

Energy Rock Performances

An interdisciplinary activity to harness creativity as students assemble musical groups and write songs to perform about energy sources, electricity, and conservation and efficiency.



Grade Levels:

- Elem** Elementary
- Int** Intermediate
- Sec** Secondary

Subject Areas:

-  Science
-  Social Studies
-  Language Arts
-  Public Speaking
-  Creative Arts



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NEED Mission Statement

The mission of The NEED Project is to promote an energy conscious and educated society by creating effective networks of students, educators, business, government and community leaders to design and deliver objective, multi-sided energy education programs.

Teacher Advisory Board Statement

In support of NEED, the national Teacher Advisory Board (TAB) is dedicated to developing and promoting standards-based energy curriculum and training.

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Energy Data Used in NEED Materials

NEED believes in providing the most recently reported energy data available to our teachers and students. Most statistics and data are derived from the U.S. Energy Information Administration's Annual Energy Review that is published yearly. Working in partnership with EIA, NEED includes easy to understand data in our curriculum materials. To do further research, visit the EIA website at www.eia.gov. EIA's Energy Kids site has great lessons and activities for students at www.eia.gov/kids.



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Standards Correlation Information

www.NEED.org/curriculumcorrelations

Next Generation Science Standards

- This guide effectively supports many Next Generation Science Standards. This material can satisfy performance expectations, science and engineering practices, disciplinary core ideas, and cross cutting concepts within your required curriculum. For more details on these correlations, please visit NEED's curriculum correlations website.

Common Core State Standards

- This guide has been correlated to the Common Core State Standards in both language arts and mathematics. These correlations are broken down by grade level and guide title, and can be downloaded as a spreadsheet from the NEED curriculum correlations website.

Individual State Science Standards

- This guide has been correlated to each state's individual science standards. These correlations are broken down by grade level and guide title, and can be downloaded as a spreadsheet from the NEED website.

The screenshot shows the NEED website interface. At the top left is the NEED logo (National Energy Education Development Project) and social media icons for Facebook, Twitter, and LinkedIn. A search bar is located on the right. A navigation menu includes: About NEED, Educators, Students, Partners, Signature Programs, State Programs, and Contact. The main content area shows a breadcrumb trail: Home > Educators > Supplemental Materials > Curriculum Correlations. The page title is "Curriculum Correlations". The text states: "NEED has correlated all of their materials to The Common Core State Standards for English/Language Arts and Mathematics. NEED has also correlated its materials to each state's individual science standards. All files are in Excel format. NEED recommends downloading the file to your computer for use. Save resources, don't print!". Below this is a list of links for Common Core State Standards for English and Language Arts and Common Core Standards for Mathematics. A sidebar menu on the left lists various resources, with "Curriculum Correlations" highlighted.



Teacher Guide

Background

Energy Rock Performances is an activity that can be adapted for use in grades 3-12. In this cooperative learning activity, student groups research energy sources, then write and perform their own energy rock songs, along with an introduction and interview. The students also create a persona for their rock group by designing album art (*i.e.*, CD cover) and gathering props and costumes. During the performances, a teacher or leader acts as host of the show and reads the interviews that the groups have prepared.

Materials

- Sample *Geothermal* rock performance sheet, page 8
- *Student Guide*, page 7
- NEED's *Energy Infobooks* (or other information on energy topics), available from www.NEED.org
- Art supplies for album art and props (posters, construction paper, etc.)

Preparation

- This activity has been designed for use with NEED's *Energy Infobooks*. The infobooks are written in four reading levels and contain infosheets devoted to each of the sources of energy. Each infobook can be downloaded as a PDF or in an e-reader format at www.NEED.org/energysources. Individual infosheets can be downloaded by navigating to <http://www.NEED.org/content.asp?contentid=197>.
- Make enough copies of the infosheets for each source, so that each student in the group has a copy. Alternatively, you can also provide your students with internet access and the link to download each infosheet needed.
- Gather a list of approved resources and websites students may use to supplement their research, if desired.
- Make copies of the sample song and *Student Guide* for each student.
- Divide students into groups based on the number of sources/topics you wish to cover. It is suggested that students work in groups of three to five students.

Procedure

1. Introduce the activity to students by singing the sample song about geothermal energy. Explain that they will work in small groups to "jam out" about an energy topic. Each group will create a song, interview, and album art.
2. Pass out the *Student Guide* and sample song and review all the necessary components students must complete. Depending on the age of your students, you may wish to go through the sample song as a class, again, pointing out all of the group responsibilities. This may be necessary for younger or less independent learners.
 - a. Read the *Geothermal* rock performance sheet as a class. Sing the familiar sample song as a class, if desired.
 - b. Explain that students will create a song of their own, set to a tune of their choice. Just like the sample, their new song should be similar in rhyme and rhythm to that of the original, while telling the audience important information about their topic. Underline or highlight each of the important facts in the sample song.

Grade Levels

- Elementary, grades 3-5
- Intermediate, grades 6-8
- Secondary, grades 9-12

Time

Three to five class periods. You can decrease the time required by designating assignments as homework or using the sample songs and interviews included within this guide.

Additional Resources

NEED has many supporting resources that could be used to enhance student work in this activity. Several titles are listed below. These resources and many more can be downloaded by visiting the NEED website, www.NEED.org.

▪ Energy Infobooks

- *Elementary Energy Infobook*
- *Intermediate Energy Infobook*
- *Secondary Energy Infobook*

▪ Hydropower

- *Wonders of Water*
- *Energy of Moving Water*
- *Exploring Hydroelectricity*

▪ Solar

- *Wonders of the Sun*
- *Energy From the Sun*
- *Exploring Photovoltaics*

▪ Nuclear

- *Energy From Uranium*
- *Exploring Nuclear Energy*

▪ Wind

- *Wonders of the Wind*
- *Energy From the Wind*
- *Exploring Wind Energy*

- c. Point out that the sample rock group has a name, hit single, and an album title. Explain to students that they will need to create these for their group, too. Their groups will also need to create a piece of album art to represent their hits.
 - d. Look at the sample introduction and interview. Point out that these pieces also tell important facts about geothermal energy in a creative way. During their interviews, both the questions and answers will be used to share important information about their topic.
3. Assign students to their groups and set timelines for work completion using the Student Guide. Remind students they will be performing their songs for the class.
 4. Monitor group work and check on progress. If necessary, you may require students to submit lyrics or interviews for approval as they work. Be sure students are completing their work checklists.
 5. Provide time for students to complete work and practice before presenting their songs, interviews, and album art.
 6. Select a host for the show, if you will not be hosting yourself. The host must coordinate student performances and interview the groups. Invite an audience to come rock out with your class.

Optional Activity

Sample performances for all the energy sources are included in this guide. You can assign one of the samples to each group of students instead of having them write their own.

Evaluation

- Assess student work using the sample group work rubric below, or create your own. Be sure to share the grading procedure with students.
- Evaluate the activity with your students using the form on page 23 and return it to NEED.

	CONTENT	ORGANIZATION	ORIGINALITY	WORKLOAD
4	Project covers the topic in-depth with many details and examples. Subject knowledge is excellent.	Content is very well organized and presented in a logical sequence.	Project shows much original thought. Ideas are creative and inventive.	The workload is divided and shared equally by all members of the group.
3	Project includes essential information about the topic. Subject knowledge is accurate.	Content is organized in a logical sequence.	Project shows some original work. Work shows new ideas and insights.	The workload is divided and shared fairly equally by all group members, but workloads may vary.
2	Project includes essential information about the topic, but there are 1-2 factual errors.	Content is logically organized but may have a few confusing sections.	Project provides essential information, but there is little evidence of original thinking.	The workload is divided, but one person in the group is viewed as not doing a fair share of the work.
1	Project includes minimal information or there are several factual errors.	There is no clear organizational structure, just a compilation of facts.	Project provides some essential information, but no original thought.	The workload is not divided, or it is evident that one person is doing a significant amount of the work.



Student Guide

Write and Perform a Song About an Energy Source

A ★ by a set of instructions means there is an assignment that must be completed and checked by your teacher. Write all of the assignments neatly, and check them for spelling, punctuation, and grammar. Here is a checklist of your assignments:

- List facts about your energy source/topic.
- Write a song.
- Write a band introduction.
- Write an interview.
- Design album art.

Let's Go!

▪ Step One—Learn About Your Energy Source

- ★ Working as a group, read your infosheet and underline or select the most important facts in each section. You will use these facts in your group's name, song, and interview. Try to find 10–20 facts and write them down on a piece of paper.

▪ Step Two—Name That Group!

- ★ Select a name for your musical group, using the information you have learned. Be clever, creative, and original!

▪ Step Three—Pick That Tune!

- ★ Think about songs you can use as a guide. You don't have to use a rock song; you can use a rap song, folk tune, nursery rhyme, or theme from a television show or commercial. Take the first lines from a few songs and try to make up lyrics of your own. Pick the tune that is the easiest to use.

▪ Step Four—Write That Tune!

- ★ Using your list of facts, begin writing your group's song and name it. Your energy song must tell at least five facts about your energy source.

▪ Step Five—Write the Group Introduction

- ★ Write a three to four sentence introduction that the host will read to the audience before your grand entrance. Your introduction should present several important facts about your energy source, as well as the name of your song and album.

▪ Step Six—Write a Four-Question/Answer Interview

- ★ Working as a group, write four questions and answers for the interview. Keep in mind that both the questions and answers should say something about your energy source. If you need help, look at the sample interview or your list of facts.

▪ Step Seven—Design Album Art

- ★ Using the name of your group and your hit single, brainstorm cover designs for your album. Assign one member of your group to bring the sketch to life. Use a poster for your final album art.

▪ Step Eight—Props, Costumes, and Scenery

Create a look for your group. Props, costumes, and simple scenery will help get your point across to your audience. For example, members of a solar group could wear yellow clothing and sunglasses or, you may choose to make props that parody your group/artist name. Brainstorm ideas for props and costumes. Once you've settled on a plan, assign various jobs to group members.

▪ Step Nine—Rehearse Again and Again and ...

Rehearse your performance as many times as possible. Things to consider:

- Is the group loud enough so everyone can hear and understand the song?
- Are the costumes and props appropriate? Do they make sense for your source and song?
- Are you enthusiastic in your delivery?
- Can you add dance steps or arm movements?
- Does everyone know his or her part? Do not read the lyrics during your performance!

▪ The Final Step—Your Performance

The big day is here! Your group's performance is next. When it's your turn to perform, the host will introduce you using the introduction that your group wrote. You should display your album art, name your hit song, and perform your song. After your performance, the host will ask you the interview questions that your group wrote. Have a great time!



Geothermal

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: It's my pleasure to introduce the next energy band. Today in the U.S. they perform in many locations, mostly in western states. Let's give a big welcome to Bruce "Hot" Spring Steam and The Geysers, singing their new hit single "Volcano Inferno" from their latest album, "Molten Rock."

(Bruce "Hot" Spring Steam and The Geysers perform their song to the tune of "Clementine.")

Original Lyrics

In a canyon, in a cavern
Excavating for a mine
Dwelt a miner, 49-er
And his daughter, Clementine

Oh my darlin', oh my darlin'
Oh my darlin', Clementine
You are lost and gone forever
Dreadful sorry, Clementine

Parody Lyrics

Way down under in the Earth's core
Comes a power source for free
Heat to warm the rocks and water
Geothermal energy

Geysers, hot springs, and volcanoes
Are some features you can see
Non-polluting, self-renewing
Geothermal energy

From Hawaii up to Iceland
Geothermal wells are drilled
They are tapping the steam power
For the power plants we build

A few feet under-neath the surface
Temperatures don't ever change
Warm your winter, cool your summer
Geothermal heat exchange

Interview

PAULY POWER: Bruce, I know you are on a world tour right now. Where are you having those concerts?

BRUCE: Well, Pauly, most of our concert halls are located near earthquakes and volcanoes. The "Ring of Fire" that follows the Pacific rim is our favorite location; however, we also perform in Africa and Europe.

PAULY POWER: Where do you get your inspiration and energy for your songs?

MAGMA: From the radioactive decay of elements in our studios in the Earth's core. Once the songs are written, we send them up through the cracks in the Earth's crust.

PAULY POWER: Just how hot is your music?

STEAMY: Our really hot tunes reach 300 to 700 degrees Fahrenheit. When we turn up the steam, we really can generate a lot of power at those concerts.

PAULY POWER: Is all your music that hot?

GEYSER: No, we have cool, earthy music that people all over the country can pump right out of the ground into their houses. This music stays about 50 degrees year-round and it's only a few feet underground. Pump it in your house - it cools your brow in the summer and warms your heart in the winter.

PAULY POWER: Sounds like you're everywhere. How long do you think your band will stay together?

CORE: Well, our contract is renewable and people love our clean, earthy sound. I think we'll be around for a long, long time, just pumping out those tunes.



Biomass

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band has been around for a long time, doing lots of different kinds of music. Though you might not recognize them by their formal name, their work will sound familiar. Let's give a warm welcome to Bernie and the Biomasters, singing their new hit single from their "Waste Heat" album, "Biomessage."

(Bernie and the Biomasters perform their song to the tune of "When The Saints Go Marching In.")

Original Lyrics

Oh, when the saints go marching in
Oh, when the saints go marching in
How I want to be in that number
When the saints go marching in

Parody Lyrics

Waste-to-energy—it can't be beat
For making lots of hot steam heat
That is used to make electric power
To light up your darkest hour

The leaves that fall, the grasses you mow
The skins of apple and potato
Can be composted—it's not too hard
To enrich your garden and your yard

Oh, let your corn grow big and tall
And make it into ethanol
It burns clean and it's renewable
We use it as an auto fuel

Interview

PAULY POWER: Where do the members of your band come from?

BERNIE: We come from all over the country—forests, dumps, even cornfields.

PAULY POWER: Who generates most of your music?

CORNIE: The woodwind section of our band is definitely the biggest.

PAULY POWER: How does your band travel from concert to concert?

FILL: We always travel in a converted garbage truck. We use the trash to make some electric tunes, man!

PAULY POWER: And what do you use for fuel?

BERNIE: We just drive into the nearest cornfield and distill our own fuel—ethanol—for the truck.

PAULY POWER: Where does your band get its enormous energy?

SOL: From the sun—we have lots of photosynthesis sessions for the band.



Coal

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: It's my pleasure to introduce our next energy band. This is the group that fueled the nation's industrial revolution. A group that's been producing one-third of its songs in underground studios and two-thirds of them in surface studios. Let's give a big welcome to Coal and the Gang singing their new hit single, "I've Been Working on the Railroad" from their latest album, "Coal Train."

(Coal and the Gang perform their song to the tune of "I've Been Working on the Railroad.")

Original Lyrics

I've been working on the railroad
All the livelong day
I've been working on the railroad
Just to pass the time away

Can't you hear the whistle blowing
Rise up so early in the morn
Can't you hear the whistle blowing
Dinah, blow your horn

Parody Lyrics

I've been working on the railroad
Moving coal all day
From the mine site to the power plant
Where coal's burned a clean way

Coal to light the nation's buildings
Transported by trains
Coal to make electric power
From ancient plant remains

Interview

PAULY POWER: That was great, guys. Step right over here and let me ask you a few questions. First of all, Digger, I know that Coal and the Gang is the third most popular energy group in the nation right now, just after petroleum and natural gas. Can you tell me who buys most of your energy albums?

DIGGER: Well, Pauly, about 93 percent of our albums are bought by electric power plants. They think we generate some really powerful tunes. We're popular overseas, too. Almost ten percent of our shows are outside the United States.

PAULY POWER: How do you answer your critics who say your energy music is dirty and pollutes the airwaves?

SHAFT: That used to be true, Pauly, but we've really cleaned up our act. Now we try to remove all the sulfur from our songs, before, during, and after our concerts. We've recently developed some new technologies in our studio to become an even cleaner energy band. Now even our old critics admit we're pretty clean.

PAULY POWER: I know you guys are an all-American band. Can you tell me what states the members of the band come from?

SCRUBBER: We are from Wyoming, West Virginia, Kentucky, Illinois, and Pennsylvania.

PAULY POWER: One last question. You guys have been around for a long time now. How long do you think your popularity will last, considering you're a nonrenewable energy band?

DIGGER: Depending how fast people buy our energy albums, we'll be around for another 180-253 years.



Hydropower

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band works a hydro dam site harder than any other band. They provide the U.S. with 6.5 percent of the electric music. Let's hear it for Madam and the Spillways singing "Pumped up Hydro" from their new "Hydro Hits" album.

(Madam and the Spillways performs their song to the tune of "Old MacDonald Had a Farm.")

Original Lyrics

Old MacDonald had a farm
E-I-E-I-O
And on this farm he had a pig
E-I-E-I-O
With an oink, oink here
And an oink, oink there
Here an oink, there an oink
Everywhere an oink, oink
Old MacDonald had a pig
E-I-E-I-O

Parody Lyrics

Old MacRiver had a dam
H-Y-D-R-O
To give us cheap electric power
H-Y-D-R-O
With a reservoir
And turbine power
Water in, water out
Water turns it all about
Old MacRiver had a dam
H-Y-D-R-O

Interview

PAULY POWER: I understand your band is number one in the renewable electricity concert series.

MADAM: That's right, thanks to our biggest fans in the Pacific Northwest and New York. They know how to go with the flow.

PAULY POWER: Your concerts are well known for the power you put out; currently, I hear it's around 100,000 megawatts. Is that your maximum output?

JENNY RADER: No, with upgrades to our venues, we could put up to another 60,000 megawatts into our system.

PAULY POWER: Why are your live concerts unpopular with some local audiences?

PHILLUP: For us to set up the stage to perform, we sometimes have to move highways, railroads, houses, and even whole towns.

PAULY POWER: Why are the tickets to your concerts so cheap?

KEN ETIC: First of all, the water we use to power our concerts is free, so we can pass the savings along to our fans. Also, our operating costs are low, and we use our concert sites longer than other bands.

PAULY POWER: I heard that other bands rely on you to fill in when they can't perform.

JENNY RADER: We can jump in whenever demand is high, thanks to our talented baseload player. Our band is reliable, efficient, and economical.



Natural Gas

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band produces its albums here in the U.S., in places like Texas, Louisiana, and Pennsylvania. Their last hit album, “I Get It Through the Pipeline” went gold by selling millions of cubic feet-albums. Their new album, “Pipeline Underground” will surely go platinum. Ladies and gentleman, it’s my pleasure to introduce 10,000 Methanics, singing their hit single “Home on My Range.”

(10,000 Methanics performs their song to the tune of “Are You Sleeping?”)

Original Lyrics

Are you sleeping?
Are you sleeping?
Brother John
Brother John
Morning bells are ringing
Morning bells are ringing
Ding dong ding
Ding dong ding

Parody Lyrics

Warm your winter
Cook your dinner
Natural gas
Natural gas
I’m nonrenewable
The cleanest fossil fuel
Natural gas
Natural gas

Interview

PAULY POWER: Who are your biggest fans?

WELLS: Listeners at home and work are big listeners, but industries and utilities buy an equal share of our music.

PAULY POWER: Your band has been popular for a long time. Where did you get your start?

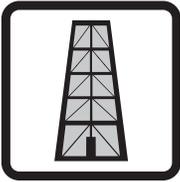
PIPER: In 1821, we were playing in a real pit in Fredonia, New York, and it was there that William Hart discovered our talents.

PAULY POWER: Most bands’ music is now sold digitally. Have you also given up making vinyl records and CDs?

THERM: We’ve done one better. We use a special way of recording called CFs—we sell our albums by the cubic foot. And for really large albums, we use MCFs, thousands of cubic feet.

PAULY POWER: How are your CFs distributed to your fans?

VALVE: We use 2 million miles of pipelines to carry our CFs from the production sites directly to home, business, and industry fans.



Petroleum

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Ladies and gentlemen, our next band is real slick. They just finished a road tour doing the famous musical “Grease.” Let’s welcome Ethyl and the Pumps singing their new hit “Black Gold” from their new “Petrock-n-Rolleum” album.

(Ethyl and the Pumps perform their song to the tune of “The Addams Family.”)

Original Lyrics

They’re creepy and they’re kooky	Doodly dee doo—neat
Mysterious and spooky	Doodly dee do—sweet
They’re altogether ooky	Doodly dee do, doodle de doo
The Addams Family	Doodle de do—petite

Their house is a museum	Doodly dee doo—neat
When people come to see ‘em	Doodly dee do—sweet
They really are a scre-am	Doodly dee do, doodle de doo
The Addams Family	Doodle de do—petite

Parody Lyrics

I am a fossil fu-el	Turn me into—gasoline
I’m non-renewab-uh-le	Turn me into—Vaseline
In cars, I really ru-le	Turn me into, turn me into
Petroleum energy	Turn me into—kerosene

You have to drill to find me	Turn me into—plastic
And then you must refine me	Turn me into—elastic
Ship me and pipeline me	Turn me into, turn me into
Petroleum energy	So many things—I’m fantastic

Interview

PAULY POWER: Your albums are made in 31 U.S. states. Which state produces the most?

ETHYL: Texas leads North Dakota, California, and Alaska.

PAULY POWER: Your music doesn’t sound like that of other American bands. Why?

DERRICK: We don’t just use American sources. We import a little less than half of our music from other countries.

PAULY POWER: Where was your first concert?

RIGGS: Edwin Drake was the first fan to really dig us. He set up our first performance in Titusville, Pennsylvania, in 1859.

PAULY POWER: Where are your fans when they listen to your Petrock-n-Rolleum?

EARL: Our fans really like to be on the move, so we have some awesome car tunes. Our music can be heard in almost all of the vehicles on the road because they use gasoline and diesel.



Propane

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: This next band is a relative newcomer to the energy music scene, but they're in great demand down on the farm and in backyards around the country. Let's hear it for Propanic, singing their hit single "Tanks for the Memories" from their new album, "High Compression."

(Propanic performs its song to the tune of "Yankee Doodle.")

Original Lyrics

Yankee Doodle went to town
Riding on a pony
Stuck a feather in his cap
And called it macaroni

Yankee Doodle keep it up
Yankee Doodle dandy
Mind the music and the step
And with the girls be handy

Parody Lyrics

Drill for propane underground
With oil and natural ga-as
Colorless and odorless
It cooks your food real fast

Put a little pressure on
And tanks will keep it handy
For farms and homes and industries
Propane's a real dandy

Interview

PAULY POWER: You're relatively new on the music scene, aren't you?

SQUEEZE: Yes, we are. We were discovered in 1912, and, as you know, most energy bands have been around for a lot longer than that—some for thousands of years.

PAULY POWER: I've heard that you guys perform well under pressure. Is that right?

PIPER: That's exactly right. When we're under pressure, we've got a cool liquid sound and when we turn the heat up, we're a real gas.

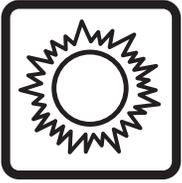
PAULY POWER: Do you perform all over the country?

FARMER: Well, to tell the truth, we're really a country music band. Farmers like us. We do have a small but loyal following in town, too. We play a lot of small concerts in people's backyards, for barbecues and all.

PAULY POWER: I hear parents really like you. Why is that?

PRO: Because we sing really clean lyrics, we don't pollute the airwaves very much.

PAULY POWER: Tanks a lot, Propanic.



Solar

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band has provided the energy to help start the fossil fuel bands and most of the renewable bands. They traveled 93 million miles to be with us today. Let's hear a warm welcome for Fusion. They'll be singing their new hit single from their "Solar Collection" album, "Great Balls of Fire."

(Fusion performs its song to the tune of "Twinkle, Twinkle, Little Star.")

Original Lyrics

Twinkle, twinkle, little star
How I wonder what you are
Up above the world so high
Like a diamond in the sky
Twinkle, twinkle, little star
How I wonder what you are

Parody Lyrics

Sunshine, sunshine, shine on me
Give me your light energy
Heat my water, heat my home
Run my roadside telephone
Sunshine, shine on my PV
Make me clean electricity

Interview

PAULY POWER: What makes your concerts so different from other bands'?

SOL: We are the only band that only plays during daylight. We do not work at night.

PAULY POWER: Your fans are different from other fans. How is that?

SUNNY: All our fans wear black when we play. They say it makes them absorb our message better.

PAULY POWER: Since you only do daytime concerts, how do your fans who are night people get to enjoy your performances?

RAY DON: Our fans can store our hot tunes in sand, concrete, and water. That way they can enjoy our music at night.

PAULY POWER: I know you guys do some concerts that are out in the wilderness. How do you power your electric amps and other equipment?

RAY DONNA: We use photovoltaic cells to convert our energy directly into electricity.



Uranium

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band has been very active on the radio lately. In fact you could call them radioactive. So before they split, let's welcome a band responsible for generating a little more than 19 percent of the nation's electric music. Ladies and gentlemen, Atom Ant and the U-235 singing the hit, "Split Goes the Atom" from their "Chain Reaction" album.

(Atom Ant and the U-235 perform their song to the tune of "Pop Goes the Weasel.")

Original Lyrics

All around the cobbler's bench
The monkey chased the weasel
The monkey thought t'was all in fun
Pop goes the weasel

I've no time to wait and sigh
No patience to wait til bye-n-bye
So kiss me quick, I'm off, good-bye
Pop goes the weasel

Parody Lyrics

Neutrons hit U-235
Inside a thick reactor
Heat to make electric power
Split goes the atom

The power plants make dangerous waste
It's so radioactive
It must be stored in a safe place
Split goes the atom

One hundred four nuclear power plants
Make power for the country
The power's cheap, the air is clean
Split goes the atom

Interview

PAULY POWER: Where was your first concert?

ATOM ANT: Our first gig was in Shippingport, Pennsylvania, in 1957.

PAULY POWER: Your music videos don't stay long on the charts, but the "radio activity" for your songs keeps them hot for years. What about these old waste albums?

ROD: Well, all that "radio activity" makes them so hot that the only way to get our new stuff on the air is to isolate that old music and store it in a safe place.

PAULY POWER: Why are your record albums so cheap?

MILLER: First of all, we have the most concentrated music on our albums, and the fuel used to make them is very cheap, so we pass the savings on to our fans.

PAULY POWER: Why is there so much opposition to your live local concerts?

ATOM ANT: Well, there were some safety problems at some of our concerts in Pennsylvania, Russia, and Japan. But since then we've really improved security and safety at our concerts.

ROD: Many fans like us because we don't pollute the airwaves.



Wind

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band just blew into town for this performance. Most of their electric concerts are performed in Texas during the summer when people need to hear their music the most. Let's hear a big Totally Energy Show welcome for Darrieus and the Wind Spinners, singing "Watts on the Wind" from their "Blade Power" album.

(Darrieus and the Wind Spinners perform their song to the tune of "Oh! Susanna.")

Original Lyrics

Oh, I come from Alabama
With a banjo on my knee
I'm a-goin' to Louisiana
My true love for to see

Rained all night the day I left
The weather it was dry
Sun so hot I froze to death
Susanna, don't you cry

Oh! Susanna
Oh, don't you cry for me
For I come from Alabama
With my banjo on my knee

Parody Lyrics

The sun shines down to heat the lands
The oceans keep their cool
The hot air rises and expands
Let's use that wind as fuel

The wind blows down the mountain pass
And turns the turbine blades
No burning coal, or oil or gas
As electric power is made

Oh, wind power
You are the fuel for me
For over 15 million homes
You make electricity

Interview

PAULY POWER: What gives your band the energy to perform day and night?

DARRIEUS: If it weren't for the sun heating the Earth unevenly, we would not be turning out our music today.

PAULY POWER: Where did the band get its first big break?

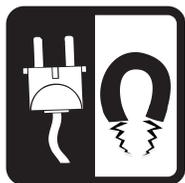
MILLY: Our first big break came in Holland in the 17th century. We paid our dues, though. We really got put through the mill!

PAULY POWER: I've heard your band isn't always reliable; that you don't always show up at performances. Tell me why.

LOLLY: Well, Pauly, that's true, we only perform about three-fourths of the time. And, even then, the energy we get from the wind isn't always strong enough so that we can be heard in the back row.

PAULY POWER: I hear your concert halls take up a lot of space.

GALE: That's true. Just one of our wind turbines takes up an acre or two. And we usually have dozens of turbines on a wind farm. The good thing is you can plant crops around our wind turbines or graze cattle.



Electricity

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band is a blow-out. They follow a concert circuit that reaches almost every person in the country—in fact, they travel extensively worldwide. Let’s hear a big welcome for Lightning and the Zappers, singing “Power to the People” from their “It’s Electric!” album.

(Lightning and the Zappers perform their song to the tune of “Wheels on the Bus.”)

Original Lyrics

The wheels on the bus go
round and round
round and round
round and round
The wheels on the bus go
round and round
All through the town

Parody Lyrics

The turbine blades spin round and round, round and round, round and round
A copper coil spins round and round inside a magnet.

Electrons in the coil flow round and round, round and round, round and round
Flow in a loop going round and round in a closed circuit.

Voltage in the wires steps up and down, up and down, up and down
Transformers step it up and down, from power plant to town.

The switches on the walls go up and down, up and down, up and down
Closed is up and open is down. The circuits in our town.

There’s no power when the switch is down, switch is down, switch is down
Close the circuit and electrons go round, powering our town.

Interview

PAULY POWER: What gives your band the energy to perform day and night all over the world?

LIGHTNING: We go with the flow—the flow of electrons.

PAULY POWER: How long has your band been on the concert circuit?

JENNY RATOR: We’ve been around forever, but people really began to get turned on by us in the 1930s and 40s.

PAULY POWER: I’ve heard your band is the most reliable on the circuit; you always show up at performances. Tell me why.

REELY ABLE: Well, Pauly, that’s true. Here in the U.S. we travel on a network that gets us to concerts over 99 percent of the time. In other countries, we have a harder time.

PAULY POWER: Why do so many people like your concerts?

LIGHTNING: Our songs have something for everybody. Our tickets are a bargain and our tunes have a powerful message.



Conservation

Introduction

(The scene is a band stage. The host of the show addresses the audience.)

PAULY POWER: Our next band doesn't have a loud electric sound. They save energy by using only instruments that don't require electricity. Let's hear a big welcome for the Watt Watchers, singing "Wanton Wasters" from their "Radically Unplugged" album.

(The Watt Watchers perform their song to the tune of "Oh, dear! What Can the Matter Be?")

Original Lyrics

Chorus

Oh, dear! What can the matter be?
Oh, dear! What can the matter be?
Oh, dear! What can the matter be?
Johnny's so long at the fair.

Verse

He promised to bring me a basket of
posies
A garland of lilies, a wreath of red rosies
A little straw hat to set off the blue
ribbons
That tie up my bonnie brown hair.

Parody Lyrics

Chorus

Oh, dear! What can the matter be? Six young kids got caught wasting energy.
They lost all their power from Monday to Friday and now they know why they should care!

Verses

The first young kid had a wasteful tradition of leaving his light in an upward position.
His light burned out while he was fishin'. And now he knows why he should care.

The second kid was a real wasteful daughter who washed the dishes while runnin' the water.
And later that night wished her bathtub was hotter. And now she knows why she should care.

The third young kid liked to walk with bare feet. Instead of warm socks, he turned up the heat.
The bill was so high, he had nothing to eat. And now he knows why he should care.

The fourth young kid was late as a rule. Quite often would miss the last bus for school.
Her mom had to drive her and ran out of fuel. And now she knows why she should care.

The fifth young kid wanted a snack. He opened the fridge—looked in front and in back.
He stood there so long, the food all turned black. And now he knows why he should care.

The sixth young kid often ran out to play, leaving her Play Station running all day.
Her dad finally took the whole system away. And now she knows why she should care.

Interview

PAULY POWER: I hear you have a pretty quiet sound. Why is that?

EFFY CENSY: We're totally unplugged to save energy.

PAULY POWER: It's said that all ages dig your sound. How do you explain that?

CONNIE SERVATION: Everyone can get into saving energy by listening to our tunes. Turn off all those power-sucking machines and sing along with us.

PAULY POWER: You recently changed labels, didn't you?

EFFY CENSY: We sure did. Now we're on the EnergyGuide label—our records will show you exactly how much energy you'll use.

PAULY POWER: All your concerts are outside. Do your fans mind?

CONNIE SERVATION: Not a bit. If it's chilly, we pass out warm blankets. If it's hot, we pass out fans. No wasting energy on heating and cooling—you know heating and cooling use more energy than any other household task.



Youth Awards Program for Energy Achievement

All NEED schools have outstanding classroom-based programs in which students learn about energy. Does your school have student leaders who extend these activities into their communities? To recognize outstanding achievement and reward student leadership, The NEED Project conducts the National Youth Awards Program for Energy Achievement.

This program combines academic competition with recognition to acknowledge everyone involved in NEED during the year—and to recognize those who achieve excellence in energy education in their schools and communities.

What's involved?

Students and teachers set goals and objectives, and keep a record of their activities. Students create a digital project to submit for judging. In April, digital projects should be uploaded to the online submission site.

Want more info? Check out www.NEED.org/Youth-Awards for more application and program information, previous winners, and photos of past events.





Energy Rock Performances Evaluation Form

State: _____ Grade Level: _____ Number of Students: _____

- 1. Did you conduct the entire activity? Yes No

- 2. Were the instructions clear and easy to follow? Yes No

- 3. Did the activity meet your academic objectives? Yes No

- 4. Was the activity age appropriate? Yes No

- 5. Were the allotted times sufficient to conduct the activity? Yes No

- 6. Was the activity easy to use? Yes No

- 7. Was the preparation required acceptable for the activity? Yes No

- 8. Were the students interested and motivated? Yes No

- 9. Was the energy knowledge content age appropriate? Yes No

- 10. Would you teach this activity again? Yes No

Please explain any 'no' statement below.

How would you rate the activity overall? excellent good fair poor

How would your students rate the activity overall? excellent good fair poor

What would make the activity more useful to you?

Other Comments:

Please fax or mail to: **The NEED Project**

8408 Kao Circle
Manassas, VA 20110
FAX: 1-800-847-1820



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