making note of advantages or disadvantages that students discovered from the program. Now begin a discussion about how the video portrays the information. What features of the program did students find the most instructional: the narration, the graphic animations such as the one showing the greenhouse effect, or possibly the song?

Howard Gardner’s Theory of Multiple Intelligences describes people who display greater sensitivity to sounds, rhythms, tones, and music, and who may learn best when they can use songs or rhythms to develop under-



“Songwriting is a learning process.”

—Sherrill Blackman

standing of new information. The person who produced both *Energy, the Pulse of Life* and *Cracking the Code* wrote the lyrics for the songs in those programs to help students who are musically inclined better grasp the concepts he was trying to teach. He selected the Canadian folk-rock band Moxy Früvous to write the melodies and perform the songs for his programs. Students will be looking more closely at this song as well as other songs in this series later.

Class Discussion: **Learning about the Environment**

As a class, return to the list of fossil and alternative fuels and sort the advantages and disadvantages for all of the fuel sources, listing them as having “human health impacts” or “other impacts.” Ask students to discuss how our energy choices affect the environment and how the environment then impacts human health. Encourage students to debate about which problem they consider the biggest or the most urgent danger to human health.

Assignment

Have students visit the Web site of Medline Plus to review **Environmental Health Topics from A to Z** (see the Resources section for the URL). Ask them to explore the topics at that site and then select at least two environmental health topics that interest them. They should be prepared to explain why they are interested in that topic in the next class period.

Procedure—Day 2

Review/Reflection

Divide the class into small groups and have students share their two chosen topics of environmental health, explaining why those topics interest them. Allow about 10 minutes for this discussion before bringing the class back together. Begin dividing the class into groups based on the environmental health topics they selected. If possible, allow students to work on

their first topic choice, but try not to have too many students in one group. Ideally, groups should comprise four or five students.

Introduce New Topic: **Songs for Persuasion**

Either project or distribute copies of the lyrics for “Energy Blues” from the **Lyrics to Moxy Früvous Songs** reproducible handout and have students follow along as you replay the song portion of the video shown on day one, beginning at approximate time code 06:22 and ending at about 07:55. Briefly discuss the genre of the music (1950s rock and roll) and how the costumes and setting of the song provide a visual enhancement (“ducktail” hairstyles, the 1960 Pontiac Parisienne convertible, the uniformed gas-station attendant).

Write “Persuasive Techniques” on the board or chart paper and list the following terms below it: *logos*, *pathos*, and *ethos*. Explain that persuasive techniques are what politicians, salesmen, and others use to attempt to convince an audience to agree with them. The three Greek words describe the three main categories of persuasive techniques: *logos* is the appeal to logic; *pathos* is the appeal to emotions; and *ethos* is the appeal to character. Ask students if the singers in “Energy Blues” are appealing to the audience’s logic, emotions, or character. **OPTIONAL:** Have students listen to and discuss examples of songs that attempt to persuade or influence the audience in different ways. (See YouTube examples in the Resources section).

- **PATHOS:** Marvin Gaye’s “Mercy, Mercy Me (The Ecology)” or “The Star-Spangled Banner” (or other song that appeals to emotions)
- **LOGOS:** Joni Mitchell’s “Big Yellow Taxi” (or other song that appeals to logic)
- **ETHOS:** Mahalia Jackson’s “We Shall Overcome” (or other song that appeals to character)

Video

Prepare students for watching the program from the AIT series *Front Row Center* by explaining that songwriters often insert a hidden message in the songs they write, even in songs that don't sound persuasive. Ask if they have ever heard the Louis Armstrong song "What a Wonderful World." (If possible, you might want to play a recording of this version of the song. See Resources for a link to a YouTube video of Armstrong performing the song.)

Have students watch the video, "The Songwriter: George David Weiss," beginning at approximate time code 02:12 (as the scene changes and the host begins, "You wrote another song called 'What a Wonderful World' that Louis Armstrong recorded . . ."). STOP the tape at approximate time code 05:37, after Weiss says, ". . . and if you like the song, and if the thought hits you, *maybe* . . . maybe it might affect you later in life."

Ask students if they realized the song was a persuasive argument before they watched the video. Discuss how Weiss used metaphors in his song to persuade people to respect diversity and celebrate differences. You may want to return to approximate time code 03:49 and allow students to listen to the songwriter's motives one more time. Which appeal (*logos*, *pathos*, or *ethos*) did Weiss use?

Group Work Assignment

Have groups work together to research information about the environmental health topic they selected, beginning with any links they find at the **Environmental Health Topics from A to Z** Web site. As they research, groups should be looking for logical, emotional, and ethical information they can use in a persuasive argument. They might find statistics, projections, or personal stories that illustrate the topic.

NOTE: Depending on your students' abilities and whether the research will be conducted during or outside class, the amount of time and

supervision you wish to provide for the research will vary. Don't begin Day Three activities until groups have completed their research.

Procedure—Day 3

NOTE: This activity should only be conducted after students have completed their research on their chosen environmental health topics. Depending on how much time you allowed for research, it may take place several class periods after Day Two.

Review/Reflection

Review the three persuasive techniques discussed in Day Two (*logos*, *pathos*, and *ethos*) and ask students to name some favorite songs that use one or more of the techniques to persuade the audience to agree with a songwriter's point of view. Ask students to consider different music genres and match them with the types of appeal that seem to fit them best (for example, patriotic music most often appeals to emotions, rap often targets character or ethics, and so on).

Introduce New Topic: Adapting song lyrics

Ask students if they've ever heard two songs with different lyrics but the same melody. You might want to have them listen to some examples you collected or those found in the Resources section, such as the 1971 Coca-Cola commercial "I'd Like to Teach the World to Sing" and the pop-song version of the same song, or one of Weird Al Yankovic's parodies of popular music.

Then ask the class to sing a few lines from three children's songs: "Twinkle, Twinkle Little Star," "The Alphabet Song," and "Baa, Baa, Black Sheep," which all use the same melody with different lyrics. Discuss whether students think it might be easier or more difficult to start with a familiar song and change the words as Weird Al does, or create an entire song, with original words and melody, from scratch.

Video

Pass out the **Lyrics to Moxy Frivous Songs** reproducible handout and show all four songs, asking students to follow along with the lyrics. CUE and play each of the following songs in order. (The first song is repeated from Days One and Two.)

- “Energy Blues” (found in *Energy, The Pulse of Life*, “A Changing Environment” from approximate time code 06:22 to about 7:55)
- “New-Fangled Seeds” (a two-part song from *Cracking the Code*, “Seeds of a New Era”

Part One: 08:35–09:45
Part Two: 27:01–28:12)
- “Efficiency” (found in *Energy, The Pulse of Life*, “Some Brighter Ideas” from approximate time code 05:01 to about 06:45)
- “Steam Rap” (found in *Energy, The Pulse of Life*, “Water, Wind, and Watts” from approximate time code 06:00 to about 06:38)

After each song ask students to identify the genre of each song and to look for the hidden meaning and persuasive techniques. (NOTE: The third song, “Steam Rap,” isn’t intended as a persuasive song. It is included here to provide an example of a rap song dealing with nonfiction information.) Then briefly discuss how the lyrics fit within the pattern of the song’s melody or rhythm.

Write on the board the first two lines of each of the three children’s songs discussed before the video and compare how the syllabication fits within the rhythm of the melody differently.

Twinkle, twinkle, little star,
How I wonder what you are.

A, B, C, D, E, F, G,
H, I, J, K, L, M, N, O, P.

Baa, baa, black sheep, have you any wool?
Yes, sir, yes, sir, three bags full.

Group Work

Return students to their groups and have them collaborate to select a favorite or popular song that they can rewrite as a persuasive argument for their chosen environmental health topic. After agreeing on a song, they should find a copy of the lyrics (see the Resources section for Web sites that provide lyrics to popular songs) and then rewrite the lyrics to fit their topic. Encourage groups to work together as they will be graded on their collaboration as well as their final product. Groups will be required to perform their songs for the class and may add costumes, sets, and props if they choose.

Homework

Depending on the age and abilities of your students, set a deadline for completion of the song and schedule time (Day Four of this lesson) for group performances. Groups may choose to play their own music, or they can look for instrumental recordings to use as background music or simply sing *a capella*. Build in time between performances for the class to discuss each song’s topic, genre, and persuasive techniques. OPTIONAL: You might wish to have groups provide a printed copy of their lyrics before Day Four to reproduce for the class.

Assessment

Individual Assessment

Have students write an essay on the same environmental health topic their groups researched. The essay should describe why they felt the issue was important and explain why their group’s song best fits the topic, musical genre, and persuasive arguments they selected.

Group Assessment

Evaluate each group’s work in creating a song that demonstrates deep understanding of the



“In a republican nation, whose citizens are to be led by reason and persuasion and not by force, the art of reasoning becomes of first importance.”

—Thomas Jefferson

topic of environmental health as well as possible solutions to the problem. Their assessment should reflect evidence of effective participation, collaboration, and consensus, as well as an understanding of songwriting and persuasive techniques.

Extension Activity: Musical Slideshow on Environmental Health

Have groups create slide shows to accompany their songs, using images they create or find during their research. Have them use presentation software to create automated slide shows that change to reflect the lyrics and rhythm of their songs.

Resources

Environmental Health Topics from A to Z
Medline Plus, a service of the U.S. National Library of Medicine and the National Institutes of Health, offers lists of environmental health topics that students may research for their

research projects. Each topic contains links, references, and other important information that will help students get started.

www.nlm.nih.gov/medlineplus/poisoningtoxicologyenvironmentalhealth.html

You Tube Music Videos (NOTE: Teachers should preview all videos before showing to students.)

- PATHOS example: Marvin Gaye: “Mercy, Mercy Me (The Ecology)”
www.youtube.com/watch?v=U9BA6fFGMJI
- PATHOS example2: “The Star-Spangled Banner” www.youtube.com/watch?v=ZfFA6kr88eg&feature=related
- LOGOS example: Joni Mitchell “Big Yellow Taxi” (The “They paved paradise.” song)
www.youtube.com/watch?v=28baJIanXlw
- ETHOS example: Mahalia Jackson “We Shall Overcome”
www.youtube.com/watch?v=TmR1YvfiGng
- Louis Armstrong “What a Wonderful World”
www.youtube.com/watch?v=vnRqYMTpXHc&feature=related
- 1971 Coca-Cola commercial “I’d Like to Teach the World to Sing”
www.youtube.com/watch?v=6mOEU87SBTU
- 1971 The New Seekers pop song “I’d Like to Teach the World to Sing” (audio only)
www.youtube.com/watch?v=7h5ZmyzRRuU&feature=related
- Backstreet Boys “I Want It That Way”
www.youtube.com/watch?v=AgH-jWCny9U
- Weird Al Yankovic “Ebay” (parody of the Backstreet Boys song “I Want It That Way”)
www.youtube.com/watch?v=dYI4KIW230w

Music Lyrics Databases

- Smart Lyrics: www.smartlyrics.com/
- Yahoo! Music: <http://music.yahoo.com/lyrics>
- Lyricspedia: www.lyricspedia.com/

www.pbs.org/independentlens/offthecharts/webkaraoke.html

Visit the Web site of PBS Independent Lens and try out the **Web Karaoke** interactive. Create a poem that becomes the lyrics to a song in this interactive karaoke activity. Type in the lines of your poem, listen to the melody while singing along, and print your song.

www.pbs.org/independentlens/strangefruit/protest.html

PBS Independent Lens: Strange Fruit. Explore American protest songs and songwriters whose words and music served as catalysts for thought, action, and social change. Listen to audio clips while exploring the lyrics and backgrounds of songs from eight eras of U.S. history.

www.weirdal.com/

The Official Web site of Weird Al Yankovic

<http://www.fruvous.com/>

The official Web site of Moxy Früvous, the band that composed the melodies and performed the songs in *Energy, the Pulse of Life*.

Lyrics to Moxy Frivous Songs

Energy Blues

Fill 'er up, there, Joe, I'm feelin' footloose and free!
(Woo-woo, woo-woo, woo-woo, woo-woo woo)
Gonna fill my tank with that petrol-energy.
(Woo-woo, woo-woo, woo-woo, woo-woo woo)

Oil, coal, natural gas,
Burn them up now, while they last,
After all, isn't that the path to prosperity?
(Prosperity!)

But now these fossil fuels have shown up in our skies.
(Bop-shoo-wop, bop, bop-shoo-wop)
Into which carbon, sulphur, and nitrogen all oxidize.
(Bop-shoo-wop, bop, bop-shoo-wop)

Our thermometer's startin' to gain,
There's acid fallin' down in the rain,
Our energy habits and nature just don't harmonize.
(Don't harmonize!)

What about those other ways to get electrical kicks?
(Bop-shoo-wop, bop, bop-shoo-wop)
Like waterfalls, uranium rods, or just burnin' sticks?
(Bop-shoo-wop, bop, bop-shoo-wop)

Nuclear has caused a clamor,
Is hydropower worth a "dam"?
Or is there some other way to get out of this energy fix?

How we gonna lick those energy blues?
We gotta lick those energy blues.
(I said) We gotta lick those energy blues,
How we gonna lick those energy blues?

Efficiency

A look at history reveals
Slowly turning wheels
'Til we put some steam into our energy.

Thomas Edison then said,
"Halleluiaah, amen,"
And wired us all for electricity.

'Long came a moving machine
That fed on gasoline
And our travel plans all turned to fancy-free.

Our cities blazed with light.
It was our new birthright
To have more energy-consuming gadgetry.

But soon those carefree days
Took on a troubling haze
'Cuz of the energy-spending habits we embraced.

Our houses leaked their heat.
Our light bulbs really eat
That electricity that we so often waste.

The way we mobilize
Is really quite unwise,
It's a costly way to get from A to B.

When we're behind the wheel
In our automobile
We're on an energy spending spree!

Time to change,
Time to lower our demand
Before those greenhouse gasses
Get out of hand!

Efficiency is comin' in style.
"Switching off" will save you a pile!

Choosing the light with the small appetite,
To be energy-hip you gotta weatherstrip!

Efficiency is doing it smart.
Double the use when you make that juice!

(Talkin' 'bout cogeneration!
Talkin' 'bout cogeneration!)

Your savings will jump when you use a heat pump!
The energy key is efficiency!

New-Fangled Seeds, Part One

We're farmers and we're puttin' lotsa cash in,
To new-fangled seeds that now are all the fashion.
Scientists have added genes
To our usual cuisines
Thanks to an earthy little bug named *tumefaciens*.

That's how they get 'em through cell walls that are so thick,
Once inside the nucleus that gene will stick.
Now the leaf's been engineered
Through a mating kinda weird
Crossing kingdoms, which is really quite a trick.

That DNA gives new instructions
And each little bit of tissue's soon a clone.
Through asexual reproduction
Now there's many plants instead of one alone.
And that gene's in all the seeds those plants are growin'.
And that gene's in all the seeds those plants are growin'.

New-Fangled Seeds, Part Two

Now our crops they are arousin' lotsa passion,
After harvesting they face another thrashin'.
Do the genes that modify
Really rate this hue and cry?
Do the facts really support this GM bashin'?

You see, these crops go through an awful lot of testin'
And there hasn't been a problem in ingestin'
The food that they produce.
And they help us to reduce
The chemicals we spray to keep us from infestin'.

One gene protects against bad insects—
We don't have to zap 'em with insecticides.
One gene succeeds in fighting weeds
While reducing damage caused by herbicides.
But we still don't get the profits they provide.
We don't get the big, fat profits they provide.

Steam Rap

(Do-a, chack-a, do-a, chack-a . . .)

In 1698 Captain Savery had a notion,
To transform heat into some kind of motion.
The first steam engine was a great big clinker,
It didn't push steam; it was more of a "steam shrinker."

Each time the steam went to cooler from hotter,
A vacuum was formed which could suck up water.
Thomas Newcomen learned how to heat steam faster,
But the wasted heat was an efficiency disaster.

James Watt thought if you took steam away,
You could manage to avoid this whole "cooling off" delay.
Removing and condensing it was his solution,
It worked so well it caused the Industrial . . . Revolution.
(Woo-woo)