

Remember When

Student Objectives

The student:

- understands that electric energy use has increased through the years
- understands how technology has changed our everyday lives.

Key Words: interview

Materials:

- Science Journal

Time:

Outside of class: 15 – 20 min for interview

Follow up: 1 class period

Procedure (1st day)

1. Explain to students that they will be interviewing an older person about their electric energy use, both at present and also what their families' electrical use during their childhood.
2. Go over the questions to be asked in the interview, and explain to the students how they should record their data.

Procedure (follow-up day)

1. On the follow-up day, lead a discussion encouraging students to share the information they gathered. Graphs and charts can be created using the class data to illustrate the historic trends in household electricity usage.
2. Lead a discussion on how energy use has changed through the years. Points to include:
 - Many homes have multiples of an item (i.e. television, computers) where one per house used to be the norm, if it was even invented yet.
 - Our use of electric appliances is growing; many things that we used to do manually now are done with electricity.
 - Our dependancy on electric appliances and gadgets is growing. Most students can not imagine doing without many of these electric "wonders."
 - Battery power is stored electrical power.
3. Discuss with the students the problems caused by our escalating energy use. Points to include:
 - Most of our electricity is made with non-renewable resources such as coal and natural gas. Reserves of these energy sources will run out sometime in the future.
 - Production of electricity from coal and natural gas produces air pollution which is a growing problem in our country.
 - The United States has 5% of the world's population and yet uses 25% of the world's resources. This unfair situation can not continue as more countries become modernized.

- Simple ways that each of us can make a difference are conservation and recycling.
 - Switching to renewable energy sources whenever practical is important on a small scale (such as a family) as well as a large scale (such as power plants and industry).
4. Students may be interested in making predictions of future electrical energy use.

Key Words and Definitions

- interview – a meeting at which information is obtained (as by a reporter) from a person

Further Research

1. Create a skit of how energy use has changed in the past 50 years and what your predictions are for the next 50 years.
2. Draw pictures of your vision of transportation 50 years from now.
3. Draw a picture of what you think the bedroom of someone your age will look like 50 years from now. Include all the gadgets and toys you think the child of the future will want.
4. Draw a picture of the kitchen of the future. Include food preparation, storage and clean-up features in your design.

Related Reading

- ***Electrical Wizard: How Nikola Tesla Lit Up The World*** by Elizabeth Rusch (Candlewick, 2015)
This is the story of the ambitious young man who brought life-changing ideas to America, despite the obstructive efforts of his hero-turned-rival, Thomas Edison. From using alternating current to light up the Chicago World's Fair to harnessing Niagara to electrify New York City, Nikola Tesla was a revolutionary ahead of his time.
- ***Timeless Thomas: How Thomas Edison Changed Our Lives*** by Geme Barretta (Henry Holt and Co, 2012)
This book is a record of Edison's technological achievements with connections from Edison's inventions to the current technology that we use. This book will inspire children to look closely at the world around them.
- ***You Wouldn't Want to Live Without Electricity*** by Ian Graham (Children's Press, 2014)
What would life be like if you had to do without modern inventions? How would you cope without electricity? This book takes students on a historical journey to see how people coped in the past, and how they developed ingenious ways to make life safer and more pleasant.

Internet Sites

<https://www.youtube.com/watch?v=8HbzaOv8HZ0>

Student, Tristan Cable, interviews Frank Collier, about life before and after his family got electricity in their home.

Remember When

Florida NGSS Standards & Related Subject Common Core

			.1	.2	.3	.4	.5	.6	.7	.8
Grade 3										
The Practice of Science	Big Idea 1	SC.3.N.1		X	X			X		
Grade 4										
The Practice of Science	Big Idea 1	SC.4.N.1		X	X		X	X		
Earth Structures	Big Idea 6	SC.4.E.6			X					
Grade 5										
The Practice of Science	Big Idea 1	SC.5.N.1	X	X			X			
Language Arts Standards	Third Grade: LAFS.3.SL.1.1, LAFS.3.SL.1.3, Fourth Grade: LAFS.4.SL.1.1, LAFS.4.SL.2.4 Fifth Grade: LAFS.5.SL.1.1, LAFS.5.SL.2.4									
Social Studies Standards	Third Grade: SS.3.A.1.1 Fifth Grade: SS.5.A.1.1									

Third Grade Benchmarks

Science–Big Idea 1: The Practice of Science

- SC.3.N.1.2 - Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.
- SC.3.N.1.3 - Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted.
- SC.3.N.1.6 - Infer based on observation.

Language Arts–Standards for Speaking and Listening

- LAFS.3.SL.1.1 - Engage effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts, building on others; ideas and expressing their own clearly.
- LAFS.3.SL.1.3 - Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

Social Studies: American History

- SS.3.A.1.1 - Analyze primary and secondary sources.

Fourth Grade Benchmarks

Science–Big Idea 1: The Practice of Science

- SC.4.N.1.2 - Compare the observations made by different groups using multiple tools and seek reasons to explain the differences across groups.

- SC.4.N.1.3 - Explain that science does not always follow a rigidly defined method (“the scientific method”) but that science does involve the use of observations and empirical evidence.
- SC.4.N.1.5 - Compare the methods and results of investigations done by other classmates.
- SC.4.N.1.6 - Keep records that describe observations made, carefully distinguishing actual observations from ideas and inferences about the observations.

Science–Big Idea 6: Earth Structures

- SC.4.E.6.3 - Recognize that humans need resources found on Earth and that these are either renewable or nonrenewable.

Language Arts–Standards for Speaking and Listening

- LAFS.4.SL.1.1 - Engage effectively in a range of collaborative discussions with diverse partners on grade 4 topics and texts, building on others; ideas and expressing their own clearly.
- LAFS.4.SL.2.4 - Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

Fifth Grade Benchmarks

Science–Big Idea 1: The Practice of Science

- SC.5.N.1.1 - Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.
- SC.5.N.1.2. - Explain the difference between an experiment and other types of scientific investigation.
- SC.5.N.1.5 - Recognize and explain that authentic scientific investigation frequently does not parallel the steps of “the scientific method.”

Language Arts–Standards for Speaking and Listening

- LAFS.5.SL.1.1 - Engage effectively in a range of collaborative discussions with diverse partners on grade 5 topics and texts, building on others’ ideas and expressing their own clearly.
- LAFS.5.SL.2.4 - Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

Social Studies–American History

- SS.5.A.1.1 - Use primary and secondary sources to understand history.

National Next Generation Science Standards

Third Grade Standards

Note: Related Common Core Language Arts Standards are listed in the Florida section above.

Fourth Grade Standards

Science–Earth and Human Activity

- 4-ESS3-1 - Obtain information to describe that energy and fuels are derived from natural resources and their use affects the environment.

Note: Related Common Core Language Arts Standards are listed in the Florida section above.

Fifth Grade Standards

Science—Earth and Human Activity

- 5-ESS3-1 - Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.

Note: Related Common Core Language Arts Standards are listed in the Florida section above.

Remember When

Name of person you interviewed: _____

Your relationship to the person you interviewed: _____

Interview Questions:

Age: (check one)

- 20 - 29
- 30 - 39
- 40 - 49
- 50 - 59
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99
- 100 +

Where did you live when you were young?

- in the country
- in the city
- in the suburbs

Where are you from?

How many people live in your house now? (include yourself)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- more than 10

How many people lived in your house when you were a child? (include yourself)

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- more than 10

Check the first box if the person you interview currently has that electrical appliance in their home. If they have more than one of the item, place that number in the box. Do the same thing for the second box if they had the item in their home as a child. If they did not have that item, find out what they used instead, and put it in the third box.

Electrical Appliance	In your home now	In your home as a child	Used instead
Entertainment			
Television			
Radio			
Stereo, record player			
CD player			
DVD player			
DVR			
Computer, laptop, tablet			
Computer printer			
Video game			
Portable music player			
Answering machine			
Cordless phone			
Cell phone			
Digital camera			
Voice assistant (Alexa, Google Assistant)			

Electrical Appliance	In your home now	In your home as a child	Used instead
Heating and Cooling			
Radiator			
Space heater			
Hot water heater			
Electric blanket			
Window air conditioner			
Central air & heat			
Ceiling fan			
Cooking			
Toaster/toaster oven			
Microwave oven			
Electric stove			
Electric oven			
Electric can opener			
Blender			
Food processor/mixer			
Coffee maker			
Electric grill (indoors)			
Juicer			
Refrigerator			
Freezer (separate)			
Garbage Disposal			

Electrical Appliance	In your home now	In your home as a child	Used instead
Cleaning			
Vacuum			
Robotic vacuum			
Washing machine			
Clothes dryer			
Dishwasher			
Iron			
Steamer/carpet cleaner			
Vacuum for pool			
Personal Items			
Hairdryer			
Electric curlers			
Electric clock			
Electric shaver			
Electric toothbrush			
Curling iron			
Other Items Around the House			
Garage door opener			
Pool pump			
Electric pool heater			
Sprinkler system			
Security system			