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Table of Contents

UTAH

PACIFICORP COMMUNICATIONS, OUTREACH, AND EDUCATION	2
UTAH.....	2
<i>Preface</i>	2
CUSTOMER SURVEY RESULTS	2
<i>Research Methodology</i>	2
<i>Key Research Findings – Residential Customers</i>	2
<i>Key Research Findings – Commercial Customers</i>	3
<i>Conclusions</i>	4
CAMPAIGN ACTIVITIES.....	4
<i>Customer Communications</i>	4
<i>Wattsmart Campaign</i>	5
Table 1 – Communication Channels	5
PROGRAM-SPECIFIC MARKETING	7
<i>Wattsmart Homes Program.....</i>	7
<i>Energy Insights Reports</i>	8
<i>Cool Keeper.....</i>	8
<i>Wattsmart Business</i>	9
Table 3 – Wattsmart Business Impressions by Media Type.....	9
OUTREACH CAMPAIGN BUDGET RESULTS	9
Table 4 – 2021 Budget & Approximate Expenditures.....	10
EXHIBITS	11
<i>Exhibit A.....</i>	11
2020 Energy Efficiency Web Questionnaire	22
<i>Exhibit B.....</i>	34
<i>Exhibit C</i>	35

PACIFICORP COMMUNICATIONS, OUTREACH, AND EDUCATION

UTAH

Preface

On June 11, 2021, the 2021 CAMPAIGN Commission approved the Company's proposal to implement an outreach and communications campaign. The program's objective is to promote energy efficiency and conservation through education and increase customer awareness of the Company's DSM programs. This report presents an assessment of year 12 (calendar year 2021) of the DSM outreach and communications campaign, including an evaluation of Wattsmart in meeting its objectives and a summary of year 12 program activities.

CUSTOMER SURVEY RESULTS

The Company has conducted customer research each year from 2010 to 2021 to determine the effectiveness of the outreach and communications campaign in increasing the awareness of and self-reported participation in DSM programs. The research methodology and findings of this survey work are included below.

Research Methodology

MDC Research completed 1,093 residential online surveys in September 2021 and 288 business online surveys in July and August 2021 using online survey methodology.

The overall objective of this research was to measure awareness and affinity for Rocky Mountain Power's energy conservation programs. Additional objectives included: measuring the awareness level of Rocky Mountain Power advertisements and determining awareness of Rocky Mountain Power being a resource for energy efficiency; distinction between Wattsmart and Rocky Mountain and Pacific Power; and discerning actions residential and business customers are taking to conserve energy.

Escalante National Benchmarking Study contains high-level findings regarding energy efficiency in which Rocky Mountain Power received a score of 83% among residential customers. These customers think the Company does a good job of "Providing information on how to control your electricity costs," and a score of 77% among the program's objective of "Providing information on how to control electricity costs."

Key Research Findings – Residential Customers

Eighty-two percent of residential customers say Rocky Mountain Power does a good job of having programs that help customers use energy more efficiently. Positive ratings are nearly the same as 2020 year-end findings (83%).

Advertising and communications recall

Three in five (61%) customers recall Rocky Mountain Power communications/advertising, down



from 68% in 2020. About half (45%) say they recall seeing or hearing any energy efficiency advertising, email or news stories. Among those who recall energy efficiency information, 74% say they visited the utility's website or sought additional information and nearly two-thirds (63%) associate "Wattsmart" with Rocky Mountain Power.

Actions were taken to conserve electricity

Sixty-four percent of residential customers have taken some actions to conserve energy, up from 2020 (62%). Actions around lighting continue to be the most common, with "Installing energy-efficient lighting" as the leading action at 27%, though down from 39% in 2020. Top actions around heating/c cited, with "lowered use of/turned off AC" at 11% and "installed energy-efficient AC" at 10%, both in line with 2020 findings.

Reason for taking action

The main reasons for taking action to reduce energy use (among those who have taken action): to save money (69%) and to protect the environment (20%). The third reason is to conserve energy (18%).

Preferred information sources

Rocky Mountain Power is the most mentioned first source for customers to turn to for energy efficiency information. Rocky Mountain Power's emails and website are the most common ways respondents learn about the Company. *(MDC Research)*

Email, broadcast or cable television, online news aggregators and other websites are the top sources for information on news and current events. *(MDC Research)*

Key Research Findings – Commercial Customers

Findings for 2021 regarding energy efficiency among commercial customers show the following:

- In 2021, nine-in-ten (94%) Rocky Mountain Power business customers believe that it's "very" or "somewhat important for utility companies to help customers conserve energy through program offerings *(MDC 2021 Business Research)*.
- Additionally, more than half (64%) of business customers are aware of Rocky Mountain Power communications, in line with 2020 findings. *(MDC 2021 Business Research)*.
- In 2021, seven-in-ten (76%) Rocky Mountain Power commercial customers are aware of the Company "offering solutions to help them use energy more efficiently." Findings are identical to 2020 *(Escalent Commercial Study Wave 2 2021)*.
- In addition, seven in ten (77%) Rocky Mountain Power customers believe their utility is doing a good job of "providing information on how to control electricity costs" compared to 74% in 2020 *(Escalent Commercial Study Wave 2 2021)*.
- Approximately eight-in-ten (82%) of Rocky Mountain Power customers feel their utility company does a good job of "providing information about products and services that are of value to them", a decrease from 87% in 2020 *(Escalent Commercial Study Wave 2 2021)*.

Conclusions

Customers feel their utility is doing a good job of providing information, even though the awareness level for recall of communications has gone down for residential customers and stayed consistent for business customers. The percentage of customers taking action to save energy has remained steady among both customer categories. As in years past, customers are more likely to conserve energy by using energy-saving lighting than any other method, though lighting actions are beginning to decline overall. Customers are primarily driven to conserve energy to save money, save energy and help protect the environment.

The company continued to advertise and promote “Wattsmart” energy-efficient actions to leverage these findings to express Rocky Mountain Power’s “Powering Your Greatness” brand essence. The advertising messages empower customers to make smart choices by highlighting cost-saving behaviors, tools and rebates, and energy conservation benefits.

CAMPAIGN ACTIVITIES

Communications, Outreach and Education

Wattsmart is an overarching energy efficiency campaign to engage customers in reducing their energy usage through behavioral changes and pointing them to the programs and information to help them do it. “Rocky Mountain Power has incentives, rebates and tools to help you save energy and money” remains the key.

The Company uses earned media, customer communications, education and outreach, advertising, and program-specific marketing to communicate the value of energy efficiency, provide information regarding low-cost, no-cost energy efficiency measures, and educate customers on the availability of programs and services rebates.

In 2021, the Company introduced a new Wattsmart advertising campaign to inform and educate customers about the benefits of energy efficiency. The campaign encourages customers to take meaningful actions to reduce energy use and lower their bills.

The Company’s external communications department manages earned media in cooperation with the regional business managers located in Utah. “Earned media” generally refers to favorable television, radio, newspaper or internet news coverage gained through press releases, media events, opinion pieces, story pitches or other communication with news editors and reporters. A list of the creative and news releases is included in Exhibit C.

Customer Communications

Beyond paid media, the Company also used statement communications, email, website, social media, and news coverage. Tapping into all resources with consistent messaging has been the Company’s approach and will continue to be refined. As part of the Company’s regular communications to its customers, support materials, newsletters, and the Company’s website promote energy efficiency initiatives and case studies regularly. The Company uses the following tactics consistently to communicate to customers.

Website:

WATTSMART[®]

- rockymountainpower.net/Wattsmart (Wattsmart.com)
- URLs link directly to the energy efficiency landing page. Once there, customers can self-select their state for specific programs and incentives.

Social Media:

- Twitter feed promotes energy efficiency tips and Wattsmart programs a few times per month.
- Facebook posts include Wattsmart messages three to four times per month.

Newsletters

- *Connect* residential newsletter is sent to customers two to three times a year; each issue includes energy efficiency tips and/or rebate program information.

Wattsmart Campaign

Paid Media

The overall paid media plan objective is to effectively reach its customers through a multi-media mix that extends both reach and frequency. The audiences for communications were prioritized as follows:

- *PRIMARY*: Residential households in the Company’s service area
- *SECONDARY*: Small to mid-sized businesses.

Table 1 outlines the value provided by each communication channel.

Table 1 – Communication Channels

Communication Channel	Value to Communication Portfolio	Placement
Television, Cable Television & Over the Top (OTT)	Due to the strength and reach of Salt Lake City’s designated market area, television and OTT (Over the Top) are effective and economical media channels. OTT includes advertising on streaming services (YouTube, Netflix, Hulu, Amazon Prime Video, etc.).	Broadcast TV – 720 TRPs Cable TV – 2,481 spots OTT – 2,022,774 impressions
Radio	Given the cost relative to television, radio builds on communications delivered via television while providing for increased frequency of messages.	896 Total Rating Points (TRPs)
Print	Includes ads in local newspapers	639,784 impressions

Communication Channel	Value to Communication Portfolio	Placement
Paid Social Media (Facebook & Instagram)	Promoted posts on social media support broadcast and digital media to increase overall awareness.	4,030,195 impressions with 29,960 clicks
Digital Display	Supports the broadcast and print media while also increasing awareness for energy-saving messaging.	6,086,994 impressions with 5,061 clicks
Paid Search	Search engine marketing (SEM) helps customers find content from advertising.	185,399 impressions

The total number of 2021 impressions for the Wattsmart campaign was 12,969,243.

Weblinks to the current portfolio of advertisements are included in Exhibit C of this report.

Public Outreach

Energy Education in Schools

The Company offers a “Be Wattsmart, Begin at Home” school education program delivered through the National Energy Foundation (“NEF”). The program is designed to develop a culture of energy efficiency among teachers, students, and families. The centerpiece is a series of one-hour presentations with educational and entertaining video components and hands-on, large group activities for 4th graders. Teachers are provided instructional materials, and students are sent home with a Home Energy Worksheet to explore energy use in their homes and encourage efficient behaviors.

Presentations are based on state education guidelines. In fall 2021, 15,583 Utah students participated in the curriculum, including 200 schools taught by 601 teachers. Students received “Home Energy Worksheets” and were asked to audit their homes to receive LED night lights as incentives. Teachers were eligible to receive \$50 incentives for their classrooms depending on how many students completed their worksheet summary of NEF’s 2021 activities, and accomplishments in Exhibit B.

Social media Coverage for educating the next generation of energy savers

Rocky Mountain Power uses social media to connect with the next generation of energy savers. Videos created for the school presentations are available on Rocky Mountain Power’s YouTube channel and emphasize the importance of conservation and saving energy. The series of videos features a very enthusiastic host who demonstrates behaviors to provide fourth graders with ideas on how they can save energy to help the environment and save their parents money. Topics in the videos include turning off lights, switching to LED light bulbs, knowing what you want before opening the refrigerator, running the dishwasher only when it’s full, running a fan instead of air conditioning to stay cool, and the impacts of weatherization.

PROGRAM-SPECIFIC MARKETING

All energy efficiency program marketing and communications are under the Wattsmart umbrella to ensure a seamless transition from changing customer behavior to the actions they could take by participating in specific programs. Separate marketing activities administered by and specific to the programs ran in conjunction with the Wattsmart campaign.

Wattsmart Homes Program

The Wattsmart Homes program is communicated to customers, retailers and trade allies through various channels. Using a strategic approach, the Program communicates select priority measures during key selling seasons and uses opportunities like home shows to help increase customer awareness of energy efficiency incentives.

The program communications team supported the following initiatives in 2021:

- Cooling campaign promoting rebates for target cooling measures such as ductless heat pumps, supplemental ductless heat pumps and dual fuel heat pumps.
- Heating campaign promoting rebates for target heating measures such as dual fuel heat pumps, ductless heat pumps and supplemental ductless heat pumps.
- Weather triggered emails
- Spring and fall home shows
- Smart thermostat instant rebates

Cooling and Heating Campaigns

In 2021, the heating and cooling campaigns utilized past customer participation, modeling, and mosaic data, to put in motion a highly targeted email and direct mail campaign promoting dual fuel heat pumps, ductless heat pumps and supplemental ductless heat pumps. Messaging highlighted the energy and cost-saving benefits of the equipment and sent customers to content-rich landing pages for more information regarding rebate amounts and requirements.

Weather Triggered Emails

In 2020, the Wattsmart Homes Program implemented a weather event-triggered email campaign promoting key priority measures during instances of extreme heatwaves or winter storms. Due to the campaign's success, the Program continued into 2021 with two deployments in Utah: July and December promoting ductless heat pumps, supplemental ductless heat pumps, and dual fuel heat pumps. The email campaigns continued to see high open rates with an average of 33% and 2,391 clicks to the measure-specific landing pages. Monitoring inclement weather allows us to time measure messages with days or weeks that customers are most inclined to take advantage of an offer. This tactic will continue to be refined in 2022 and beyond.

Home shows

Due to the ongoing COVID-19 pandemic, the Spring Salt Lake Tribune Home and Garden Festival, typically held in March, was canceled.

As the pandemic numbers plateaued and with strict CDC guidelines, the Wattsmart Homes program staff attended The Deseret News Home Show October 8-10, 2021, at the Mountain America Expo Center in Sandy, Utah.

To help drive show attendance, a customer email and website promotions were used to increase awareness of the show. More than 346 customers used Rocky Mountain Power’s online coupon code to get discounted admission to the show. The higher-than-average code usage can be attributed to residents comfortable attending public events after mass shutdowns across the nation due to the pandemic were lifted. Customers who visited the booth received information about energy efficiency upgrades and renewable energy choices and could enter to win a Daikin Fit Dual Fuel Heat Pump.

Smart thermostat promotions

In 2021, Earth Day was the primary promotion for smart thermostats in Utah, encouraging customers to purchase a new smart thermostat to take advantage of Wattsmart incentives and manufacturer discounts. Through past participation data layered with customer mosaics, customers were chosen to pinpoint the right customers with the highest propensity to purchase a smart thermostat. These eligible customers had not received an incentive or redeemed a Wattsmart instant rebate for a smart thermostat. Email performance resulted in a 19% open rate and 2,393 coupon reservations in Utah.

Wattsmart Homes Communications

Communications Channel	Impressions
Direct mail	6,000
Emails	706,649

Energy Insights Reports

Thousands of print and email Energy Insights Reports were delivered to Utah residential and small to mid-size business customers in 2021.

Customer satisfaction and engagement with the Bidgely program demonstrated consistently positive results. Email open rates averaged 31%, which is more than the utility industry average. Email recipients also gave the email communications they received 69% “likes” via thumbs up and thumbs down voting buttons included with every message.

Cool Keeper

The company uses a variety of direct outreach to keep *Cool Keeper* participants informed and encourage new customers to take part. In 2021, outreach included:

- Letters to apartment tenants.
- Reminder letters and emails to participants ahead of the Cool Keeper summer cooling



season.

- A series of different emails to non-participants to encourage participation.
- An email to participants at the end of the summer season with a link to an online survey.
- A postcard and email to participants at the end of November to thank participants and provide their Cool Keeper bill credit amount.

Wattsmart Business

In 2021, Wattsmart Business communications encouraged customers to inquire about incentives for lighting with controls, HVAC upgrades, irrigation, and other energy efficiency measures.

The program was marketed with radio ads and NPR underwriting, newspaper ads, digital display, paid social posts and paid search advertising. Updated campaign ads featured incentives and tools to help businesses reduce energy costs and save money. This was in addition to direct customer contact by Company project managers and regional business managers, trade ally partners, and content on the Company website, Facebook, etc.

In 2021, the program garnered 14,922,622 impressions. A breakdown of impressions by media type is shown in Table 3 below.

Table 3 – Wattsmart Business Impressions by Media Type

Communications Channel	Impressions
Newspaper	2,615,922
Digital display/Search	8,111,793
Social media	4,194,907

OUTREACH CAMPAIGN BUDGET RESULTS

The 2021 budget for outreach activities was \$1,500,000, as presented in Table 4 below. The channel of communication summarizes estimated expense.

Table 4 – 2021 Budget & Approximate Expenditures

	Budget	Approximate Expenditures
TV	\$328,000	\$ 335,721
Radio	\$10,000	\$11,485
Print/Out of Home	\$ 100,000	\$104,787
Digital/Social	\$ 245,000	\$ 244,039
Creative/Production/Planning	\$ 325,000	\$ 325,721
General PR	\$ 6,000	\$ 6,271
Energy Insight Reports	\$200,000	\$200,000
Wattsmart Events and Sponsorships	\$ 30,000	\$ 34,050
Be Wattsmart, Begin at Home School Education Program (NEF)	\$245,000	\$ 257,436
Research	\$ 11,000	\$ 11,040
Total	\$ 1,500,000	\$ 1,530,550

EXHIBITS

Exhibit A



Exhibit A

Energy Efficiency Questionnaires

**Rocky Mountain Power
2020 Energy Efficiency Web Questionnaire**

Date: June 29, 2020
Universe: General public, Rocky Mountain Power service areas Utah, Idaho, and Wyoming
Sample size: 1000 Rocky Mountain Power residential customers
Screener: Head of household, most likely to contact the utility company
Objective: Measure the public's awareness and affinity for energy conservation programs

LANDING PAGE

MDC Research is conducting a survey on behalf of Rocky Mountain Power regarding its services and programs.

This survey usually takes a few minutes. We are only interested in your opinions. We are not selling anything.

Thank you in advance for taking the time to help us serve you better. We appreciate your participation very much!

To begin the survey, please click '>>>' below.

L1. RECORD STATE FROM SAMPLE

- 1 Idaho (QUOTA: MIN 200; NO MAX)
- 2 Utah (QUOTA: MIN 600; NO MAX)
- 3 Wyoming (QUOTA: MIN 200; NO MAX)

We have a few questions to start to make sure we hear from a broad mix of Rocky Mountain Power customers.

S0 What is your gender?

- 1 Male
- 2 Female

Q1 [Screener 1] Is Rocky Mountain Power your electricity provider?

- 1 Yes
- 2 No à **THANK & TERMINATE**
- 3 Prefer not to say à **THANK & TERMINATE**



Q2 **[Screener 2]** Are you a person in your household who is likely to make decisions about your household participating in services offered by Rocky Mountain Power?

- 1 Yes
- 2 No à **THANK & TERMINATE**
- 3 I prefer not to answer à **THANK & TERMINATE**

Q3 Do you own or rent your home?

- 1 Rent
- 2 Own/ buying
- 3 Other
- 7 Prefer not to say

Q4 What is your age category?

- 1 18 to 24
- 2 25 to 34
- 3 35 to 44
- 4 45 to 54
- 5 55 to 64
- 6 65 or over
- 7 Prefer not to say

Q5 What is your HIGHEST LEVEL OF EDUCATION that you have had the opportunity to complete?

- 11 Less than High School
- 12 High School Degree
- 13 Some College
- 14 College Degree
- 15 Some Graduated Study
- 16 Post-Graduate Degree or Higher
- 98 Prefer not to say

Q6 During the past six months, from what electric or gas companies do you recall seeing, hearing or reading any form of advertisements or communications?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

11 Idaho Power

- 12 Dominion Energy (Questar Gas)
- 13 Northwest Natural
- 14 Pacific Gas & Electric/PG&E
- 15 Pacific Power/PPL
- 16 PacifiCorp
- 17 Portland General/PGE
- 18 Rocky Mountain Power/Utah Power
- 99 Other, Specify
- 88 None

Q7 During the past six months, do you recall seeing, hearing or reading any form of advertisements or communications from Rocky Mountain Power?

- 1 Yes
- 2 No à**SKIP TO Q8A**

Q8 What types of messages or topics do you remember from Rocky Mountain Power’s advertisements or communications?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 Working to keep your power on
- 12 Electrical safety
- 13 Programs such as equal pay or customer guarantees
- 14 Energy efficiency programs
- 15 Using energy wisely
- 16 Planning for your future energy needs
- 17 Preparing for power outages
- 18 Renewable or alternative energy sources
- 19 System or infrastructure improvements
- 20 Billing or energy assistance
- 21 Being Wattsmart
- 22 Blue Sky Renewable Energy
- 23 Solar energy generation
- 24 Home Energy Report (Comparison to similar homes’ energy usage)
- 99 Other, Specify _____
- 97 Don’t remember/Don’t know

Q8A During the past six months, do you recall seeing, hearing or reading the phrase “being Wattsmart?”



- 1 Yes
- 2 No à**SKIP TO Q9**

Q8B Which, if any, companies are associated with the phrase “Wattsmart?”

99 RECORD: _____

Q9 In the past year, have you taken any actions or changed anything in your household to save energy?

- 1 Yes
- 2 No à **SKIP TO Q12**
- 3 Prefer not to say à **SKIP TO Q12**

Q10 What actions have you taken in your home in order to save energy?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 Add insulation to your attic, roof, or walls
- 12 Reduce heating thermostat setting
Increase cooling thermostat setting
Install smart thermostat
- 13 Generally conserve or use less energy
- 14 Install an energy-efficient air conditioner or furnace
- 15 Install energy-efficient appliances
- 16 Install energy-efficient doors or windows
- 17 Insulate or caulk around windows or doors
- 18 Insulate water heater, pipes, or air ducts
- 19 Tune up your furnace or water heater
- 20 Turn off lights when leaving a room
- 21 Unplug appliances when away from home
- 22 Use energy-saving light bulbs
- 23 Monitor usage based on Home Energy Report
- 99 Other: _____
- 97 Don't know

Q11 What are the main reasons you took steps to conserve energy in your home?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 To protect the environment
- 12 To reduce need for new energy infrastructure
- 13 To save money
- 14 Heard ads encouraging energy conservation
- 15 To make my home more comfortable
- 16 Needed to replace an old or broken appliance
- 17 To take advantage of a rebate or tax credit
- 99 Other: _____

97 Don't know/ none

Q12 How important is it for utility companies to offer customers programs to help conserve energy?

- 1 Not at all important
- 2 Not very important
- 3 Somewhat important
- 4 Very important
- 7 Don't know

Q13 What sources do you typically rely on for information about news and current events?

Select all that apply.

- 11 Billboard
- 12 Bill insert
- 13 Direct mail
- 14 Family, friends, co-workers
- 15 Magazine
- 16 Newspaper
- 17 Radio
- 18 Social networking (e.g., blogs, Facebook, Twitter)
- 19 Television
- 20 Trade publication
- 21 Website (Rocky Mountain Power)
- 22 Website (other than Rocky Mountain Power)
- 23 Email
- 99 Other, Specify _____
- 97 Don't remember/Don't know

Q14 What sources do you typically rely on for information about Rocky Mountain Power?

Select all that apply.

- 11 Billboard
- 12 Bill insert
- 13 Direct mail
- 14 Family, friends, co-workers
- 15 Magazine
- 16 Newspaper
- 17 Radio
- 18 Social networking (e.g., blogs, Facebook, Twitter)
- 19 Television

- 20 Trade publication
- 21 Website (Rocky Mountain Power)
- 22 Website (other than Rocky Mountain Power)
- 23 Email
- 99 Other, Specify _____
- 97 Don't remember/Don't know

Q15 How interested do you think Rocky Mountain Power is about helping you save energy? Please use a 1-5 scale. One means *not at all interested*. Five means *very interested*.

- 1 Not at all interested
- 2
- 3
- 4
- 5 Very interested
- 97 Don't know

Q16 Which one of the following would you most likely turn to first for energy-efficiency information?
[ROTATE 1 – 5]

- 1 Rocky Mountain Power
- 2 Dominion Energy (Questar Gas)
- 3 Home improvement retailer
- 4 State Department of Energy
- 5 Federal government
- 99 Other, Specify _____
- 97 Don't know

Q16a Which one of the following would you most likely turn to first for renewable energy information?
[ROTATE 1 – 5]

- 1 Rocky Mountain Power
- 2 Dominion Energy (Questar Gas)
- 3 Home improvement retailer
- 4 State Department of Energy
- 5 Federal government
- 6 Solar Installer (Name: _____)
- 99 Other, Specify _____
- 97 Don't know (DNR)

Q17 Using a 0-10 scale, where 0 means not at all satisfied, and 10 is completely satisfied, how satisfied are you overall with Rocky Mountain Power? You can use any number from 0-10.

99 RECORD RATING _____

97 Don't know/refused

Q18 Compared to a year ago, has your satisfaction with Rocky Mountain Power increased, stayed the same or decreased?

1 Decreased

2 Stayed the same à **SKIP Q19**

3 Increased

97 Don't know/refused à **SKIP Q19**

Q19 And why do you say your satisfaction has **(INCREASED, OR DECREASED FROM Q18)**?

99 RECORD: _____

We are about done. We have just one more question to help us categorize your responses.

Q20 Which of the following best describes your annual household income?

11 Less than \$20,000

12 \$20,000 to \$39,999

13 \$40,000 to \$59,999

14 \$60,000 to \$89,999

15 \$90,000 to \$129,999

16 \$130,000 to \$199,999

17 \$200,000 or more

97 Prefer not to say

EXIT

Thank you very much for your help with this important research! We appreciate you taking the time to provide us with your feedback.

For questions about the survey or data collection, please email rockymountainpower@mdcinvite.com.

WATTSMART[®]

To submit your survey responses, please click the >>> button below.

IP NOTE: DIRECT RESPONDENTS TO WWW.ROCKYMOUNTAINPOWER.NET/wattsmart

**Rocky Mountain Power
2020 Energy Efficiency Web Questionnaire**

Date: July 13, 2020
Universe: General business, Rocky Mountain Power service areas Utah, Idaho and Wyoming and Pacific Power service areas in Washington
Sample size: 600 Rocky Mountain Power/Pacific Power commercial customers
 Screener: Most likely to contact utility company
Objective: Measure business customer awareness and affinity for energy conservation programs

- L1. RECORD STATE FROM SAMPLE
- 1 Idaho (TARGET: MIN 48)
 - 2 Utah (TARGET: MIN 396)
 - 3 Wyoming (TARGET: MIN 96)
 - 4 Washington (TARGET: MIN 60)

LANDING PAGE

MDC Research is conducting a survey on behalf of [IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power] regarding their services and programs.

This survey usually takes a few minutes. We are only interested in your opinions. We are not selling anything.

We thank you in advance for taking the time to help us serve you better. We appreciate your participation very much!

To begin the survey, please click '>>>' below.

We have a few questions to start to make sure we hear from a broad mix of [IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power] customers.

- S0 What is your gender?
- 1 Male
 - 2 Female

Q1 **[Screener 1]** Is **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]** the electricity provider for your business or organization?

- 1 Yes
- 2 No à **THANK & TERMINATE**
- 3 Prefer not to say à **THANK & TERMINATE**

Q2 **[Screener 2]** Are you a person in your company who is likely to make decisions about your business or organization participating in services offered by **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**?

- 1 Yes
- 2 No à **THANK & TERMINATE**
- 3 I prefer not to answer à **THANK & TERMINATE**

Q21 How many locations does your business or organization have?
Please enter your response as a whole number in the box below. Your best estimate is fine.

Record: [Accept responses between 1 and 200]

- 996 More than 200
- 997 Unsure
- 998 Prefer not to say

Q22 How many people work at your business or organization at your location?

- 1 Less than 10
- 2 10-20
- 3 More than 20
- 7 Unsure
- 8 Prefer not to answer

Q24 What is your job title? **ROTATE**

Please select the one response which best applies.

- 11 Owner/Co-owner
- 12 Manager
- 13 Office Manager
- 14 Admin/Secretary/Receptionist
- 15 President

16 Director
99 Other (specify)

Q26 What is your age category?

- 1 18 to 24
- 2 25 to 34
- 3 35 to 44
- 4 45 to 54
- 5 55 to 64
- 6 65 or over
- 7 Prefer not to say

Q27 What is your HIGHEST LEVEL OF EDUCATION that you have had the opportunity to complete?

- 11 Less than High School
- 12 High School Diploma
- 13 Some College
- 14 College Degree
- 15 Some Graduated Study
- 16 Post-Graduate Degree or Higher
- 98 Prefer not to say

Q3 During the past six months, from what electric or gas companies do you recall seeing, hearing or reading any form of advertisements or communications?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 Idaho Power
- 12 Dominion Energy (Questar Gas)
- 13 Northwest Natural
- 14 Pacific Gas & Electric/PG&E
- 15 Pacific Power/PPL
- 16 PacifiCorp
- 17 Portland General/PGE
- 18 Rocky Mountain Power/Utah Power
- 19 Columbia REA (Washington)
- 20 Cascade Natural Gas (Washington)
- 99 Other, Specify
- 88 None

Q4 During the past six months, do you recall seeing, hearing or reading any form of advertisements or communications from [IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]?

- 1 Yes
- 2 No àSKIP TO Q6

Q5 What types of messages or topics do you remember from [IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]’s advertisements or communications?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 Working to keep your power on
- 12 Electrical safety
- 13 Programs such as equal pay or customer guarantees
- 14 Energy efficiency programs
- 15 Using energy wisely
- 16 Planning for your future energy needs
- 17 Preparing for power outages
- 18 Renewable or alternative energy sources
- 19 System or infrastructure improvements
- 20 Billing or energy assistance
- 21 Being Wattsmart
- 22 Blue Sky Renewable Energy
- 23 Solar energy generation
- 24 Intermountain Healthcare endorsement
- 25 Small Business Lighting– Red Iguana, SparkleZone, TrimLight
- 27 Apple King endorsement
- 28 Canoe Ridge Winery endorsement
- 29 Wray’s Marketfresh IGA endorsement
- 99 Other, Specify _____
- 97 Don’t remember/Don’t know

Q6 During the past six months, do you recall seeing, hearing or reading the phrase “Being Wattsmart?”

- 1 Yes
- 2 No àSKIP TO Q8

Q7 Which, if any, companies are associated with the phrase “Wattsmart?”

99 RECORD: _____



Q8 How would you rate your level of agreement or disagreement with the statements below about **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]? (ROTATE)**

[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]...

	Completely disagree								Completely agree	
A. ...offers solutions to help customers use energy more efficiently	1	2	3	4	5	6	7	8	9	10
B. ...provides information on how to control energy costs	1	2	3	4	5	6	7	8	9	10
C. ...helps your company/organization by providing cash incentives to save money on energy bills	1	2	3	4	5	6	7	8	9	10
D. ...provides information about products and services that are of value to you and your organization	1	2	3	4	5	6	7	8	9	10

Q9 In the past year, have you taken any actions or changed anything in your business/organization to save energy?

- 1 Yes
- 2 No à **SKIP TO Q12**
- 3 Prefer not to say à **SKIP TO Q12**

Q10 What actions have you taken in your business in order to save energy?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 Reduce heating thermostat setting
- 12 Increase cooling thermostat setting
- 13 Generally conserve or use less energy
- 14 Install an energy-efficient air conditioner or furnace
- 15 Install energy-efficient lighting such as LEDs
- 16 Install energy-efficient doors or windows
- 17 Added insulation
- 18 Installed a ceiling fan
- 19 Use computers or TV less often
- 20 Turn off lights more frequently
- 21 Invested in an energy management system (EMS)
- 22 Increased/expanded usage of energy management system (EMS)
- 23 Change equipment set-points
- 24 Capital equipment upgrades
- 99 Other: _____
- 97 Don't know

Q11 What are the main reasons you took steps to conserve energy in your business/organization?

99 RECORD: _____

DO NOT DISPLAY; FOR CODING USE ONLY

- 11 To protect/help the environment
- 12 To reduce need for new energy infrastructure
- 13 To save money
- 14 Heard ads encouraging energy conservation
- 15 To make my business more comfortable
- 16 Needed to replace old or broken equipment
- 17 To take advantage of a rebate or tax credit
- 18 It's the right thing to do
- 19 To meet corporate sustainability goals
- 20 For marketing/promotion of business
- 21 To be a good corporate citizen
- 22 To help the community
- 99 Other: _____
- 97 Don't know/ none

Q12 How important is it for utility companies to offer customers programs to help conserve energy?

- 1 Not at all important
- 2 Not very important
- 3 Somewhat important
- 4 Very important
- 7 Don't know

Q28 How important is it for utility companies to offer programs to help ease demand for energy during select, high-usage periods, also referred to as Demand Response?

- 1 Not at all important
- 2 Not very important
- 3 Somewhat important
- 4 Very important
- 7 Don't know

Q13 What sources do you typically rely on for information about news and current events?
Select all that apply.

- 11 Billboard
- 12 Bill insert
- 13 Direct mail
- 14 Family, friends, co-workers
- 15 Magazine
- 16 Newspaper
- 17 Radio
- 18 Social networking (e.g., blogs, Facebook, Twitter, LinkedIn, Reddit)
- 19 Television
- 20 Trade publication
- 21 Website ([IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power])
- 22 Website (other than [IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power])
- 23 Email
- 24 News apps
- 99 Other, Specify _____
- 97 Don't remember/Don't know

Q14 What sources do you typically rely on for information about **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**?

Select all that apply.

- 11 Billboard
- 12 Bill insert
- 13 Direct mail
- 14 Family, friends, co-workers
- 15 Magazine
- 16 Newspaper
- 17 Radio
- 18 Social networking (e.g., blogs, Facebook, Twitter, LinkedIn, Reddit)
- 19 Television
- 20 Trade publication
- 21 Website (**[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**)
- 22 Website (other than **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**)
- 23 Email
- 24 News apps
- 99 Other, Specify _____
- 97 Don't remember/Don't know

Q15 How interested do you think **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]** is in helping your business/organization save energy? Please use a 1-5 scale. One means *not at all interested*. Five means *very interested*.

- 1 Not at all interested
- 2
- 3
- 4
- 5 Very interested
- 97 Don't know

Q16 Which one of the following would you most likely turn to first for energy-efficiency information?
[ROTATE 1 – 7]

- 1 **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**
- 2 Dominion Energy (Questar Gas)
- 6 **[IF L1=4: Cascade Natural Gas]**
- 7 **[IF L1=4: Columbia REA]**
- 3 Home improvement retailer

WATTSMART®

- 4 State Department of Energy
- 5 Federal government
- 6 Contractor and/or equipment supplier
- 99 Other, Specify _____
- 97 Don't know

Q16a Which one of the following would you most likely turn to first for renewable energy information?
[ROTATE 1 – 8]

- 1 **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**
- 2 Dominion Energy (Questar Gas)
- 7 **[IF L1=4: Cascade Natural Gas]**
- 8 **[IF L1=4: Columbia REA]**
- 3 Home improvement retailer
- 4 State Department of Energy
- 5 Federal government
- 6 Solar Installer (Name: _____)
- 99 Other, Specify _____
- 97 Don't know

Q26 What types of assistance would you like to see from **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]** to help you save energy? *Please select all that apply.* **(ROTATE)**

- 11 Information about how you can save energy in your business
- 12 Building energy assessment
- 13 Financial incentives for building retrofit measures
- 14 Financial incentives for high efficiency equipment
- 15 Discounts on energy-saving lighting and other office products
- 99 Other, Specify _____
- 88 None of these

Q17 Using a 0-10 scale, where 0 means not at all satisfied, and 10 is completely satisfied, how satisfied are you overall with **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]**? You can use any number from 0-10.

- 99 RECORD RATING _____
- 97 Don't know/refused

Q18 Compared to a year ago, has your satisfaction with **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]** increased, stayed the same or decreased?

- 1 Decreased
- 2 Stayed the same à **SKIP Q19**
- 3 Increased
- 97 Don't know/refused à **SKIP Q19**

Q19 And why do you say your satisfaction has **(INCREASED, OR DECREASED FROM Q18)**?

99 RECORD: _____

We are about done. We have a few questions about your company/organization to help us categorize your responses.

Q20 What industry best describes your business or organization?
Please select the one response which best applies.

- 11 Building Contractors/Developers
- 12 Grocery/Retail
- 13 Healthcare
- 14 Manufacturing
- 15 Trade/Services (e.g., lawyers, banks, etc.)
- 16 Public Nonprofit/Education
- 17 Real Estate/Property Managers
- 18 Restaurant/Lodging/Entertainment
- 19 Wholesale/Transportation
- 99 Some other industry **(please specify)**
- 97 Unsure
- 98 Prefer not to answer

Q23 In your best estimate, what was the total annual total gross revenue for your business in 2018?

Record: [Accept responses between 1 and 999999995]

- 999999996 \$1,000,000,000 or more
- 999999997 Unsure
- 999999998 Prefer not to say

Q25 Which of the following best describes your business/organization's average monthly **[IF L1=1-3: Rocky Mountain Power; IF L1=4: Pacific Power]** bill?

- 1 \$0-199
- 2 \$200<\$250
- 3 \$250<\$500

- 4 \$500<\$1000
- 5 \$1,000<\$2,500
- 6 \$2,500<\$5,000
- 7 \$5000+
- 8 Prefer not to say

EXIT

Thank you very much for your help with this important research! We appreciate you taking the time to provide us with your feedback.

For questions about the survey or data collection, please email [IF L1=1-3: rockymountainpower@mdcinvite.com; IF L1=4: pacificpower@mdcinvite.com].

To submit your survey responses, please click the >>> button below.

IF L1=1-3: DIRECT RESPONDENTS TO WWW.ROCKYMOUNTAINPOWER.NET/wattsmart

IF L1=4: DIRECT RESPONDENTS TO WWW.PACIFICPOWER.NET/wattsmart

Exhibit B



Exhibit B

National Energy Foundation Be Wattsmart 2020
Report

Exhibit C



Exhibit C

Creative and News Releases

Wattsmart Choices TV

- [Wattsmart Choices residential TV](#)
- [Wattsmart Choices summer cooling TV](#)

Wattsmart Choices Radio

- [Wattsmart Business](#)

Wattsmart Choices Print & Out of Home

- [Wattsmart Choices Print](#)
- [Wattsmart Choices summer cooling digital billboard](#)
- [Utah Valley Parade of Homes ad](#)

Digital & Social

- [Wattsmart Choices residential display](#)
- [Wattsmart Choices residential social](#)
- [Wattsmart Choices residential social #2](#)
- [Wattsmart Cost-Savings residential display](#)
- [Wattsmart Cost-Savings residential social](#)
- [Wattsmart Cost-Savings residential social #2](#)
- [Wattsmart usage insights social](#)
- [Wattsmart Choices summer cooling display](#)
- [Wattsmart Choices summer cooling social](#)
- [Wattsmart Choices winter heating display](#)
- [Wattsmart Choices winter heating social](#)
- [Wattsmart Business display](#)
- [Wattsmart Business social](#)
- [Wattsmart Business social #2](#)

Email

- [Cool Keeper Midseason Email](#)
- [Weather-triggered Email](#)
- [Smart Thermostat Email](#)
- [Dual Fuel Heat Pump Email](#)
- [Fall Home Show Email](#)

Connect Newsletters

- [February 2021 – Explore usage insights; improve your comfort and savings](#)
- [May 2021 – Lower costs, more efficiency](#)
- [October 2021 – Easy comfort, effortless savings](#)

News Releases

- [Four steps to beat the heat to save on summer energy costs](#)
- [Tips for staying warm during the winter](#)

Photos from 2021 Deseret News Fall Home Show





2022

NEF

Be Wattsmart,
Begin at home
UTAH

Program Report



Prepared for:

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5055 South 900 East, Suite 300

Salt Lake City, UT 84117

March 7, 2023

Savings

Teacher Name: _____
Submit online at theenergy.org/wattsmart

Submit First Name Last Initial: _____ Teacher ID: _____

Home Energy Worksheet

Heating

1. Install and use a programmable or smart thermostat.
 Currently Do Will Do Neither

2. Caulk windows and weather strip outside doors.
 Have Done Will Do Neither

3. Inspect attic insulation and add insulation if needed.
 Have Done Will Do Neither

4. Heat pumps air filters changed regularly.
 Currently Do Will Do Neither

Cooling

5. Replace existing air conditioning unit with a high-efficiency unit, heat pump or an evaporative cooling unit.
 Have Done Will Do Neither

6. Check blinds when windows are exposed to the sun.
 Currently Do Will Do Neither

7. Use a fan instead of air conditioning.
 Currently Do Will Do Neither

8. Participate in Rocky Mountain Power's Cool Keeper program.
 Currently Do Will Do Neither

Water heating

9. Set the water heater temperature to 120°F.
 Have Done Will Do Neither

10. Install a high-efficiency shower head.
 Have Done Will Do Neither

11. Take 5-minute showers.
 Currently Do Will Do Neither

12. Wash full loads in the dishwasher and clothes washer.
 Currently Do Will Do Neither

Lighting

13. Replace inefficient bulbs with LED bulbs.
 Have Done Will Do Neither

14. Turn lights off when not in use.
 Currently Do Will Do Neither

Refrigeration

15. Replace old, inefficient refrigerator with an ENERGY STAR model.
 Have Done Will Do Neither

16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.
 Have Done Will Do Neither

17. Maintain refrigerator and freezer coils and check door seals twice yearly.
 Currently Do Will Do Neither

Electronics

18. Turn off computers, TVs and game consoles when not in use.
 Currently Do Will Do Neither

Cooking

19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.
 Currently Do Will Do Neither

Get paid for being WattSmart!
20. Visit Rocky Mountain Power at WattSmart.com for more energy-saving tips and rebates.
 Have Done Will Do Neither

ROCKY MOUNTAIN POWER POWERING YOUR CLEANNESS
WATTSMART BECOME A SMARTER HOME

Home Energy Worksheets

– Returned: 7,676 –

– 63% –

- Online - 43.31%

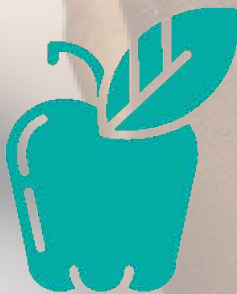
- Paper - 56.59%

Participants



Students

– 16,802 –



Teachers

– 655 –



Schools

– 200 –

Table of Contents

Program Overview	1
Program Description	1
Building Collaborations	1
Program Registration	2
Program Implementation	3
Program Materials	4
Program Website	4
Program Accomplishments	5
Attachments	7
Fall 2022 Participating Schools	7
Program Promotions	10
Program Documents	11
<i>Home Energy Worksheet (English)</i>	63
<i>Home Energy Worksheet (Spanish)</i>	64
<i>Home Energy Worksheet Summary – Rocky Mountain Power</i>	65
Wise Energy Behaviors in Rocky Mountain Power Utah Homes	68
Sampling of <i>Thanks a “WATT” Cards</i>	69

Program Overview

Program Description

“Thank you for your support of the program. Our students love it every year!”

“Students love this presentation. Participating and instruction is top notch.”

“This is a great opportunity to support what we teach in our science standards about electricity.”

“This is an excellent program to bring into the 4th grade. The content ties in directly with the curriculum and science standards.”

“What a great program for this age. They are just realizing that they can help with energy saving.”

-2022 Utah Teacher Participants

The Be Wattsmart, Begin at home program is a collaborative partnership between Rocky Mountain Power and the National Energy Foundation (NEF). It encourages teachers, students and families to “Be Wattsmart” with their energy use. The program objective is to build energy awareness, throughout the school year, with an engaging presentation and energy efficiency curriculum. The program also expands enthusiasm to homes via Rocky Mountain Power branded curriculum, games and online resources.



Building Collaborations

“I love how this program connects to the students at school and at home.”

“This is a great program and very well worth the time. Yes the incentive is nice but I would do it and recommend it without the incentive. I have myself learned a lot about energy that I like to refer back to with my students over the rest of the year.”

“This program helps students connect with the curriculum and helps them become more aware of conservation.”

“Great program that allows students to learn where the energy we use daily comes from and why we shouldn’t waste.”

-2022 Utah Teacher Participants



*Run
to
Register*

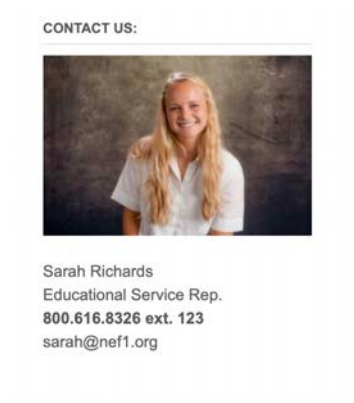
Register today to participate in the
free
Be Wattsmart, Begin at home
program with your fourth grader!



The Be Wattsmart, Begin at home program provided energy efficiency content that was custom developed to support the Utah SEEd standards as well as Utah State Office of Education’s Core Curriculum for fourth grade. Teachers appreciated the collaborative efforts to align program components to their learning standards. Curriculum correlations were provided to teacher participants in the *Teacher Guide* delivered to each teacher prior to their presentation.

NEF utilized multiple strategies to support teacher and parent participants:

- Dedicated educational service representative
- *Parent Introduction Letter*
- Spanish documents – *Home Energy Worksheet* and *Parent Introduction Letter*
- Online and hard copy *Home Energy Worksheets*
- Changed title of the student guide to family guide to support the efforts of including families in the take home information.
- Amazon eGift Cards for teachers with a qualifying *Home Energy Worksheet* return
- Automated emails to communicate program details, including submission of the *Home Energy Worksheets* and progress toward the gift card
- Online virtual presentations and live presentations to support various learning situations



Program Registration

NEF developed a postcard to promote the Be Wattsmart, Begin at home program to eligible new teachers and schools. Emails were also used to contact prior participating teachers.

Teachers were given three ways to enroll: calling or emailing the educational service representative, Sarah Richards or completing the registration form at thinkenergy.org/wattsmart-ut/. After registration was qualified, a series of email communications with teachers, were sent automatically by the program registration system.



Program Implementation

“One of the best presentations I’ve ever participated in.”

“The students LOVED it!”

“Thanks for investing in our students. They really enjoyed the presentation and learned a lot about energy and preserving it.”

“The presenters were awesome! They were positive, happy, and engaging.”

-2022 Utah Teacher Participants



In-person presentations were conducted by two experienced Energy Educators. NEF required all Energy Educators to be fully vaccinated and take their temperature each morning to protect students and teachers.

The presentation focused on important concepts, such as natural resources, electrical generation, the energy mix used by Rocky Mountain Power to generate electricity and tips for energy efficiency in the home. Energy Educators completed demonstrations of making a human electrical circuit, during which they taught key core curriculum concepts such as insulators and conductors of electricity and electrical generation. In-person assemblies included the review game, “Lingo” at designated points throughout the presentation.

To help students remember energy efficiency tips, students viewed “Caitlynn Power” video vignettes produced by PacifiCorp. The videos are a highlight for both teachers and students. In addition, the Caitlynn Power videos were added to the program website where teachers could access them for further energy instruction and where students could access them to share with their families.

In 2022 a safety concept was added to the program to reinforce electrical safety. The best way to safeguard children against electrical danger is education. Teaching students about how electricity works and then adding best safety practices will help to protect them.



The last portion of the presentation communicated the importance of the program take-home pieces. These documents enabled households to participate in energy education along with students.

Program Materials

“The Natural Resources information as it applies to our Social Studies unit, and building a human “circuit” as it applies to our energy science unit.”

“Our 4th grade science teacher has used all the activities in class.”

“When I get to the standard on Electricity/Energy I use most of the activities from the Teacher Guide.”

“I plan on using Pass the Sack and The Art of Circuits.”

-2022 Utah Teacher Participants

A *Parent Letter* was provided to explain the importance of Be Wattsmart, Begin at home. In addition, students were given a *Family Guide* and *Home Energy Worksheet* to share with their families. Students who returned their worksheet or completed a worksheet online, received an LED nightlight featuring the Rocky Mountain Power logo as a reward.



The program also added a URL code to both the *Parent Letter* and the *Home Energy Worksheet* to direct families to the program website.

Educators were also given helpful energy educational materials. Each teacher participant was provided a custom Be Wattsmart, Begin at home folder. The folder contained a custom *Teacher Guide* with additional information and activities to supplement and continue energy education in the classroom. Also, in the folder were two NEF instructional posters.

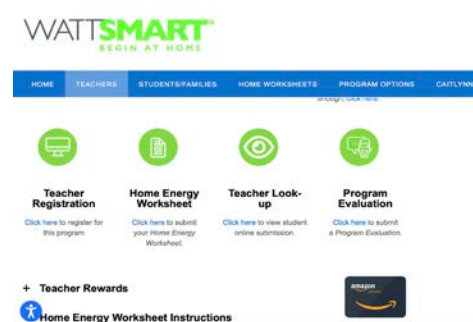
A program *Implementation Steps Flier* assisted teachers in carrying out the program either in-person or virtually. It also gave simple steps for successfully returning *Home Energy Worksheets* and the sponsor *Thanks a “Watt” Card* in the postage paid envelope. A *Rewarding Results Flier* gave information concerning the gift card teacher participants would receive for returning their student surveys. Educators received a \$50 Amazon eGift card for an 80% return by the December deadline.

Program Website

The Be Wattsmart, Begin at home program website, <https://thinkenergy.org/wattsmart-ut/>, served multiple purposes for participating teachers, students and families:

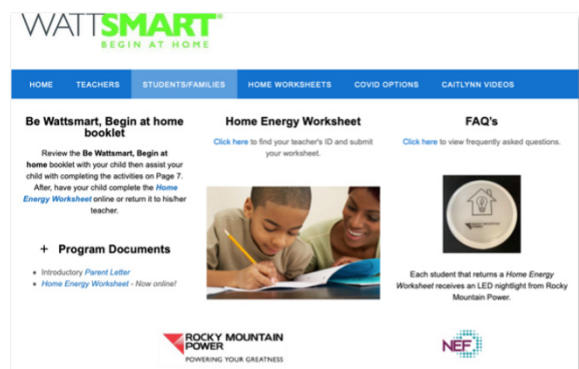
Teachers

- Program registration
- Dedicated educational service representative contact information
- Access to program presentations and documents
- Game and education page
- Links to additional resources



Students and Families

- Access to Caitlynn Power videos
- Access to the online *Home Energy Worksheets*
- Energy efficiency games
- Frequently asked questions about the program
- Program documents posted



Program Accomplishments

- 16,802 students and families reached
- 655 Utah teachers reached
- 200 Utah schools participated
- 414 teachers returned packets
- 280 \$50 eGift cards delivered to Utah teachers
- 61 \$25 eGift cards delivered Utah teachers

Attachments

Fall 2022 Participating Schools

School Name	School Address	City	State	Zip
East Midvale School	6990 South 300 East	Midvale	Utah	84047
Granite Elementary	9760 South 3100 East	Sandy	Utah	84092
Draper School	1080 East 12660 South	Draper	Utah	84020
Highland Elementary	10865 North 6000 West	Highland	Utah	84003
Northridge Elementary	1660 North 50 East Street	Orem	Utah	84057
Windsor Elementary	1315 North Main Street	Orem	Utah	84057
Three Mile Creek School	2625 South 1050 West	Perry	Utah	84302
Heritage Elementary	925 West 3200 South	Nibley	Utah	84321
River Heights School 5	780 East 600 South	River Heights	Utah	84321
Alta View Elementary	917 Larkspur Drive	Sandy	Utah	84094
Brookwood Elementary	8640 Snowbird Drive	Sandy	Utah	84093
Bella Vista School	2131 East 7000 South	Cottonwood Heights	Utah	84121
Altara Elementary	800 East 11000 South	Sandy	Utah	84094
Crescent School	11100 South 230 East	Sandy	Utah	84070
Copperview Elementary	8449 South 150 West	Midvale	Utah	84047
Canyon View School	3050 East 7800 South	Salt Lake City	Utah	84121
Woods Cross School	745 West 1100 South	Woods Cross	Utah	84087
Centennial Elementary	450 South 400 East	Orem	Utah	84097
Harvest Elementary	2105 North Providence Drive	Saratoga Springs	Utah	84045
John C. Fremont Elementary	4249 Atherton Drive	Taylorsville	Utah	84123
Legacy Elementary	28 East 1340 North	American Fork	Utah	84003
Quail Hollow Elementary	2625 Newcastle Drive	Sandy	Utah	84093
Ridgecrest Elementary	1800 7200 South	Cottonwood Heights	Utah	84121
Adams Elementary	2200 East 2500 North	Layton	Utah	84040
Western Hills Elementary	5190 Heath Avenue	Kearns	Utah	84118
Hill Field School	389 South 1000 East	Clearfield	Utah	84015
Holt Elementary	448 North 1000 West	Clearfield	Utah	84015
Mountain View Elementary	2025 East 3100 North	Layton	Utah	84040
Sand Springs Elementary	242 North 3200 West	Layton	Utah	84041
Syracuse Elementary	1503 South 2000 West	Syracuse	Utah	84075
Odyssey Charter School	738 East 700 South	American Fork	Utah	84003
Eagle Valley School	4475 Heritage Drive	Eagle Mountain	Utah	84005
Academy Park School	4580 Westpoint Drive	West Valley City	Utah	84120
Franklin School	1115 West 300 South	Salt Lake City	Utah	84104
Arcadia Elementary 5th	3461 West 4850 South	Salt Lake City	Utah	84118
Mary W. Jackson Elementary	750 West 200 North	Salt Lake City	Utah	84116
Lindon Elementary	30 North Main Street	Lindon	Utah	84042
Century Elementary	5820 North 4800 West Street	Bear River City	Utah	84301
Oak Hollow School	884 14400 South	Bluffdale	Utah	84065
Kanesville Elementary	3112 South 3500 West	Ogden	Utah	84401
Jim Bridger Elementary	5368 West 6440 South	West Jordan	Utah	84081
Park Lane School	9955 Eastdell Drive	Sandy	Utah	84092
Peruvian Park School	11150 South 300 East	Sandy	Utah	84070
Plain City Elementary	2335 North 3600 West Street	Ogden	Utah	84404
Monroe Elementary	4450 West 3100 South	West Valley City	Utah	84120
Morningside Elementary	4170 South 3000 East	Salt Lake City	Utah	84124
Philo T. Farnsworth School	3751 South Sunnyvale Drive	West Valley City	Utah	84120
South Kearns Elementary	5544 South 4385 West	Kearns	Utah	84118
Spring Lane Elementary	1700 East 5315 South	Holladay	Utah	84117
Upland Terrace Elementary	3700 South Sunnydale Drive	Salt Lake City	Utah	84109
Antelope Elementary	1810 South Main Street	Clearfield	Utah	84015
Buffalo Point School	1924 South Doral Drive	Syracuse	Utah	84075
Canyon Creek Elementary	755 South 1100 West	Farmington	Utah	84025
Cook Elementary	1175 1350 South	Syracuse	Utah	84075
Woodstock School	6015 South 1300 East	Murray	Utah	84121
Cedar East School	255 East 70 South	Cedar City	Utah	84720
Cedar South Elementary	499 West 400 South	Cedar City	Utah	84720
Ellison Park Elementary	800 Cold Creek Way	Layton	Utah	84041
Three Peaks Elementary	1685 West Midvalley Road	Cedar City	Utah	84721
Butterfield Canyon School	6860 Mary Leizan Lane	Herriman	Utah	84096
Columbia School	3505 West 7800 South	West Jordan	Utah	84088
Eastlake School	4389 Isla Daybreak Road	South Jordan	Utah	84009
Fox Hollow School	6020 8200 South	West Jordan	Utah	84081
Golden Fields School	10252 South Split Rock Drive	South Jordan	Utah	84009
Hayden Peak Elementary	5120 West Hayden Peak Drive	West Jordan	Utah	84081
Knowlton Elementary	801 Shepard Lane	Farmington	Utah	84025
Layton Elementary	369 West Gentile Street	Layton	Utah	84041

School Name	School Address	City	State	Zip
Lakeside Elementary	2941 West 800 North	Clinton	Utah	84015
Midas Creek Elementary	11901 Park Haven Lane	Riverton	Utah	84096
Oakcrest Elementary	8462 Hilltop Oak Drive	West Jordan	Utah	84081
Parkside School	2262 North 1500 West	Clinton	Utah	84015
Reading School	360 West 2025 North	Centerville	Utah	84014
Riverside School	8737 1220 West	West Jordan	Utah	84088
Silver Crest Elementary	12937 Elementary Drive	Herriman	Utah	84096
Sunburst Elementary	2504 West Sunburst Drive	Layton	Utah	84041
Sunset Elementary	2014 North 250 West	Sunset	Utah	84015
Southland Elementary	12675 South 2700 West	Riverton	Utah	84065
Terra Linda Elementary	8400 South 3400 West	West Jordan	Utah	84088
Welby Elementary	4130 West 9580 South	South Jordan	Utah	84095
Westland Elementary	2925 West 7180 South	West Jordan	Utah	84084
Westvale School	2300 Gardner Lane	West Jordan	Utah	84088
Mona Elementary	260 East 200 South Street	Mona	Utah	84645
Vae View Elementary	1750 West 1600 North	Layton	Utah	84041
Wasatch School	210 Center Street	Clearfield	Utah	84015
Dilworth Elementary	1953 South 2100 East	Salt Lake City	Utah	84108
Ensign Elementary	775 12th Avenue	Salt Lake City	Utah	84103
Bennion Elementary	West 5775 South	Taylorsville	Utah	84129
Gearld Wright School	6760 West 3100 South	West Valley City	Utah	84128
Fox Hills School	3775 Vixen Way	Salt Lake City	Utah	84129
Granger School	3700 South 1950 West	West Valley City	Utah	84119
Overlake Elementary	2052 North 170 West	Tooele	Utah	84074
Rose Springs Elementary	5349 North Insbrook Place	Erda	Utah	84074
Sterling Elementary	135 South 7th Street	Tooele	Utah	84074
Lake Ridge Elementary	7400 West 3400 South	West Valley City	Utah	84128
Lincoln Elementary	450 East 3700 South	South Salt Lake	Utah	84115
Majestic Elementary	425 West 2550 North Street	Pleasant View	Utah	84414
Midland Elementary	3100 West 4800 South	Roy	Utah	84067
North Park Elementary	4046 2175 West Street	Roy	Utah	84067
Orchard Springs Elementary	3300 North 975 West	Pleasant View	Utah	84414
Pioneer Elementary	250 North 1600 West	Ogden	Utah	84404
Neil Armstrong Academy	5194 Highbury Parkway	West Valley City	Utah	84120
Oakridge Elementary	4325 Jupiter Drive	Salt Lake City	Utah	84124
Oakwood Elementary	5815 Highland Drive	Holladay	Utah	84121
Olene Walker Elementary	3751 South 900 West	Salt Lake City	Utah	84119
Jordan Hills Elementary	8892 South 4800 West	West Jordan	Utah	84081
Orchard School	1035 North 800 East	Orem	Utah	84097
Riverdale Elementary	1160 West 4400 South	Ogden	Utah	84405
Roosevelt Elementary	190 West 5100 South	Washington Terrace	Utah	84405
Roy Elementary	2888 West 5600 South	Roy	Utah	84067
Silver Ridge Elementary	1400 North 2000 West	Ogden	Utah	84404
Valley Elementary	5821 East 1900 North	Eden	Utah	84310
Valley View School	2465 West 4500 South	Roy	Utah	84067
North Ogden Elementary	530 East 2650 North	North Ogden	Utah	84414
West Weber Elementary	4178 West 900 South Street	Ogden	Utah	84404
Sprucewood Elementary	12025 South 1000 East	Sandy	Utah	84094
Taylorsville Elementary	2010 Nielsen Way	West Valley City	Utah	84119
Bluff Ridge School	2680 Bluff Ridge Drive	Syracuse	Utah	84075
William Penn School	1670 Siggard Drive	Salt Lake City	Utah	84106
Woodrow Wilson School	2567 South Main Street	South Salt Lake	Utah	84115
Sharon Elementary	525 400 East	Orem	Utah	84097
Blackridge School	14131 Rosecrest Road	Herriman	Utah	84096
Bluffdale Elementary	14323 South 2700 West	Bluffdale	Utah	84065
Copper Canyon School	8917 Copperwood Drive	West Jordan	Utah	84081
Daybreak School	4544 Harvest Moon Drive	South Jordan	Utah	84095
Herriman Elementary	13170 South 6000 West	Herriman	Utah	84096
King Elementary	601 East 1000 North	Layton	Utah	84041
Jordan Ridge Elementary	2636 W. 9800 S.	South Jordan	UT	84095
Monte Vista School	11121 South 2700 West	South Jordan	Utah	84095
Rosamond Elementary	12195 South Doreen Drive	Riverton	Utah	84065
Stewart School	1155 North Main Street	Centerville	Utah	84014
Shadow Valley School	4911 South 1500 East	Ogden	Utah	84403
Jeremy Ranch School	3050 Rasmussen Road	Park City	Utah	84098
Mcpolin School	2270 Kearns Boulevard	Park City	Utah	84060
Trailside Elementary	5700 Trailside Drive	Park City	Utah	84098

School Name	School Address	City	State	Zip
Backman Elementary 5th Grade	601 North 1500 West	Salt Lake City	Utah	84116
Beacon Heights School	1850 South 2500 East	Salt Lake City	Utah	84108
Bonneville School	1145 South 1900 East	Salt Lake City	Utah	84108
Crestview Elementary	2100 Lincoln Lane	Holladay	Utah	84124
Newman Elementary	1269 Colorado Street West	Salt Lake City	Utah	84116
Riley Elementary	1410 South 800 West	Salt Lake City	Utah	84104
Uintah Elementary	1571 East 1300 South	Salt Lake City	Utah	84105
Eastwood School	3305 Wasatch Boulevard	Salt Lake City	Utah	84109
Washington Elementary	420 North 200 West	Salt Lake City	Utah	84103
Whittier Elementary	1600 South 300 East	Salt Lake City	Utah	84115
Timpanogos Academy	70 South 100 East	London	Utah	84042
Hillside School	4283 6000 West	West Valley City	Utah	84128
Howard R. Driggs School	4340 South 2700 East	Holladay	Utah	84124
Hunter Elementary	4351 South 5400 West	West Valley City	Utah	84120
Harry S. Truman School	4369 South 3200 West	West Valley City	Utah	84119
Burch Creek Elementary	4300 Madison Avenue	Ogden	Utah	84403
Green Acres Elementary	640 East 1900 North	North Ogden	Utah	84414
H Guy Child Elementary	655 East 5500 South	South Ogden	Utah	84405
Lomond View Elementary	3644 North 900 West	Pleasant View	Utah	84414
Falcon Ridge Elementary	6111 West 7000 South	West Jordan	Utah	84081
Foothills Elementary	13717 South Shaggy Peak Drive	Riverton	Utah	84096
Willow Canyon School	9650 South 1700 East	Sandy	Utah	84093
New Bridge School	2150 Jefferson Avenue	Ogden	Utah	84401
Elk Meadows School	3448 Shields Lane	South Jordan	Utah	84095
Naples Elementary	1640 East 1900 South	Vernal	UT	84078
Meadowlark Elementary	497 Morton Drive	Salt Lake City	Utah	84116
Orchard Elementary	205 East Center Street	North Salt Lake	Utah	84054
Parleys Park Elementary	4600 Silver Springs Drive	Park City	Utah	84098
Hawthorne Elementary	1675 South 600 East	Salt Lake City	Utah	84105
Liberty Elementary	1090 South Roberta Street	Salt Lake City	Utah	84111
Country View School	4650 West 4800 South	West Haven	Utah	84401
Lincoln Academy	1582 West 3300 North	Pleasant Grove	Utah	84062
Hobble Creek Elementary	1145 East 1200 North	Mapleton	Utah	84664
Cedar North Elementary	550 West 200 North	Cedar City	Utah	84720
Old Mill Elementary	130 Brigham Road	Tooele	Utah	84074
Aspen Elementary	11189 South Willow Walk Drive	South Jordan	Utah	84009
Quest Academy Charter	4862 West 4000 South	West Haven	Utah	84401
Oak Leaf Elementary	6936 Silver Sky Drive	Herriman	Utah	84096
Mapleton Elementary	120 West Maple Street	Mapleton	Utah	84664
Open Classroom	134 D Street East	Salt Lake City	Utah	84103
Washington Terrace Elementary	20 East 4600 South	Ogden	Utah	84405
Lakeview Elementary	2025 West 5000 South	Roy	Utah	84067
South Jordan Elementary	11205 Black Cherry Way	South Jordan	Utah	84095
Hidden Hollow Elementary	7447 Hidden Valley Parkway	Eagle Mountain	Utah	84005
Gateway Preparatory Academy	201 Thoroughbred Way	Enoch	Utah	84721
Forbes Elementary	281 North 200 East	American Fork	Utah	84003
Voyage Academy	1891 North 1500 West	Clinton	Utah	84015
Cedar Valley Elementary	40 East Center	Cedar Valley	Utah	84013
Redwood Elementary	2650 South Redwood Road	West Valley City	Utah	84119
Emerson Elementary	1017 East Harrison Avenue	Salt Lake City	Utah	84105
Millcreek Elementary	3761 South 1100 East	Millcreek	Utah	84106
Fremont Elementary	2525 North 160 West	Sunset	Utah	84015
Heritage Elementary	1354 West Weaver Lane	Layton	Utah	84041
Orem Elementary	450 West 400 South	Orem	Utah	84058
Hillcrest Elementary	130 North Eccles Avenue	Ogden	Utah	84404
Mountainville Academy	195 South Main Street	Alpine	Utah	84004
South Weber Elementary	1285 East Lester Street	South Weber	Utah	84405
West Bountiful Elementary	750 West 400 North	West Bountiful	Utah	84087
Wasatch Elementary	30 R Street	Salt Lake City	Utah	84103
Valley Crest Elementary	5240 West 3100 South	West Valley City	Utah	84120
Whittier Elementary	3585 6000 West	West Valley City	Utah	84128
Brookhaven Elementary	7082 North Seedling Drive	Eagle Mountain	Utah	84005
Eaglecrest Elementary	2760 North 300 West	Lehi	Utah	84043
Rose Creek Elementary	12812 3600 West	Riverton	Utah	84065
Bastian Elementary	5692 West Big Bend Park Drive	Herriman	Utah	84096

Program Promotions



Run to Register

Register today to participate in the *free* Be Wattsmart, Begin at home program with your fourth graders!



WATTSMART® BEGIN AT HOME

The Be Wattsmart, Begin at home program provides your fourth graders with electricity learning standards through a fun and interactive presentation! You will also receive free energy education posters, energy activities and earn an Amazon eGift Card of up to \$50 by participating!

Presentations begin in fall 2022.
Reserve your classroom's spot today at thinkenergy.org/wattsmart-ut or email Sarah at sarah@nefl.org.




Program Documents

Keynote Presentation



WATTSMART[®]

ROCKY MOUNTAIN POWER.



We have the power to learn.

POWERING YOUR GREATNESS

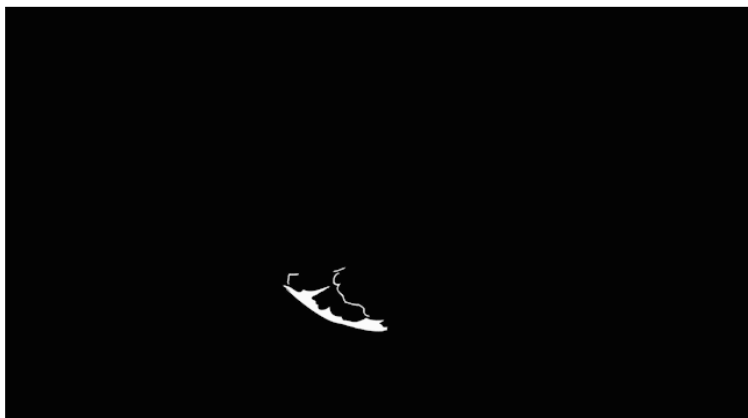
What is **ENERGY?**

POWERING YOUR GREATNESS

ENERGY is the ability to do **WORK**.



POWERING YOUR GREATNESS



Heat (thermal) Light Mechanical

Electrical Sound

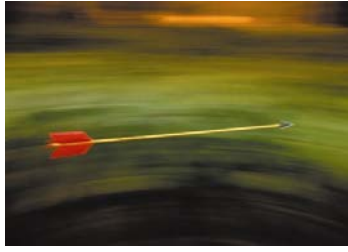
Chemical

ENERGY

Potential Energy



Kinetic Energy



POWERING YOUR GREATNESS

Natural Resources



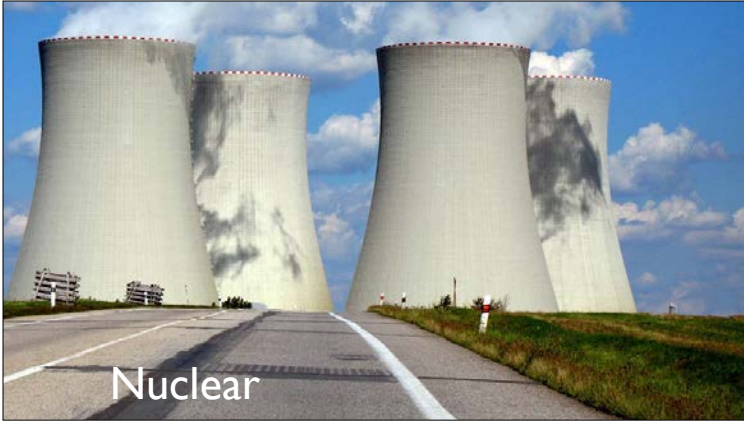
Anything we use that comes from the earth or the sun

POWERING YOUR GREATNESS

Nonrenewable Resources

POWERING YOUR GREATNESS





Nonrenewable Resources

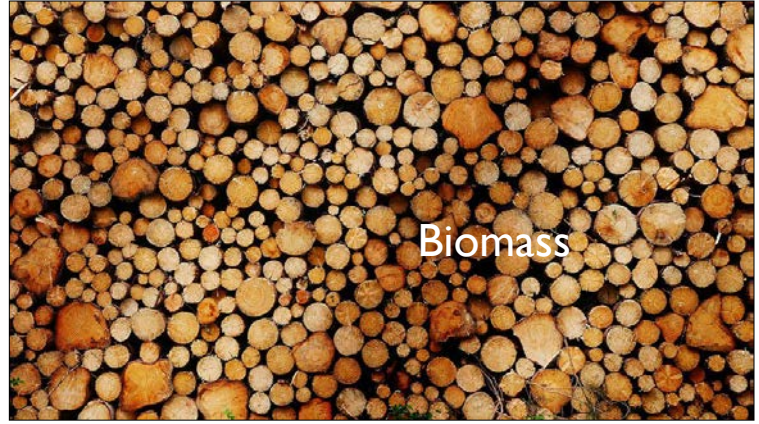
POWERING YOUR GREATNESS

A slide titled "Nonrenewable Resources" featuring four small images: a hand holding a piece of coal, two nuclear cooling towers, a blue and red flame, and an oil pumpjack. The text "POWERING YOUR GREATNESS" is at the bottom right.

Renewable Resources

POWERING YOUR GREATNESS

A slide titled "Renewable Resources" with the text "POWERING YOUR GREATNESS" at the bottom right.



Renewables

POWERING YOUR GREATNESS

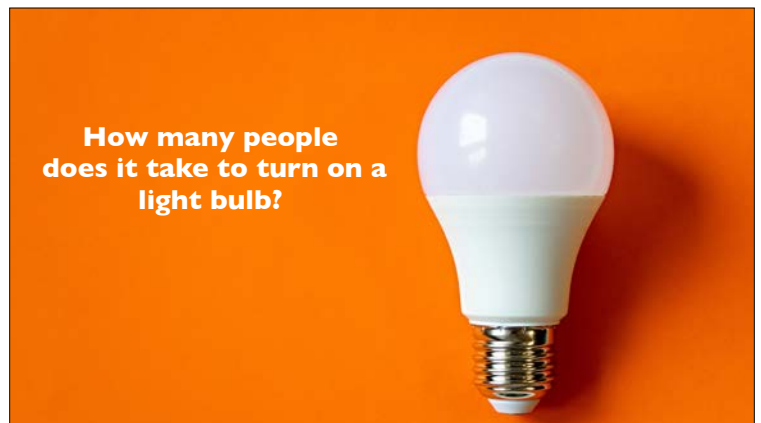
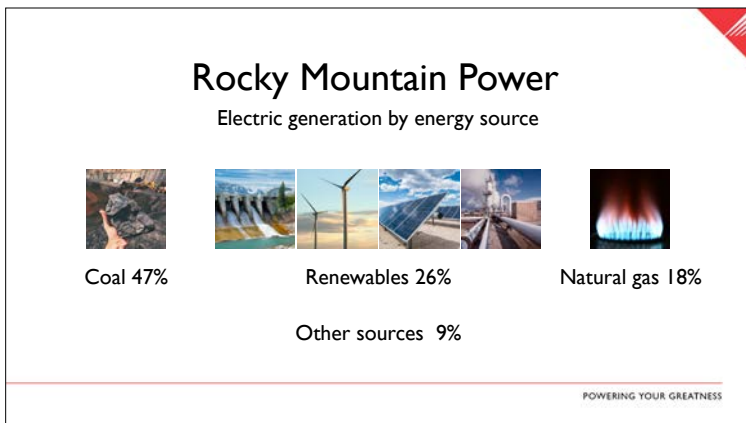
POWERING YOUR GREATNESS

It's time to play LINGO!

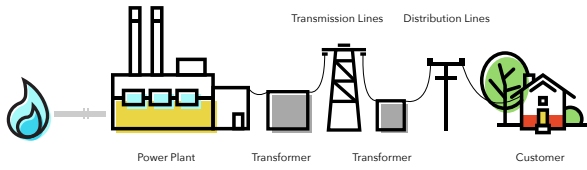
energy

The blue flame of
 natural gas
 is a nonrenewable
 resource.

Anything we use
 that comes from
 the earth or the
 sun is a
 natural resource.

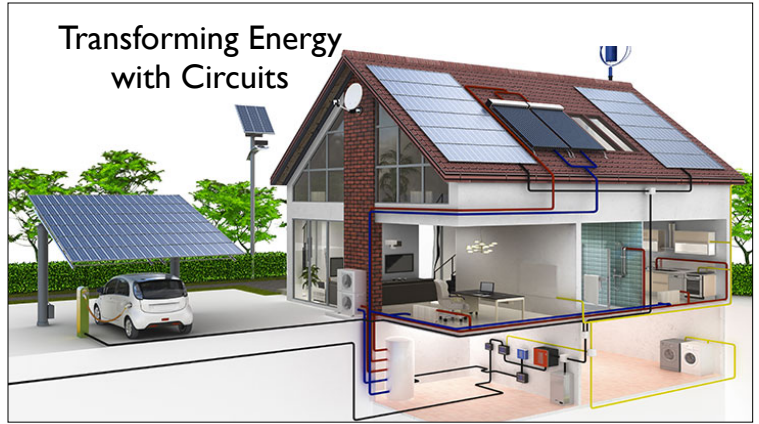


Electric Generation



POWERING YOUR GREATNESS

Transforming Energy with Circuits



What do we need?

An energy source

example: battery or wall outlet

A conductor to carry electrical energy

example: wire

A load to use the energy

example: light bulb

Open and Closed Circuits

Transforming Energy



Conductors

allow electricity to flow through them.

Insulators

resist the flow of electricity.

POWERING YOUR GREATNESS

Safety Quiet Quiz







It's time to
play LINGO!

 **Renewable**
R...
naturally replaced.

 **Nonrenewable**
N...
or not at all.

 **water**
Keep all electrical appliances in
your bathroom away from
water.
Remember you are a
conductor.

 **oil**
... source used to produce
... e. O...

Energy Efficiency

Using less energy to accomplish the same amount of work



Technology



Behaviors

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Caitlynn Power

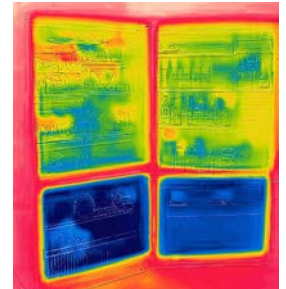
POWERING YOUR GREATNESS



Caitlynn Power

POWERING YOUR GREATNESS

Home Efficiencies



What can you do to be Wattsmart?

Be the energy expert in your home.

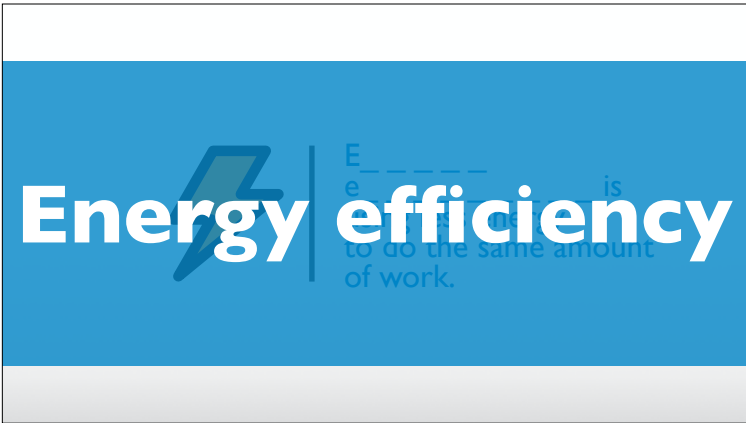
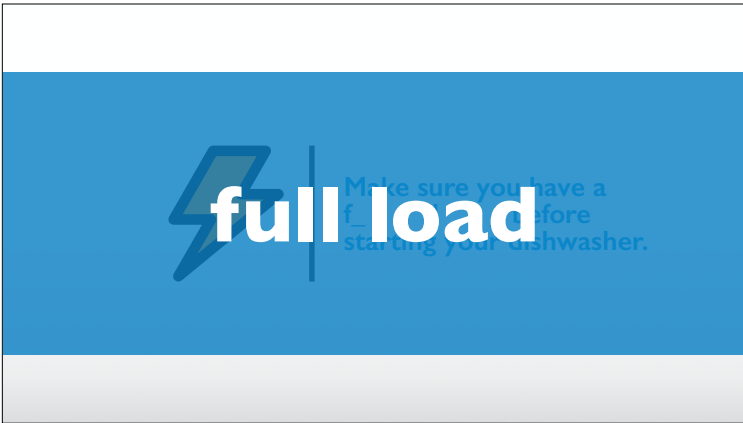
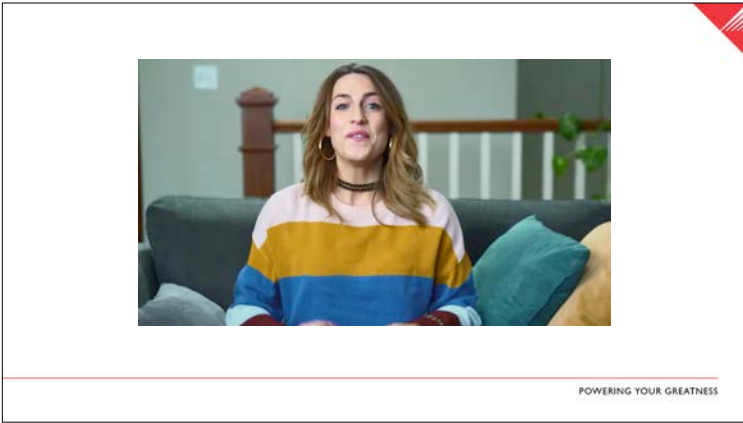


POWERING YOUR GREATNESS



Caitlynn Power

POWERING YOUR GREATNESS





LED

A light that can last 25 times longer than an incandescent. L _ _ _



Phantom Load

Electricity consumed by an electronic device even when it is turned off in standby mode. P _ _ _ _ _ L _ _ _ _

What have we done today?



- **Learned** why energy is important
- **Discussed** energy and where it comes from

POWERING YOUR GREATNESS

Engage in energy efficiency.

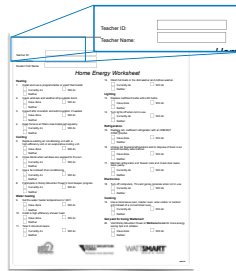
Review your **Be Wattsmart, Begin at home** booklet with your family.



POWERING YOUR GREATNESS

Complete the

Home
Energy
Worksheet



POWERING YOUR GREATNESS

Online Worksheet *ThinkEnergy.org/Wattsmart/*

Find Your Teacher ID

1 Find Your School 2 Find Your Teacher 3 Submit Your Form

Enter the keyword of your school's name. Example - Kennedy for John F Kennedy

School Name

Search for School

Don't know your Teacher ID? No problem. Use this tool to find your teacher ID

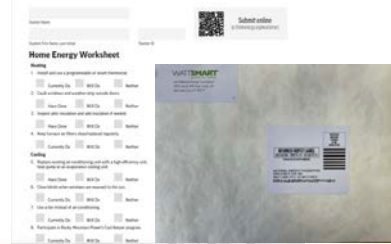


POWERING YOUR GREATNESS

Receive your very own Rocky Mountain Power LED nightlight.



POWERING YOUR GREATNESS



POWERING YOUR GREATNESS



YOU have
the *power* to
be Wattsmart!

© 2022 National Energy Foundation
POWERING YOUR GREATNESS

Implementation Steps for Presenter Option

1

Verify you have received:

- *Teacher Materials Folder* (notice your teacher ID in upper left corner)
- Your **Be Wattsmart, Begin at home** *Teacher Guide*
- *Home Energy Worksheets* (HEWs) for you and your students
- **Be Wattsmart, Begin at home** family booklets
- Set of *Family Letters*
- Wattsmart nightlights (student incentive for completing the HEW)

2

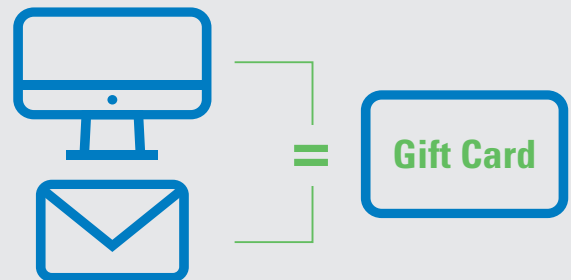
After the presentation, distribute to each student a:

- **Be Wattsmart, Begin at home** family booklet
- HEW (Write your teacher ID on each worksheet before you send home.)
- *Family Letter*

Final steps:

3

- Reward students with a Wattsmart nightlight when they complete their worksheet on paper or online at thinkenergy.org/Wattsmart.
- HEWs submitted online can be verified through the teacher portal (pas.nefl.org/teacher-portal) with your teacher ID.
- Have each student sign the *Thank You Card* to Rocky Mountain Power.
- Mail all completed paper HEWs (not submitted online) and the *Thank You Card* in the postage paid envelope (found in your materials folder) by December 2, 2022.



Attention Teachers

Return your student *Home Energy Worksheets* (HEWs) and receive a **\$25 – \$50** Amazon eGift Card for classroom use, depending upon participation. Students may submit worksheets online or return the completed survey to you. See the *Implementation Steps* for additional HEW online information.

80% or greater return of registered students' HEWs = \$50

50% – 79% return of registered students' HEWs = \$25

Postmark due date:

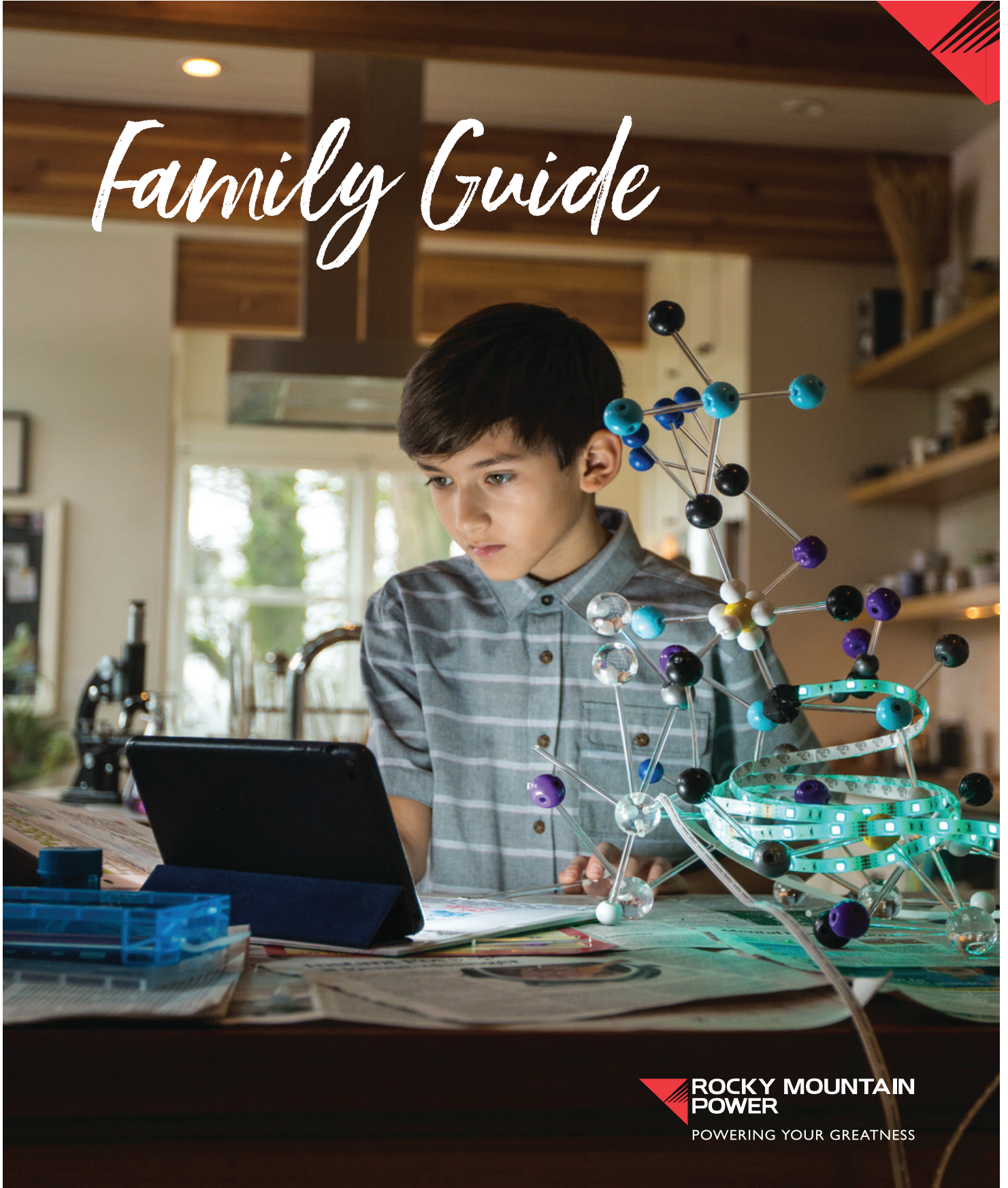
December 2, 2022

Offer open only to teachers participating in Be Wattsmart, Begin at home. Certain restrictions may apply. Good while grant funding is in place. *Home Energy Worksheets* must be completed for eligibility. For more information, contact your Educational Service Representative.

Sarah Richards at sarah@nef1.org



Family Guide



Dear Family,

The **Be Wattsmart, Begin at home** program assists teachers and families to learn about energy, discuss important energy topics and engage in energy efficiency actions now. Your child has participated in a presentation addressing natural resources, energy basics and energy efficiency. Your participation in this program will help you be Wattsmart, enhance energy efficiency in your home and help save money on your utility bills. Here are three simple ways that you can help:

- Review this **Be Wattsmart, Begin at home** booklet with your child.
- Assist your child with completing the activities on page 7.
- Have your child complete the **Home Energy Worksheet** (HEW) online at thinkenergy.org/Wattsmart or return it to your child's teacher.



Thank you for being Wattsmart and for your participation!

What's inside?

This booklet is divided into three sections that will give you the power to:

1. **Learn** about sources of energy, how they get to your home and why they are important in your life.
2. **Discuss** Wattsmart energy efficiency tips that will help you use energy wisely and save money.
3. **Engage in energy efficiency** by determining how energy can be saved in your home through a simple audit activity and the HEW.

About Rocky Mountain Power

Rocky Mountain Power is committed to the delivery of reliable electric service that's safe, low-cost and increasingly from clean, renewable resources. Serving more than 1 million customers in Utah, Idaho and Wyoming, the company is one of the lowest cost energy producers in the nation. Rocky Mountain Power is moving toward a sustainable energy future that includes increased use of solar, wind and other renewable resources; and provides customers with more choices to meet their energy needs.

About the National Energy Foundation

The National Energy Foundation (NEF) has empowered millions of students and families to make energy wise choices for over four decades through its nonprofit mission to cultivate and promote an energy literate society. A community of volunteer classroom teachers and staff educators brings unique educational integrity to NEF's K - 12 energy education programs, with many programs resulting in national recognition like the award winning energy efficiency program, Think! Energy. Energy utilities and organizations partner with NEF to address critical topics such as efficiency, safety and electric transportation. NEF recognizes the importance of education in making informed energy decisions.

I have the *power* to be Wattsmart.

- Being Wattsmart is all about taking steps to save energy, which in turn can help you save money.
- You have the power to become more energy efficient. Rocky Mountain Power can help with Wattsmart programs and incentives for homes and businesses. Saving energy also saves money and is good for the environment.



I have the power to learn.

The importance of energy:

Energy is the ability to do work or produce change. Virtually everything we do or use at work and home uses energy.

- Heating and cooling systems
- Computers
- Electronic equipment such as gaming and entertainment systems and TVs
- Charging electronic tablets, music players and cell phones
- Appliances
- Lights
- Food storage and preparation
- Security systems



Where does energy come from?

Our energy comes from natural resources. There are two general categories of natural resources: nonrenewable and renewable. A nonrenewable resource is not capable of being renewed, replaced or takes a very long time to replace. A renewable resource is capable of being renewed or replaced.

Primary natural resources are used to convert energy into electricity. They can be either nonrenewable or renewable.

Nonrenewable examples are:



Coal is the most abundant nonrenewable energy source in the world. The United States has more coal reserves than any other country in the world, but the reserves are shrinking.



Oil can be both refined and unrefined. Refined oil is transformed into petroleum products and unrefined oil remains as crude oil.



Natural Gas is usually captured alongside oil deposits and is a major source for electrical generation.



Uranium is the fuel most widely used by nuclear plants. Nuclear energy is the energy inside the nucleus (core) of the atom of uranium.

Renewable examples are:



Solar is energy from the sun.



Wind is energy from the wind captured by a group of wind turbines (generators).



Geothermal is energy derived from the heat of the earth.



Hydropower is energy from water that generates electricity.

Secondary energy resources are created by using nonrenewable and renewable resources of energy.



Electricity is the most abundant **secondary energy resource** used. It is the flow of electrical power or charge. It occurs in nature as lightning and static electricity. A generator uses energy resources to create mechanical energy that is then converted into electrical energy.

Energy efficiency

Energy efficiency is using less energy to accomplish the same amount of work. We call it being Wattsmart. There are many technologies we can use today that decrease the amount of energy needed to do work. Good examples are ENERGY STAR® products and LED lighting.

You can save even more money if you start thinking about using energy wisely. Try turning off the lights when you leave the room, take shorter showers or turn off your electronics when you are not using them.

Using electricity



For more than 100 years, electricity has made our homes more comfortable and industries more productive. Today electricity is powering a world of electronics.

How is electricity generated? It begins with a fuel that heats water and turns it to steam. The steam drives the turbine that turns the generator motor to produce electricity.

How is electricity transmitted? Once the electricity is produced, the current flows from the generator to the power plant transformer where the voltage is increased to boost the flow of the electric current through the transmission lines. The transmission lines transport the electricity to Rocky Mountain Power's substations where the voltage is decreased. Power lines then carry the electricity from the substations to be used in our homes and businesses.

ELECTRICAL GENERATION		
Energy Source	Rocky Mountain Power (2021 Basic Fuel Mix)*	United States (U.S. EPA, 2021 data)
Natural Gas	18.4%	38%
Coal	46.8%	22%
Nuclear	0.00%	19%
Petroleum	0.00%	.5%
Other/misc.	9.2%	.3%
Renewables (total)	25.6%	20%
Hydropower	3.9%	6.3%
Wind	15.2%	9.2%
Biomass	0.4%	1.3%
Solar	5.8%	2.8%
Geothermal	0.3%	.4%

*This information is based on Federal Energy Regulatory Commission Form 1 data. Rocky Mountain Power's "basic fuel mix" includes owned resources and purchases from third parties. It is based on energy production and not resource capability, capacity or delivered energy. All or some of the renewable energy attributes associated with wind, solar, biomass, geothermal and hydro facilities in the fuel mix may be: (a) used to comply with renewable portfolio standards or other regulatory requirements, (b) sold to third parties in the form of renewable energy credits and/or other environmental commodities or (c) not acquired. The 2020 fuel mix includes energy production associated with 157 megawatts of solar resources acquired through customer partnerships supported by a customer's purchase of 100% of renewable energy attributes generated by those solar resources.

I have the power to *discuss* energy use to help save money and improve the environment.

Saving energy happens in two ways. First, you can use less energy through wise behaviors that conserve energy. Second, you can install energy-efficient products and appliances that use less energy to accomplish the same task. Let's talk about the following areas of your home that have the largest potential to save energy.

Home heating and cooling

- Install a programmable thermostat or smart thermostat. Set your thermostat to 78 F or higher in the summer and 68 F or lower in the winter.
- Make sure your house is properly insulated. If you have less than 6 inches of insulation in your attic, you would benefit from adding more.
- You can save 10% or more on your energy bill by reducing the air leaks in your home with caulking and weather-stripping.
- To help your furnace run more efficiently and cost-effectively, keep your air filters clean.
- For windows with direct sunlight, close your blinds in the summer to keep the heat out. Open them on winter days to let the warmth in.
- Small room fans are an energy-efficient alternative to air-conditioning.
- For information about energy saving programs and cash incentives, visit Wattsmart.com.



Water and water heating



- Check your faucets for leaks that can cost you hundreds of dollars each year.
- Install a water-efficient shower head and save money on your utility bills and more than 2,300 gallons of water per year.
- Set the water heater at 120 F.
- Install faucet aerators to decrease water use.

Lighting

- Let the sun shine in. Use daylight and turn off lights.
- Replace your incandescent bulbs with LEDs (light-emitting diodes) and save about \$225 in energy costs each year. These bulbs use up to 90% less energy than incandescent bulbs and last much longer.
- Use lighting controls such as motion detectors and timers.
- Turn off lights when you leave the room.
- Always use the lowest wattage bulb that still gives you the light you need.
- Keep your light bulbs clean. It increases the amount of light from the bulb and reduces the need to turn on more lights.



Electronics

- Turn off your computer and game consoles when not in use.
- Home electronics are made to turn on and off many times. Always turn them off to save energy.
- Electronics with the ENERGY STAR® label use as much as 50% less energy while providing the same performance.
- Beware of phantom loads which continue to draw electricity when they are plugged in but not in use. Examples are phone chargers, electronic games and cable boxes.
- Use advanced power strips for household electronics. One button will turn off multiple appliances, which conserves electricity.



Refrigerators and freezers



- When looking to replace your old refrigerator, do so with an ENERGY STAR® model, which requires approximately 9% less energy than conventional models and provides energy savings without sacrificing the features you want.
- Clean door gaskets with warm water or a detergent that leaves no residue.

Dishwashers

- Only run dishwashers when full and use the air-dry or no heat-dry settings.
- ENERGY STAR® dishwashers use less energy than the federal minimum standard for energy consumption.
- Try running your dishwasher before 3 p.m. or after 8 p.m. to avoid peak demand.

Laundry

- Buy a moisture sensitive dryer that automatically shuts off when clothes are dry.
- Use a drying rack whenever possible.
- To avoid peak demand, wash and dry clothing before 3 p.m. or after 8 p.m. when possible.

Cooking

- Use a microwave oven, toaster oven or slow cooker instead of a conventional oven.
- Use the right size pan for the stove top element.
- Cover pans with lids to keep heat from escaping.

Reduce

- Use less.
- Purchase products with little packaging.

Reuse

- Use something again.
- Reuse a box or a grocery bag.

Recycle

- Make something into another new item.
- Participate in the recycling programs in your community.



I have the power to *engage* in energy efficiency.

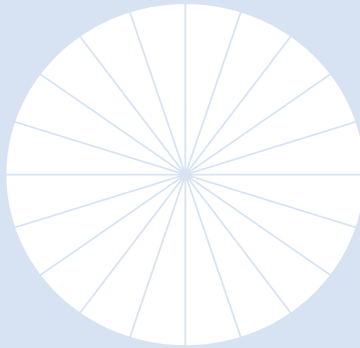
Parents, be Wattsmart and watch the energy savings add up.

An individual with a combined electric and heating fuel bill of \$2,500 per year could save 20% or \$42/month by using these and other energy efficiency tips. That is like getting a pay raise without having to work harder or longer.

Your Home's Electricity Use

Most families in the U.S. use about 54% of their electricity for lighting and to power appliances and electronics, 32% to heat and cool their homes and 14% of their energy to heat water:

Choose three colors and create a pie chart with the percentages above. You may need to round each number: Each segment on the chart shows 5%.

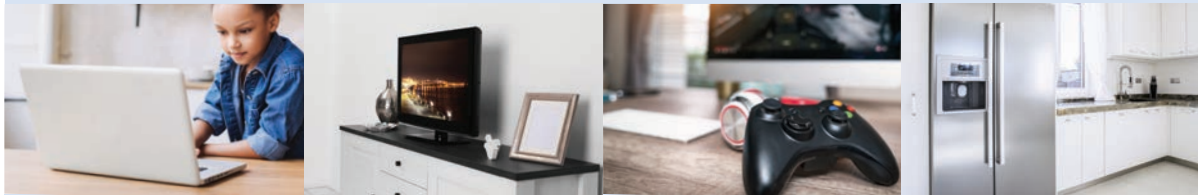


Lighting, Appliances and Electronics

Heating Water

Heating and Cooling

(Source: eia.gov/todayinenergy/detail.php?id=36412, accessed April 2022)



Your Home's Electricity Use

Let's go on an energy scavenger hunt! Search for each item in your home.

I FOUND IT HERE.

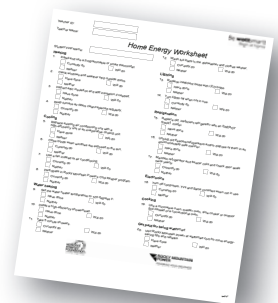
 Ceiling Fan	 Water-efficient Shower Head
 Door Sweep Under Exterior Doors	 Caulk, Foam Spray or Weather-stripping
	 Dishes or Clothes Air-drying

I have the *power* to be Wattsmart.

Together with your parent(s)/guardian(s), complete the separate HEW. Return the completed worksheet to your teacher or submit it online at thinkenergy.org/Wattsmart to receive your Wattsmart nightlight. You may find you are already practicing ways to be energy efficient but there is always room to do more.

Challenge yourself and your family to commit to practice energy efficiency by making wise energy choices and being Wattsmart. You will not only help extend the life of our natural resources, but save money too!

For other energy saving ideas and incentives, visit Wattsmart.com. Congratulations to you and your family for making a difference.



WATTSMART®

BEGIN AT HOME



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WATTSMART[®]
BEGIN AT HOME

Teacher Guide

**ROCKY MOUNTAIN
POWER**
POWERING YOUR GREATNESS

Welcome to Be Wattsmart, Begin at home

This program teaches the importance of energy and assists students and their families in saving energy in their homes. For teachers, Be Wattsmart, Begin at home reinforces important electrical concepts from your curriculum.

This *Teacher Guide* was designed to supplement program instruction. A variety of tools have been provided to allow you to format Be Wattsmart, Begin at home to meet your instructional needs. These tools include:

- General guidelines and activity suggestions
- Classroom activities to further the impact of lessons
- Additional fun and interesting activities for students
- Activities containing state correlated curriculum for your classroom.

About Rocky Mountain Power

Rocky Mountain Power is committed to the delivery of reliable electric service that is safe, low-cost and increasingly from clean, renewable resources. Serving more than 1 million customers in Utah, Idaho and Wyoming, the company is one of the lowest cost energy producers in the nation.

About the National Energy Foundation

The National Energy Foundation (NEF) has empowered millions of students and families to make energy wise choices for over four decades through its nonprofit mission to cultivate and promote an energy literate society. A community of volunteer classroom teachers and staff educators brings unique educational integrity to NEF's K - 12 energy education programs, with many programs resulting in national recognition like the award winning energy efficiency program, Think! Energy. Energy utilities and organizations partner with NEF to address critical topics such as efficiency, safety and electric transportation. NEF recognizes the importance of education in making informed energy decisions.

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Table of Contents

STEM Connections	1
Activity: Pass the Sack	2
Activity: Get a Clue!	4
Activity: Get Your Motor Running	7
Student Sheet: Get Your Motor Running	9
Activity: The Art of Circuits	11
Activity: Where Do Fossil Fuels Come From?	13
Activity: Layered Lunch	15
Activity: How Do You Rate?	17
Student Sheet: How Do You Rate?	19
Activity: Energy in Math	21
Activity: Go Against the Flow	23

STEM Connections	Science				Technology				Engineering				Math				
	Science as Inquiry	Energy Sources, Forms and Transformations	Science and Technology	Personal and Social Perspectives	Productivity Tools	Communication Tools	Research Tools	Problem-solving and Decision-making Tools	Historical Perspective	Design and Modeling	Invention and Innovation	Test Design and Troubleshooting	Use and Maintain	Numbers and Operations	Measurement	Data Analysis and Probability	Connection to the Real World
Activity																	
Pass the Sack		•		•													
Get a Clue!		•		•			•						•		•	•	
Get Your Motor Running	•	•	•	•	•	•	•	•	•	•	•	•	•				
The Art of Circuits	•	•	•				•		•	•	•						•
Where Do Fossil Fuels Come From	•	•	•	•													
Layered Lunch	•		•							•							
How Do You Rate?	•	•		•		•	•				•	•		•		•	•
Energy in Math													•	•	•	•	•
Go Against the Flow	•	•	•	•	•	•	•	•					•	•	•	•	•

Activity: Pass the Sack

Objective

Students will demonstrate the difference between renewable and nonrenewable resources and the need for conservation of resources.

Curriculum Focus

Science
Social Studies

Materials

- Two different kinds of candy or other objects students find desirable
- Sack to hold candy, such as a gallon size plastic bag

Key Vocabulary

Nonrenewable resource
Renewable resource

Next Generation Science Correlations

4-ETS1 – 2
4-ESS3 – 1-2
4-ESS3.A
5-ETS1 – 2
5-ETS1 – 1
5-ESS3 – 1
MS-ESS3 – 4
MS-ESS3.A



Introduction

Statistical research confirms world consumption of natural resources is increasing every year. Continued population growth ensures that demand will continue to increase for renewable and nonrenewable energy resources necessary to maintain our way of life. This creates problems for future availability of nonrenewable resources. Nonrenewable resources are just that, resources that cannot be renewed. For example, a resource used at our present rate might last about 100 years. Factor in population growth and increasing reliance on technology, and that resource may last only 79 years.

In this activity, two different types of candy (or other objects students would like) will represent resources. One type of candy will represent renewable resources and the other will represent nonrenewable resources.



Procedure

1. Before class, count out enough candy so there is one piece per student (some of each type of candy, with less of one so it will run out faster). Put it in the sack or bag. Save the remaining candy. If you have a very polite class, count enough candy for half of the class. **You want the contents to run out before everyone gets candy!**
2. Tell students you will demonstrate how resources get used over time by playing “Pass the Sack.” Show students the sack and explain that when they get the sack, they should take some energy and pass the sack to the person next to them.
3. Before passing the sack to the first student, review renewable and nonrenewable resources. Have students give examples of each as you hand the sack to a student.
4. While this discussion is taking place, allow students to pass around the bag of candy without any rules about how many pieces students may take. Occasionally, add four or five pieces of **one** type of candy you are using. This will be your renewable resource. The sack will be empty before it reaches all the students.
5. Ask students who did not get any candy how they might obtain energy from other students. What if each student represented a country? How do countries obtain resources? Do they trade, barter (trade for goods), buy (trade for currency), invade and take or go to war? What effect did the availability of candy have on relationships between students? What effect might the availability of natural resources have on the relationship among nations, provinces, states, people, standards of living and quality of life?

6. Explain how our resources are like the candy. Which type was the nonrenewable? How could you tell? (No more was added to the bag once it was being passed around.) Which type was renewable? How could you tell? (It was added periodically to renew it.)
7. Point out that resources have limits just like the candy. Emphasize that many resources, such as fossil fuels, are nonrenewable and are being consumed faster than they are being replaced by nature. Discuss the fact that it would be more difficult for students to eat the candy if they had to search the room to find it instead of just taking it from the sack. Energy companies must seek resource deposits and obtain rights to drill or mine for them; they do not just magically appear.
8. Point out that renewable resources also have limitations. They may not generate electricity as reliably as nonrenewable sources. The amount of energy produced may vary with weather and location.
9. Plan how to pass out the remaining candy.



Discussion

- Should rules be established to determine how the candy is distributed?
- Do oil, coal and natural gas companies have rules/regulations that must be followed to find resources?
- Should there be rules and regulations on how much oil, coal and natural gas people use?
- How do the class' social decisions influence the availability of candy?



To Know and Do More

Go to [eia.gov/kids](https://www.eia.gov/kids) to access games, tips and facts for kids to learn about renewable energy and energy efficiency.

Discuss whether or not it is possible to run out of a renewable resource. Wood and fresh water are examples of renewable resources that can be used faster than nature can replace them.

Activity: Get a Clue!

<p>Objective Students will identify and use vocabulary words related to the topic of energy sources in a game situation.</p> <p>Curriculum Focus Science Social Studies Language Arts</p>	<p>Materials</p> <ul style="list-style-type: none"> • Index cards for energy source word clues • Markers 	<p>Key Vocabulary</p> <p>biomass, coal, energy, fossil fuels, garbage, geothermal, hydroelectric, methane, natural gas, nonrenewable energy, nuclear energy, ocean tides, ocean waves, oil, oil shale, petroleum, plants, renewable energy, solar (sun), steam, uranium, water, wind, wood</p>	<p>Next Generation Science Correlations</p> <p>4-ESS3 – 1 MS-PS1 – 2 MS-ESS3.A</p>
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Introduction

Energy is essential in our daily lives. We depend on energy for our heat, air-conditioning, lights, clothing, food, transportation and communication. Where does this seemingly endless supply of energy come from?

There are many sources from which we get our energy. Some are endless or renewable, such as energy we get from the sun, wind and water. Other sources are limited or nonrenewable, such as fossil fuels like coal, oil and natural gas. Some sources are only available in certain areas such as geothermal features or uranium. Some sources are readily available but difficult to harness, such as ocean tides. Others are expensive to extract or might present environmental concerns.

Scientists are constantly searching for sources of energy and more efficient ways to use them. Many sources of energy have been used for hundreds, even thousands of years. Sources such as coal and natural gas can be burned to produce energy. Wind can be harnessed as well as the sun's power (solar energy). In the late 1800s it was discovered that these sources could be used to generate electricity and distribute it as needed. In the middle 1900s fuel cells and photovoltaic cells were discovered. These are just a few of the sources and their uses we take advantage of each day.



Procedure

1. The success of this activity depends upon adequate student preparation. Class time should be spent learning to spell and define the following energy source words:

geothermal	coal	nuclear energy	natural gas
oil	solar	wind	wood
fossil fuels	gasoline	ocean waves	biomass
oil shale	methane	uranium	battery
steam	hydroelectric	petroleum	garbage
ocean tides	plants		

2. Divide the class into two groups of approximately equal ability. Choose one student from each team to give clues and have them sit at the front of the room. Each clue giver will be giving clues to their team.
3. You may want to use the list of suggested words included or add your own choices.
4. How the game is played:
 - a. Each of the clue givers is shown an energy source word.
 - b. The clue givers then give clues alternately to their teams as to the identity of the energy source word. Some teachers allow only one word clue to be given, or you may prefer to allow more clues within a certain time period, such as 15 seconds. (Have one student be the timekeeper.)
 - c. After giving a clue, the clue giver chooses someone on their team to guess the energy source word. If that team member guesses the correct word, their team scores (see step f) and a new round begins using a new energy source word. Alternately, team members guess the word by order of seating rather than being chosen by the clue giver to guess the word.
 - d. If the team member guesses incorrectly, the turn goes to the other team's clue giver who gives a new clue for the same energy source word to a member from their team.
 - e. After the word has been guessed correctly by one team or the other, the new word goes first to the clue giver who did not start the previous round.
 - f. Scoring is as follows:
 - 10 points for the team guessing the word correctly on the first clue
 - 9 points if the correct word is guessed on the second clue
 - 8 points if the team guesses the energy source word after hearing the third clue, etc
 - g. New clue givers should be chosen from each team after every three or four rounds have been played.



Discussion

Have students categorize the energy source words as either renewable or nonrenewable. A sample chart is provided below. Use the words and definitions learned to create an energy crossword puzzle. Puzzle creation software is readily available on the internet.

Renewable	Nonrenewable
geothermal	oil, petroleum
ocean tides, waves	nuclear energy, uranium
hydroelectric	coal
biomass, plants, wood	natural gas
solar	methane
garbage	gasoline
wind	battery



To Know and Do More

Write the energy source words on index cards. (Duplicate the cards, if necessary, to have one for each student.) Tape one card on the back of each student; they should not know what their own card says. Allow students to ask each other yes or no questions to try to identify their energy source. Once they have identified their own energy source, they still continue answering others' questions. As students identify their energy sources, they may remove the card from their back and place it on their chest. Have students research the energy sources used to generate electricity in your area. Sources of information include your local utility provider and government agencies such as the United States Energy Information Administration (eia.gov). Discuss the reasons behind the energy sources used in your area, such as costs of transporting fuels, availability of sunlight or wind, etc.



Career Awareness Activity

Using the following careers or others you might think of, have students match them with the correct source of energy. Some careers will match with more than one energy source.

- | | |
|---|-----------------------------------|
| Meteorologist (wind) | Tank truck driver (gasoline, oil) |
| Reactor operator (nuclear) | Welder (all sources) |
| Hydrologist (geothermal) | Pipe fitter (all sources) |
| Electrician (all sources) | Plumber (all sources) |
| Geologist (geothermal, hydroelectric, coal, oil, natural gas) | Accountant (all sources) |
| Physicist (nuclear) | President and CEO (all sources) |
| | Engineer (all sources) |

Choose some energy related careers and use them as tiebreakers or bonus rounds in your energy source word game.

Activity: Get Your Motor Running

Objective

Students will experience energy transformations as they build a DC motor.

Curriculum Focus

Science
Technology

Materials

- C or D dry cell batteries
- Ceramic magnets
- Large paper clips
- Enamel coated wire of varying thicknesses
- Sandpaper
- Tape or rubber bands (optional)
- Copies of "Student Sheet: Get Your Motor Running"

Key Vocabulary

Alternating current (AC)
Direct current (DC)
Electrical circuit
Electromagnet
Motor
Resistance

Next Generation Science Correlations

4-ETS1 – 1-2
4-PS3 – 2-4
MS-PS1 – 6
MS-PS2 – 3, 5
MS-PS3 – 1-5

Recommendation

This is a STEM rich activity requiring substantial time, supplies and student skill in problem solving. If resources are limited, the activity may be used as a teacher demonstration or as group work rather than an individual assignment.



Introduction

In this activity, students investigate multiple energy transformations while constructing a simple DC motor. The most difficult part of this activity is building a properly shaped coil. You may wish to build the coils for students in advance, then keep them for future use.



Procedure

1. Explain to students that a motor is a device that transforms electrical energy into mechanical energy. Motors are used in many household appliances such as hair dryers, vacuum cleaners and blenders.
2. Place students in pairs or small groups and provide them with their materials. Each group will need approximately 22 inches of wire, one battery, two paper clips and magnets. The number of magnets needed will vary with the strength of the magnet and the age of the batteries. Two small ceramic magnets are usually sufficient. To save time, you may want to make a class set of coils in advance so students just have to place the coil into the paper clips.
3. Pass out "Student Sheet: Get Your Motor Running" and allow students to work through the motor design and answer the questions. Students will have to be persistent to get the coil to turn. Stress the importance of the coil being straight and level to get the motor to work properly.
4. As a class, discuss the importance of each piece of the motor and trace the energy conversions needed to make the motor work using batteries (chemical to electrical to mechanical, sound and thermal). Note that the coil will show a preference to spin in one direction.
5. If time permits, allow students to investigate on their own, the effect of different variables on the motor such as the gauge (thickness) of wire used, number of magnets, number of windings in the coil, type of battery used, etc. As a class, determine which variables affected motor

performance and why that may be. For example, what are the advantages and disadvantages of using a heavier gauge of wire? What is the best balance between weight and electrical resistance? How do you keep the motor cost-effective? Students should formulate a question,

make a hypothesis and design an experiment to test that hypothesis.

6. Have students share their observations and conclusions on the variables which affect motor performance.



To Know and Do More

1. Allow students to view motors taken from household appliances and compare them to the motors they built. How do DC and AC motors differ?
2. In addition to demonstrating energy transformations, this activity can be used to show an electrical circuit, assist in a discussion about DC versus AC circuits, show an application of an electromagnet (the coil of wire) and let students experience heating due to resistance of a wire!

Answers to Questions on “Student Sheet: Get Your Motor Running”

1. The coil should wobble and eventually spin if it has been balanced correctly.
2. The battery contains chemical potential energy, which is converted to electrical kinetic energy in the paper clips and coil. The electricity is then converted to mechanical kinetic energy in the movement of the coil, thermal kinetic energy (heat) due to resistance in the wire and a bit of sound energy. You may want to point out that heat and sound are not usable forms of energy, so the energy transfer is not 100% efficient.
3. It will spin in only one direction (direct current).
4. Variables include the number of turns on the coil, thickness of the wire, strength of the permanent magnets and voltage of the battery.
5. By increasing any of the above factors, you increase the speed of the motor: New batteries work better than old ones, but they lead to much more thermal energy.

Student Sheet: Get Your Motor Running

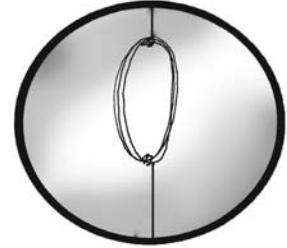
This activity lets you create your own DC motor and see many energy transformations firsthand.

Materials

C or D dry cell battery, two large paper clips, ceramic magnet, fine sandpaper, enamel coated wire, wire cutters or scissors, rubber band or tape (optional)

Procedure

1. Cut about 22 inches of wire and wrap it around the battery five times (be sure to leave wire sticking out on both ends).
2. Trim the ends of the wire so that they are about an inch long and stick out from opposite sides of the coil as shown to the right.
3. Remove the coil from the battery and wrap the ends around the coil two or three times to help hold the shape. It is very important that the ends are directly opposite each other as in the diagram.
4. Using sandpaper, remove the insulation coating from the ends of the wire from coil to tips. The wire should now be shiny. Be sure the ends are straight as shown in the top picture. Crooked coils will not work!
5. Bend the paper clips into an L shape (be sure to bend it in the direction that forms a loop in the clip) and place the longer end of the clips on the ends of the battery, sticking
6. Place the magnet on the battery as shown in the picture at right and put the ends of the coil through the ring formed by the paper clips. **Do not** bend the coil when inserting it. Be sure the coil is level on both sides and can spin without hitting the magnet.



Questions

1. What happens to the coil when the magnet is added to the battery?
2. What energy transformations do you see and feel? Write the types and forms of energy beginning with the battery and ending with the coil.
3. Will the coil spin in either direction or just one?

Activity: The Art of Circuits

Objective

Students will learn about conservation of energy and energy transfer by experimenting with electrical circuits.

Curriculum Focus

Science
Social Studies
Language Arts
Art

Materials

- Playdough[®] or homemade salt dough
- 9V batteries
- 9V battery clips with red and black cables
- 2V LED miniature light bulbs
- Insulating material: cardboard, packaging plastic or dough made from sugar, not salt (optional)

Key Vocabulary

Energy transfer
Electric current
LED (light-emitting diode)
Electric circuit
Insulator
Conductor

Next Generation Science Correlations

4-PS3 - 2
4-PS3 - 4
4-PS3.A-B, D
4-ETS1 - 1
4-ETS1.A
5-ETS1 - 1
5-ETS1.A
MS-PS3 - 3
MS-PS3.A-B
MS-ETS1 - 1
MS-ETS1.A



Introduction

Materials that allow a flow of electric current to pass through them more easily are called conductors. Aluminum, silver, copper and water are examples. Insulators block the flow of electricity. Nonmetallic materials, such as rubber, plastic, wood, cloth and dry air are insulators. An electrical circuit is a path of conductors through which electric current flows. Energy can be transferred from place to place by electric current.

In this activity, students will use salt dough, which is a conductor, to design circuits which will transfer electrical energy. If they are successful, the electricity will be transformed to light and heat energy in a miniature LED bulb.



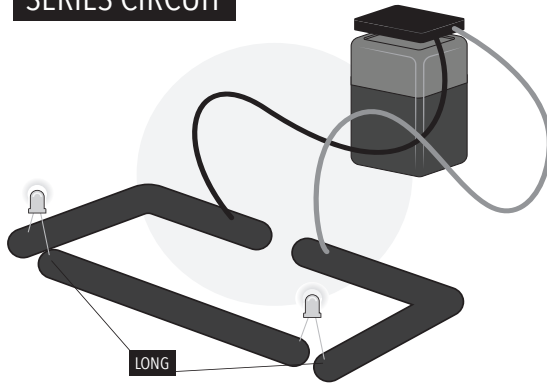
Procedure

1. Introduce students to their materials:
 - a. Attach the battery to a battery clip with red and black cables. The red lead is the positive terminal and the black lead is the negative terminal.
 - b. Examine the LED bulb. Two wires (or legs) extend from the bulb. The longer wire is the positive side of the LED and the short wire is the negative side. The LED should only be connected to dough, never directly to the battery terminals, which will cause the bulb to burn out.
2. Tell students that electricity can only go through the circuits they will create in one way. The positive terminal of the battery (red lead on battery clip) must be nearest a positive (long) leg of the LED. A battery pushes electricity around the circuit through the positive leg and out the negative (short) leg, then repeating through the next positive leg (if there is more than one LED in the circuit).

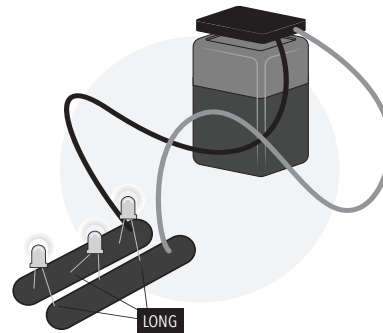
It is easier for electricity to travel through the dough than through the LED. If two pieces of dough are touching, the LED will not light.
3. Explain that electricity will take the path of least resistance.
4. Challenge students to design a simple circuit like the ones on the next page.

11

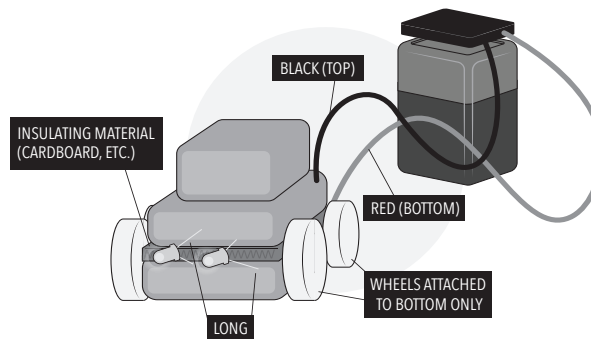
SERIES CIRCUIT



PARALLEL CIRCUIT



If time allows, have students create a circuit work of art like the one below. Since the conductive dough cannot touch, use insulating material between layers.



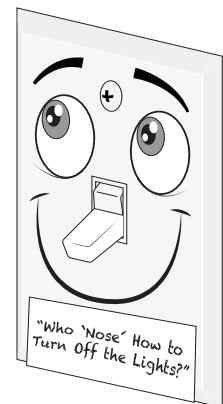
Discussion

- How does your dough circuit light the LED compared to the circuits at your home?
- In a series circuit with multiple LEDs, what happens to the brightness of the LEDs that are further from the battery? Why?



To Know and Do More

When a light switch is off, the electrical pathway to a bulb is not complete and electricity cannot flow to light that bulb. When you flip the switch on, you close the circuit and the light turns on. If light is not needed, it is important not to waste the natural resources used to generate the electrical power that is being transformed to light. Have students create characters without noses to put over light switches at school or home. The art should help remind them to turn lights off!



Activity: Where Do Fossil Fuels Come From?

Objective

Students will investigate and model the production of natural gas and oil from ancient life.

Curriculum Focus

Health and Wellness
Science
Social Studies

Materials (per student group)

- Container to represent the ocean, preferably clear
- Sand or dirt
- Baking soda "plankton"
- Vinegar (20%) and water (80%) "ocean" mixture
- Cup or scoop
- Safety goggles

Key Vocabulary

Physical properties
Odorant
Mercaptan
Combustible

Next Generation Science Correlations

4-ESS3 – 1
MS-ESS3.A



Introduction

Natural gas is a combustible, gaseous mixture of simple hydrocarbon compounds, usually found in deep underground reservoirs in porous rock. The prevailing scientific theory is that natural gas was formed millions of years ago when tiny sea plants and animals were buried by sand and rock. Layers of mud, sand, rock, plant and animal matter continued to build up until the pressure and heat from the overlying sediment turned them into a tar like substance called kerogen. As temperatures continued to increase and the kerogen continued to heat, more complex compounds of carbon and hydrogen we know as oil were formed. Natural gas is generated at the same time as oil and as it forms, the natural gas molecules migrate from the shale source rock into more porous areas such as sandstone. Natural gas continues to move to either the surface, where it escapes into the atmosphere, or it is trapped when its path is blocked by nonporous rock. In the latter case, the impermeable rock layers cause natural gas accumulation to occur.

NOTE: Do this activity as a demonstration or in small groups.



Procedure

1. Explain to students that you will be showing them a model of how oil and natural gas form in the ocean. A very similar process takes place on land with plants to form coal.
2. Have students use safety goggles to avoid splashing vinegar water in their eyes. It is harmless, but uncomfortable.
3. Have students sprinkle a small amount of sand to cover the bottom of the container. The ocean floor is covered with sediments and the sand represents these sediments.
4. Next, have students sprinkle baking soda over the sand, liberally covering the bottom of the container. This represents plankton (microscopic plant life and animal like creatures called protists) that have died and settled down to the bottom of the ocean.
5. Explain that over time, sediments build up on the ocean floor. Students should completely cover the "plankton" with sand. (You can gently push the sand down with your hands to simulate the pressure and weight of the overlying sediments on the plankton.)
6. The ocean has water in it, so pour some of the vinegar/water "ocean" mixture into the container. Bubbles and foam begin to appear. You can see the bubbles bursting and can hear the gas being released to the air. Point out that this is a sign of a chemical change.



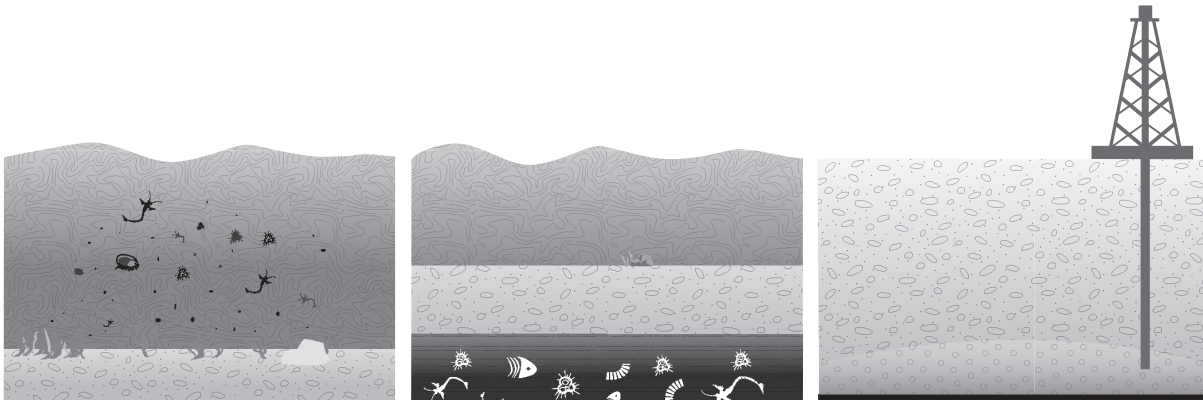
Discussion

- Discuss with students that natural gas in the ocean is produced much like in your demonstration, but that the process takes **many** years. In the ocean, plankton is buried under miles of sediment. The weight of this sediment causes high temperature and pressure which cooks the plankton deep underneath the ocean floor. The heat and pressure changes the plankton into oil and natural gas. Natural gas floats on top of the oil produced.
- Discuss how this model is different from real life. The gas produced in the experiment is carbon dioxide rather than natural gas, and since our container is open, the gas escapes into the air. In the ocean, there are usually impermeable layers that keep natural gas and oil trapped beneath the surface until we drill down and release it.



To Know and Do More

Go to eia.gov and research where we can find natural gas deposits. Are there natural gas deposits in your state? Find the natural gas pipelines that are located across the United States.



Activity: Layered Lunch

Objective	Materials	Key Vocabulary	Next Generation Science Correlations
<p>Students will understand that natural gas deposits are trapped and held by certain types of geologic formations.</p> <p>Curriculum Focus</p> <p>Science Art</p>	<ul style="list-style-type: none"> • Slices of bread • Almond butter or other thick spread (e.g. cream cheese) • Honey • Plastic wrap or wax paper • Plastic knife 	<p>Permeable Impermeable Source rock</p>	<p>4-ETS1 - 1 4-ETS1.A 5-ETS1 - 1 5-ETS1.A MS-LS4 - 1 MS-LS4.A MS-ESS1 - 4 MS-ESS1.C MS-ETS1 - 4 MS-ETS1.B</p>



Introduction

How do we find natural gas? Try this activity to get an idea of the type of rock formations and characteristics geologists look for when locating natural gas deposits.

As natural gas molecules form, they migrate from shale source rock into more porous areas such as sandstone. Porous or permeable layers are much like a sponge with little pockets throughout the rock. The natural gas continues to move to either the earth's surface (where it escapes into the atmosphere) or it is trapped when nonporous or impermeable rock layers block its path.



Procedure

Using bread, almond butter and honey, create some edible models of rock layers. (In place of almond butter you could use peanut butter, Nutella or even thick frosting depending on allergies within the classroom.)

1. Spread thick layers of almond butter then honey on a slice of bread. Top it with another slice of bread.
2. Make a second sandwich just like the first or gently cut the sandwich in half.
3. Put one sandwich (or one half) with the almond butter layer above the honey and the other sandwich (or other half) with the honey on top of the almond butter.
4. Next spread a thick layer of only honey on a slice of bread, adding another slice on top.
5. Cover your sandwiches with wax paper or plastic wrap and gently press down on them for about three seconds, representing millions of years of pressure.
6. Cut the sandwiches in half and observe what has happened.



Discussion

1. What do you think the honey represents?
2. Which layer do you think represents porous rock?
3. Which layer is the nonporous rock?
4. Did the honey seep into both slices of bread? Why or why not?
5. What do you predict would happen with a sandwich made with only almond butter?
6. How might the ingredients you used affect your results?
7. Draw the layers of your sandwich and use colored pencils or crayons to distinguish the different layers and write labels for each layer that includes: impermeable, permeable, natural gas, nonporous rock and porous rock.

Answers

The honey represented natural gas or a fossil fuel. The bread was the porous rock where the honey or natural gas gets into the little pockets or air spaces. Almond butter acted like a nonporous rock layer blocking the honey from seeping into the slice of bread above the almond butter. The results may be different depending on your ingredients: denser bread allows less seepage, creamier almond butter may be less impermeable or thicker honey may not fill the little pockets as easily.



To Know and Do More

Assign students to further investigate how natural gas is trapped in rock formations. Have them draw pictures of a formation and the trapping of oil and natural gas in the earth.

Visit a natural history museum and look for prehistoric life forms and rock formations.

Activity: How Do You Rate?

Objective

Students will conduct a home survey to determine how they can use energy more efficiently by changing their habits and improving conditions and thereby improve the environment in which they live.

Curriculum Focus

Language Arts
Science
Social Studies

Materials

- “Student Sheet: How Do You Rate?”

Key Vocabulary

Conservation
Efficiency
Environment
Natural resources
Quality of life

Next Generation Science Correlations

4-ESS3 – 1
5-ESS3 – 1
5-ESS3.C
MS-LS2 – 1
MS-ESS3 – 3
MS-ESS3.A



Introduction

We use natural resources every day. Sometimes we use them just as they come from earth or the atmosphere. At other times we alter their makeup to fit our needs. For instance, we use the sun just as it is to dry clothes, but we use photovoltaic cells to capture the sun’s energy and convert it to electricity, a secondary energy source. We use coal just as it comes to us from the earth to make electricity, or we use coal to provide coke for steel manufacturing. Many natural resources we use every day are nonrenewable, once we use them they are gone. Others are renewable, they can be replaced through natural and/or human processes.

It is responsible to use all resources efficiently and wisely. When we do, we reduce energy use, save money and preserve the environment. Making wise decisions today will have a positive impact on our future.

Imagine the difference we could make if we all used energy more efficiently. We would conserve natural resources for the future and enjoy better air quality and a better life. Each one of us can truly make a difference. All it takes is knowledge and action.



Procedure

Using energy efficiently and conserving our natural resources are responsible and easy actions that students can take today to show they respect the environment and have a desire to protect and preserve it.

1. Pass out “Student Sheet: How Do You Rate.” Discuss the actions that may apply to the school (e.g., windows and doors have weather-stripping; drapes or blinds are open on cold, sunny days and closed on hot days; thermostats are adjusted at night; lawns are only watered early or late in the day). As you discuss each action, write a T for true or F for false on the board to see how the school rates. What can the students do to improve energy use at school?
2. Decide on several actions the students can take at school to help save energy and protect the environment. One action might be to use both sides of their paper and then recycle. If a room is empty during lunch or at other times, they can be sure lights are turned off and computers are on sleep mode.
3. Have the students take the survey home and complete it with a parent or guardian. Explain to students that it is important to record their true energy use and not mark what they think they should be doing.

4. How did the students' homes rate? Discuss the results of the home survey. Help students to become enthusiastic about conserving natural resources and using energy more efficiently.
5. Prepare a graph to show the results of the energy efficiency survey. Which efficiency tips are already practiced by most students? Which were least used? Graph the number of students marking true for each item.
6. Find the mean, median, mode and range of the data on the home survey.



Discussion

Discuss the benefits of energy conservation. How will our energy use impact our future? Compare the benefits and possible inconveniences and their correlation to our quality of life.



To Know and Do More

Why do you think people do not practice all of the energy efficiency tips on the survey? Are there false assumptions that affect people's behavior? (Believing that turning things on and off uses more energy than leaving them on, for example.)

Discuss how people in other geographic areas and cultures would rate. Does everyone have a car, dishwasher or an air conditioner?



Career Awareness Activity

Have the students think of some careers that could have a big impact on your community's energy usage. Some areas to consider: teachers impact energy usage through education and by example; utility workers impact energy through education and incentives; government regulators have an influence through restrictions and rewards, such as financial benefits or tax breaks.

Student Sheet: How Do You Rate?

How energy efficient is the building you live in? Together with your parents or guardians, answer the following questions to rate your home or apartment.

Circle T if the statement is true, F if the statement is false or NA if the statement does not apply to your living situation.

Heating and Cooling

Windows and doors have good weather-stripping.	T F NA	Ducts are insulated in unheated/uncooled areas.	T F NA
Window coverings are open on cold, sunny days and closed on hot days.	T F NA	Garage is insulated.	T F NA
Window coverings are closed at night when heat is on.	T F NA	Air filters on furnace and air conditioner are cleaned and changed regularly.	T F NA
Thermostat is set at 68 F (20 C) or lower in winter.	T F NA	Thermostat is adjusted at night.	T F NA
Air-conditioning is set at 78 F (26 C) or higher in summer.	T F NA	Fireplace damper is closed when fireplace is not in use.	T F NA

Water

A pitcher of water is kept in the refrigerator for drinking.	T F NA	Hot water heater is set at 120 F (49 C).	T F NA
Faucets and toilets do not leak.	T F NA	<ul style="list-style-type: none"> If someone in your household has a compromised immune system, consult your physician. 	
Showers and faucets are fitted with energy-efficient shower heads and aerators.	T F NA	Hot water pipes from water heater are insulated.	T F NA
Showers last no longer than 5 minutes.	T F NA	If located in an unheated area, hot water heater is wrapped in an insulation blanket.	T F NA
Toilets are low flow, or tanks use water displacement devices.	T F NA	Broom, not hose, is used to clean driveways and sidewalks.	T F NA
		Faucet is shut off while brushing teeth and shaving.	T F NA

Appliances

Dishwasher is usually run with a full load.	T F NA	Clothes dryer is usually run with a full load.	T F NA
Automatic air-dry is used with the dishwasher.	T F NA	Clothes are often hung up to dry.	T F NA
Washing machine is usually run with a full load.	T F NA	Refrigerator is set no lower than 37 F (3 C).	T F NA
Cold water is used in washing machine most of the time and is always used for rinses.	T F NA	Lids are usually put on pots when boiling water.	T F NA
		Oven is preheated for only 10 minutes (if at all).	T F NA

Lighting

Lights are turned off when not in use.	T F NA	Light bulbs are kept dusted and clean.	T F NA
LED bulbs are used in at least one room.	T F NA	Sunlight is used whenever possible.	T F NA
Security and decorative lighting is powered by solar energy.	T F NA		



Trash

Glass, cans and newspapers are recycled.	T F NA	Overpackaged products are usually avoided.	T F NA
Plastic is separated and recycled.	T F NA	Reusable bags are used for groceries, or bags are recycled.	T F NA
Old clothes are often given to charities, secondhand clothing stores, etc.	T F NA	Rechargeable batteries are used when possible.	T F NA
Food scraps and organic waste are composted.	T F NA	Food is often bought in bulk.	T F NA
		Products made of recycled materials are favored.	T F NA

Transportation

Car is properly tuned and tires properly inflated.	T F NA	Public transportation is used when possible.	T F NA
Family drivers obey speed limit on the highway.	T F NA	Family members often walk or ride a bike for short trips.	T F NA
Family drives an electric vehicle.	T F NA	Kids and parents carpool when possible.	T F NA

Yard and Workshop

Lawns are watered early or late in the day.	T F NA	Cutting edges on tools are kept sharp.	T F NA
Grass is mowed to a height of 2 to 3 inches	T F NA	Electrical tools are maintained and gas equipment is kept tuned and serviced.	T F NA
Hand tools like pruners and clippers (rather than power tools) are used whenever possible.	T F NA		

Score 1 point for true, 0 points for false and 0 points for not applicable (NA).

Total Points: _____

Discuss the results of this survey with your family.
What can you and your family do to raise your score?

Activity: Energy in Math

Objective

Students will interpret and evaluate numerical expressions as they solve word problems.

Materials

- Copies of the questions found in the "To Know and Do More" section
- Individual white boards (optional)

Key Vocabulary

Watt

Common Core Correlations

Numbers and Operations
Data Analysis and Probability
Connection to the Real World
Measurement



Introduction:

In this activity, students will complete the problem set found on the next page within an allotted time (10 minutes). Students will solve the mathematical problems making connections to real world situations.



Procedure:

- Instruct students on the importance of learning to solve real world problems using their math skills. You may want to review some steps to solving word problems before beginning the first problem. The following questions might be useful to review:
 - Can you draw something to help you?
 - What can you draw?
 - What conclusions can you make from your drawing?
- Copy the questions on the "To Know and Do More" section on the next page and pass it out to students. Make sure to remove answers on the bottom of the page.
- Model the problem.
 - Have a pair of students work at the board while the others work independently or in pairs at their seats.
 - As students work, circulate. Reiterate the questions above. After several minutes, have the demonstrating students receive and respond to feedback and questions from their peers if necessary.
- Calculate to solve and write a statement.
 - Give everyone 2 minutes to finish work on that question, sharing their work and thinking with a peer. All should write their equations and statements of the answer.
- Assess the solution for reasonableness.
 - Give students 1 to 2 minutes to assess and explain the reasonableness of their solution.



Discussion/Debrief

The student debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the problem set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed. Then guide students in a conversation to debrief the problem set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What did you notice about this word problem?
- What is different in the problem?
- What are we trying to find out?
- How can we represent this part of the story? (draw, write a number, use manipulatives)
- What would help us organize our thinking and our work? (answers may vary: draw it out, act it out, write an equation, etc.)
- What strategies can we use to solve this problem?



To Know and Do More

Have your students turn in their worksheets showing their work to solve each problem. This will help you to assess your students' understanding of the math concepts presented in the lesson.

1. Jessie saved more energy than Michael. Michael saved more energy than Maggie. Maggie saved less energy than Jessie. Karen saved more energy than Jessie. List the kids' names in order of how much energy they saved, least to most:
 - Jessie, Karen, Maggie, Michael
 - Maggie, Michael, Jessie, Karen
 - Michael, Jessie, Maggie, Karen
 - Maggie, Karen, Michael, Jessie
2. The Maher family used 57,000 gallons of water a year, costing them \$525 to heat it. Estimate how much money they would save in a year if they cut their hot water use by 30,820 gallons.
 - \$100
 - \$240
 - \$284
 - \$525
3. If each person in a house uses a 60 Watt bulb in their own bedroom 4 hours a day, and there are three people living there, how many Watts will be used a day to light the bedrooms?
 - 20 Watts
 - 240 Watts
 - 650 Watts
 - 720 Watts
4. For every 10 degrees the water heater setting is turned down, you can save 6% of the energy used. If Charles turns his water heater down by 15 degrees, about what percent savings in energy will he save?
 - 6%
 - 9%
 - 12%
 - 15%

Answers: 1. Maggie, Michael, Jessie, Karen; 2. \$284; 3. 720 Watts; 4. 9%

Activity: Go Against the Flow

Objective

Students will be able to calculate flow rates of water; gallons of water and energy saved by replacing old fixtures with more efficient ones.

Curriculum Focus

Math
Science

Materials

- Flow test bag
- Stopwatch or clock with a second hand

Key Vocabulary

Aerator
Flow rate

Next Generation Science Correlations

4-ETS1 – 1-2
MS-ETS1 – 1



Introduction

This activity highlights the amount of water that must be heated to do everyday tasks such as washing dishes or taking a shower. Students will measure water output from a typical shower head and faucet aerator; then calculate the amount of water and energy used. This activity will need to be done over 2 days, allowing for time to test at home.



Procedure

1. Discuss the fact that heating water is one of the largest energy uses in the home and that most people have no idea how much water they use each day. Excessive water use and improper settings on water heater thermostats waste energy in many homes. Remind students that experts recommend setting the water heater temperature at 120 F. Brainstorm ways to use less hot water (for example, taking showers rather than baths, taking 5 minute showers and washing laundry in cold water).
2. Review how to use the flow test bag.
3. Have students test the flow rate of their shower heads and faucets at home and record their answers.
4. The next day, discuss how much heated water and energy was used in student homes for showers and faucets. Why do the numbers vary? Variables include the number of people in the home, the water pressure and the efficiency of faucet aerators and shower heads.
5. Discuss ways to reduce the water and energy used in our homes. What actions can we take to be more efficient in our water use?



To Know and Do More

Have students use a timer to try taking showers in 5 minutes or less, with the stipulation that they must actually get clean!



Lingo Card

L	I	N	G	O
Water	Natural Gas	Natural Resource	Incandescent	Reduce
Full Load	Phantom Load	Oil	Coal	ENERGY STAR®
Renewable	Energy	Be Wattsmart, Begin at home	Turn It Off	Uranium
Energy Efficiency	LED	Recycle	68 Degrees	Embodied Energy
Cooking	78 Degrees	Solar	Programmable or Smart Thermostat	Electricity

L	I	N	G	O
Full Load	Natural Gas	Phantom Load	LED	78 Degrees
Cooking	Electricity	Renewable	Recycle	68 Degrees
Natural Resource	Water	Be Wattsmart, Begin at home	ENERGY STAR®	Nonrenewable
Embodied Energy	Coal	Energy Efficiency	Heating	Incandescent
Programmable or Smart Thermostat	Reduce	Oil	Solar	Uranium

L	I	N	G	O
Coal	Natural Gas	Solar	Turn It Off	Renewable
Water	Nonrenewable	Phantom Load	Electricity	Full Load
Energy	Oil	Be Wattsmart, Begin at home	68 Degrees	Cooking
Programmable or Smart Thermostat	Incandescent	Recycle	Uranium	Natural Resource
Reduce	78 Degrees	Embodied Energy	LED	Energy Efficiency

L	I	N	G	O
Natural Resource	Water	Natural Gas	Programmable or Smart Thermostat	78 Degrees
Turn It Off	Reduce	Oil	Embodied Energy	Cooking
Phantom Load	ENERGY STAR®	Be Wattsmart, Begin at home	Uranium	Recycle
Energy	LED	68 Degrees	Energy Efficiency	Heating
Electricity	Renewable	Incandescent	Full Load	Solar

Dear Family,

Today your fourth grader participated in the **Be Wattsmart, Begin at home** program sponsored by Rocky Mountain Power. In this engaging presentation, your student learned key science curriculum concepts as well as important ways to be more efficient with energy use at home.

As part of the **Be Wattsmart, Begin at home** program, your fourth grader received a:

- **Be Wattsmart, Begin at home** booklet
- *Home Energy Worksheet* (HEW)

Please take a moment to read through this informative booklet with your family. Then fill out the HEW in one of two ways:

- Visit thinkenergy.org/Wattsmart and complete the online worksheet. You will need to enter the teacher ID found on the paper worksheet. If you do not have the teacher ID, you can find it by searching for the teacher's name on the website.
- or
- Fill out the paper worksheet and return it to your student's teacher. To thank you, Rocky Mountain Power will provide your fourth grader with a Wattsmart nightlight.



We appreciate your efforts to reinforce important **Be Wattsmart, Begin at home** energy knowledge and efficiency actions in your home!



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Estimada familia,

Hoy su estudiante en cuarto grado participó en el programa **Sea Wattsmart, Empieza en casa**, patrocinado por Rocky Mountain Power. En esta presentación atractiva, su estudiante aprendió conceptos claves de su plan de estudios de ciencias, así como formas importantes para ser más eficiente con el uso de energía en el hogar.

Como parte del programa de **Sea Wattsmart, Empieza en casa**, su estudiante en cuarto grado recibió:

- El folleto de **Sea Wattsmart, Empieza en casa**
- *Verificación de Energía Doméstica*

Tome un momento para leer el folleto informativo con su familia. Luego, complete la *Verificación de Energía Doméstica* de una de estas maneras:

- Visite thinkenergy.org/Wattsmart para completar el formulario en línea. Necesitará entrar el número de identificación de su alumno que se encuentra en el formulario de papel. Si no tiene la identificación del profesor, puede encontrarla buscando por el nombre del profesor en el sitio web.



- o
- Complete el formulario y devuélvalo al maestro de su estudiante. Para agradecerle, Rocky Mountain Power le proporcionará al estudiante en cuarto grado una luz nocturna de Wattsmart.

Apreciamos sus esfuerzos para reforzar la importancia del **Sea Wattsmart, Empieza en casa** de la energía y las acciones eficientes en el hogar.



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Home Energy Worksheet (English)

Teacher Name

Student First Name, Last Initial

Teacher ID



Submit online
at thinkenergy.org/wattsmart

Home Energy Worksheet

Heating

- Install and use a programmable or smart thermostat.
 Currently Do Will Do Neither
- Caulk windows and weather-strip outside doors.
 Have Done Will Do Neither
- Inspect attic insulation and add insulation if needed.
 Have Done Will Do Neither
- Keep furnace air filters clean/replaced regularly.
 Currently Do Will Do Neither

Cooling

- Replace existing air-conditioning unit with a high-efficiency unit, heat pump or an evaporative cooling unit.
 Have Done Will Do Neither
- Close blinds when windows are exposed to the sun.
 Currently Do Will Do Neither
- Use a fan instead of air-conditioning.
 Currently Do Will Do Neither
- Participate in Rocky Mountain Power's Cool Keeper program.
 Currently Do Will Do Neither

Water heating

- Set the water heater temperature to 120 F.
 Have Done Will Do Neither
- Install a high-efficiency shower head.
 Have Done Will Do Neither
- Take 5 minute showers.
 Currently Do Will Do Neither

- Wash full loads in the dishwasher and clothes washer.
 Currently Do Will Do Neither

Lighting

- Replace inefficient bulbs with LED bulbs.
 Have Done Will Do Neither
- Turn lights off when not in use.
 Currently Do Will Do Neither

Refrigeration

- Replace old, inefficient refrigerator with an ENERGY STAR® model.
 Have Done Will Do Neither
- Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.
 Have Done Will Do Neither
- Maintain refrigerator and freezer coils and check door seals twice yearly.
 Currently Do Will Do Neither

Electronics

- Turn off computers, TVs and game consoles when not in use.
 Currently Do Will Do Neither

Cooking

- Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.
 Currently Do Will Do Neither

Get paid for being Wattsmart

- Visit Rocky Mountain Power at [Wattsmart.com](https://www.wattsmart.com) for more energy saving tips and rebates.
 Have Done Will Do Neither



Home Energy Worksheet (Spanish)

Identificación del profesor

Primer nombre del estudiante

Nombre del profesor



Enviar en línea
a thinkenergy.org/wattsmart

Verificación de Energía Doméstica

Calefacción

- Instalar y usar un termostato programable o termostato inteligente.
 Lo hago Lo haré Ninguno
- Calafatear ventanas e instalar burletes en el exterior de las puertas.
 Lo he hecho Lo haré Ninguno
- Inspeccionar el aislamiento del ático y agregar aislamiento si es necesario.
 Lo he hecho Lo haré Ninguno
- Mantener los filtros de aire de la calefacción limpios/ reemplazarlos regularmente.
 Lo hago Lo haré Ninguno

Enfriamiento

- Reemplazar la unidad de aire acondicionado existente por una unidad de alta eficiencia, bomba de calor o un enfriador evaporativo.
 Lo he hecho Lo haré Ninguno
- Cerrar las persianas cuando las ventanas están expuestas al sol.
 Lo hago Lo haré Ninguno
- Usar un ventilador en lugar del aire acondicionado.
 Lo hago Lo haré Ninguno
- Participar en el programa "Cool Keeper" de Rocky Mountain Power.
 Lo hago Lo haré Ninguno

Calentadores de agua

- Programar el calentador de agua a 120 F.
 Lo he hecho Lo haré Ninguno
- Instalar un cabezal de ducha de alta eficiencia.
 Lo he hecho Lo haré Ninguno
- Tomar duchas de 5 minutos.
 Lo hago Lo haré Ninguno

- Lavar cargas llenas en los lavaplatos y las lavadoras de ropa.
 Lo hago Lo haré Ninguno

Iluminación

- Reemplazar los focos ineficientes con focos LED.
 Lo he hecho Lo haré Ninguno
- Apagar las luces cuando no estén en uso.
 Lo hago Lo haré Ninguno

Refrigerador

- Reemplazar el refrigerador viejo e ineficiente con un modelo de ENERGY STAR®.
 Lo he hecho Lo haré Ninguno
- Desenchufar refrigeradores/congeladores viejos y/o desecharlos de una manera ambientalmente segura.
 Lo he hecho Lo haré Ninguno
- Mantener las bobinas del refrigerador y del congelador e inspeccionar el sello de las puertas dos veces al año.
 Lo hago Lo haré Ninguno

Electrónicos

- Apagar computadoras, televisores y consolas de juegos cuando no estén en uso.
 Lo hago Lo haré Ninguno

Cocinar

- Usar un horno microonda, un horno eléctrico, una olla de cocimiento lento o una parrilla al aire libre en lugar del horno convencional.
 Lo hago Lo haré Ninguno

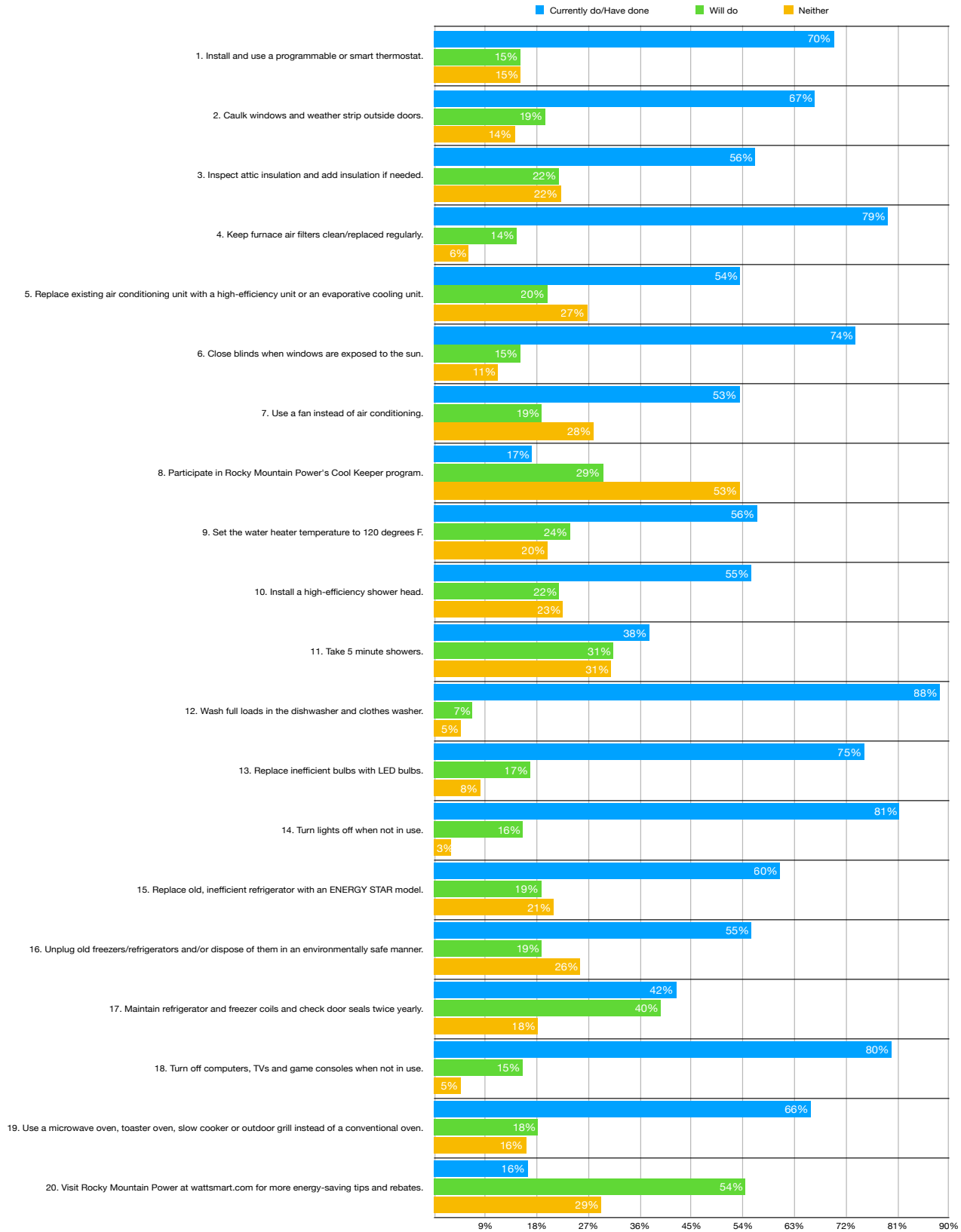
Reciba paga siendo Wattsmart

- Visite Rocky Mountain en Wattsmart.com para obtener más consejos y rebajas de ahorro de energía.
 Lo he hecho Lo haré Ninguno



Home Energy Worksheet Summary – Rocky Mountain Power

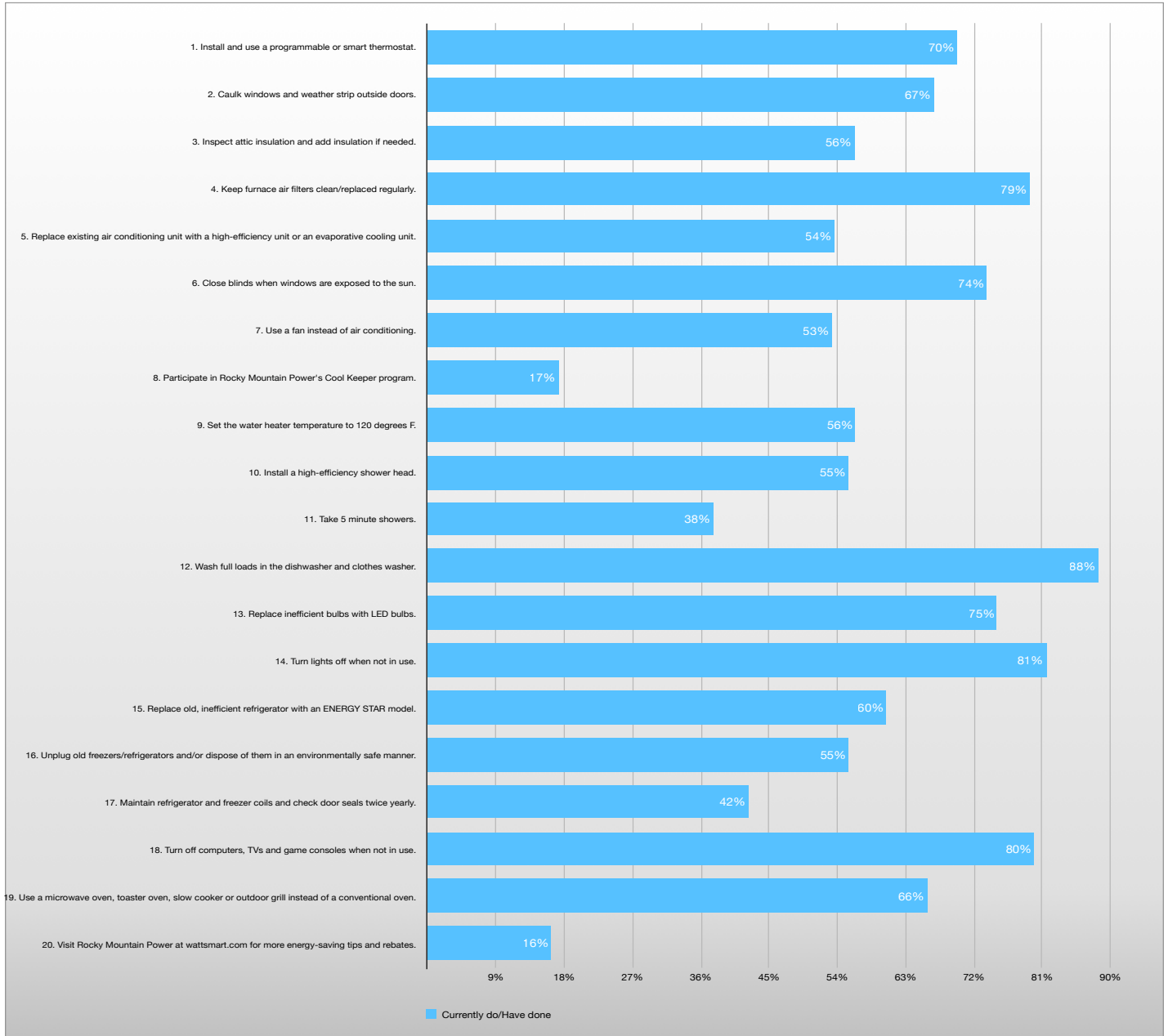
Energy Efficient Activity	Currently do/Have done	Will do	Neither
1. Install and use a programmable or smart thermostat.	70%	15%	15%
2. Caulk windows and weather strip outside doors.	67%	19%	14%
3. Inspect attic insulation and add insulation if needed.	56%	22%	22%
4. Keep furnace air filters clean/replaced regularly.	79%	14%	6%
5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.	54%	20%	27%
6. Close blinds when windows are exposed to the sun.	74%	15%	11%
7. Use a fan instead of air conditioning.	53%	19%	28%
8. Participate in Rocky Mountain Power's Cool Keeper program.	17%	29%	53%
9. Set the water heater temperature to 120 degrees F.	56%	24%	20%
10. Install a high-efficiency shower head.	55%	22%	23%
11. Take 5 minute showers.	38%	31%	31%
12. Wash full loads in the dishwasher and clothes washer.	88%	7%	5%
13. Replace inefficient bulbs with LED bulbs.	75%	17%	8%
14. Turn lights off when not in use.	81%	16%	3%
15. Replace old, inefficient refrigerator with an ENERGY STAR model.	60%	19%	21%
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.	55%	19%	26%
17. Maintain refrigerator and freezer coils and check door seals twice yearly.	42%	40%	18%
18. Turn off computers, TVs and game consoles when not in use.	80%	15%	5%
19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.	66%	18%	16%
20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.	16%	54%	29%



Data Numbers

Energy Efficient Activity	Currently do/Have done	Will do	Neither	Total Responses
1. Install and use a programmable or smart thermostat.	5325	1148	1158	7631
2. Caulk windows and weather strip outside doors.	5062	1471	1061	7594
3. Inspect attic insulation and add insulation if needed.	4259	1651	1669	7579
4. Keep furnace air filters clean/replaced regularly.	6031	1099	471	7601
5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.	4060	1494	2024	7578
6. Close blinds when windows are exposed to the sun.	5595	1141	852	7588
7. Use a fan instead of air conditioning.	4041	1433	2111	7585
8. Participate in Rocky Mountain Power's Cool Keeper program.	1296	2217	4026	7539
9. Set the water heater temperature to 120 degrees F.	4260	1792	1500	7552
10. Install a high-efficiency shower head.	4212	1667	1719	7598
11. Take 5 minute showers.	2853	2382	2353	7588
12. Wash full loads in the dishwasher and clothes washer.	6737	524	360	7621
13. Replace inefficient bulbs with LED bulbs.	5699	1278	610	7587
14. Turn lights off when not in use.	6185	1182	225	7592
15. Replace old, inefficient refrigerator with an ENERGY STAR model.	4590	1417	1583	7590
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.	4188	1424	1935	7547
17. Maintain refrigerator and freezer coils and check door seals twice yearly.	3202	3003	1377	7582
18. Turn off computers, TVs and game consoles when not in use.	6072	1173	351	7596
19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.	4995	1384	1211	7590
20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.	1235	4126	2214	7575

Wise Energy Behaviors in Rocky Mountain Power Utah Homes



Sampling of Thanks a "WATT" Cards

AVOLTA
 Damian
 Simri
 LUNA
 D e z i r e e
 Oliver
 Alexa
 Mr. Valdez
 Juliana
 F I L S a n

Thanks
 a "Watt!"

Anthony
 thanks
 a watt :)

Thank you for providing the **Be Wattsmart, Begin at home** program to our school. We learned how to make a difference, use energy wisely and help protect the environment.

~~Elia~~

Giuliana
 WATTSMART
 BEGIN AT HOME

EMT

chanceira
 &

Amani

Jack

Dax

Daynn

Carri



Desiree

Eitan

Elizabeth Reese

Chesnie
Karyden

Noah

Justin

Mason

Hadley

Thanks

Paige H

Thank u
a "Watt!"

Analucia

Ryein

Michael

Thank you for providing the **Be Wattsmart, Begin at home**

program to our school. We learned how to make a difference, use energy
wisely and help protect the environment.

David

Jaiden

Quinn
Aurora

WATTSMART®
BEGIN AT HOME

Casey

Samia Owens

Zander

McKAY

Lydia

William



Lily



POWERING YOUR GREATNESS

Bruce
THANKS

September 29, 2022

Dear WattSmart,

David

Isabella

Abraar

Daniel ☺
Aldair


THANK
YOU!

FOR COMING TO OUR 4th GRADE CLASSROOM AT Redwood Elementary. We enjoyed the presentation and learned so much about power and how to save electricity.

Sarah

Ata Adafy

Sincerely,

Mrs. Wilson's Class

Francisco

Mrs. Wilson

Oliver Elias

Jerome Faridun

Cristian

Zean Aswan

Matey

Yeha

Lexis Jaziel

NOP



THANK YOU FOR THE
INFORMATIVE
WATTS
SMART
PRESENTATION!

Ms. Sarah Lallatin's Class, Timpanogos Academy

Joshua

Mrs. Bailey

BRANDON

smix ⚡



BRUCE

Thanks

Milo

a "Watt!"

Zoey
Melissa
Walker

EMMA

Ethan

Thank you for providing the **Be Wattsmart, Begin at home**

program to our school. We learned how to make a difference, use energy

wisely and help protect the environment.

water

Annie
Jordyn

Payne

Mark ♥
mark

WATT **SMART**
BEGIN AT HOME

Taylee
Copier

Siam
Morley

EVERETT

rathomielack

Josaphine

wineBrenner



EMILY