



AMERICA'S ELECTRIC
COOPERATIVES

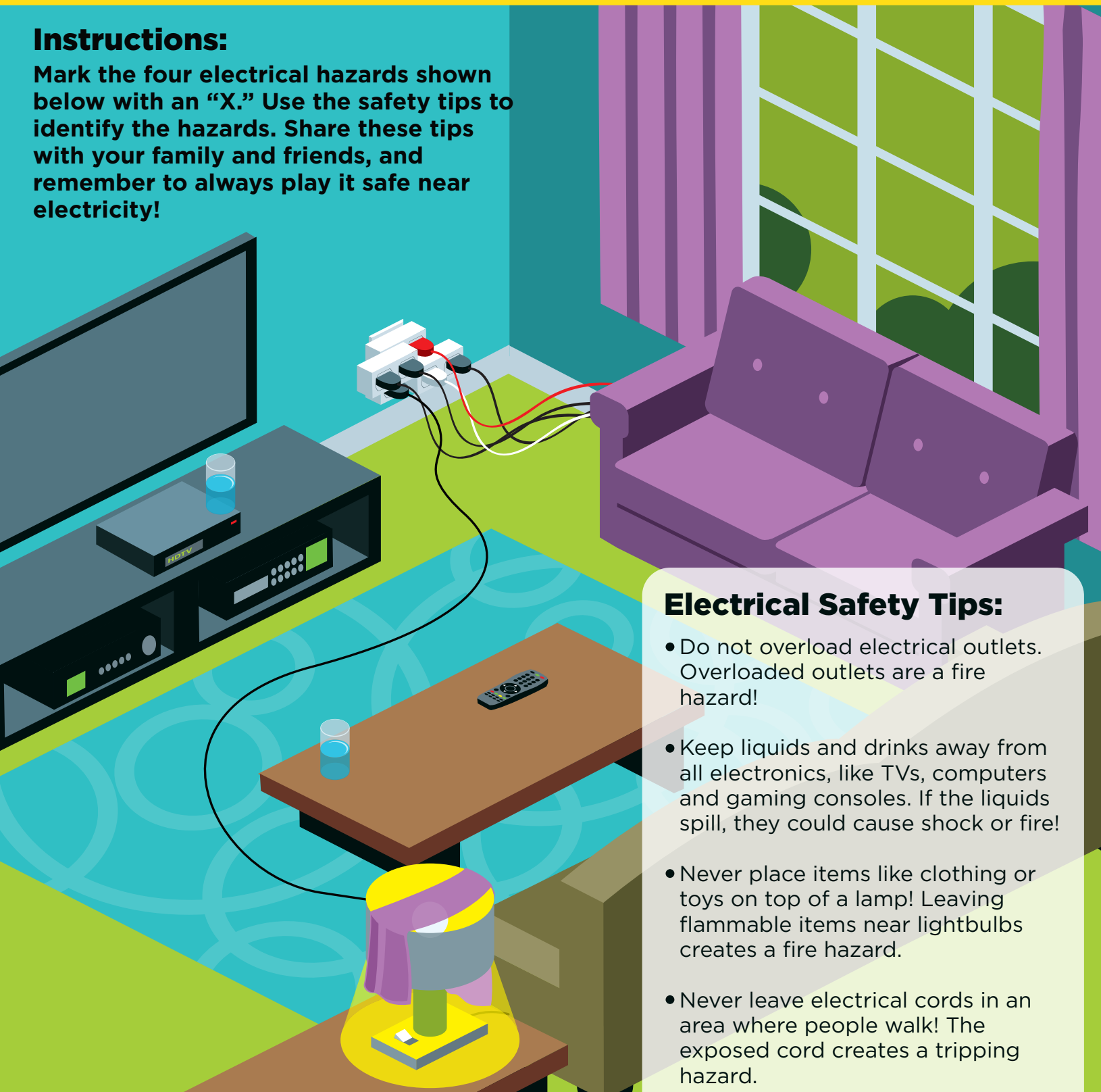
Electrical Safety Activity



**Energy
Explorers**

Instructions:

Mark the four electrical hazards shown below with an "X." Use the safety tips to identify the hazards. Share these tips with your family and friends, and remember to always play it safe near electricity!



Electrical Safety Tips:

- Do not overload electrical outlets. Overloaded outlets are a fire hazard!
- Keep liquids and drinks away from all electronics, like TVs, computers and gaming consoles. If the liquids spill, they could cause shock or fire!
- Never place items like clothing or toys on top of a lamp! Leaving flammable items near lightbulbs creates a fire hazard.
- Never leave electrical cords in an area where people walk! The exposed cord creates a tripping hazard.



ELECTRICAL SAFETY QUIZ

Test your electrical safety knowledge by taking the quiz below!

Use the answer key if you need help.

1. Smoke alarms in your home should be tested _____.

- A. once a week
- B. twice a year
- C. once a month

2. Overloading electrical outlets and power strips can create an electrical fire hazard.

- A. True
- B. False

3. What's the most dangerous place to use electricity?

- A. Outdoors
- B. Near other electrical equipment
- C. Near water

4. It's safe to run an electrical cord under a rug or carpet as long as the cord is not damaged.

- A. True
- B. False

5. Which is safest to play near?

- A. Power lines
- B. Pad-mounted transformers
- C. Neither A or B – both are dangerous



Answer Key: 1.C 2.A 3.C 4.B 5.C



AMERICA'S ELECTRIC
COOPERATIVES



STORM SAFETY CROSSWORD PUZZLE

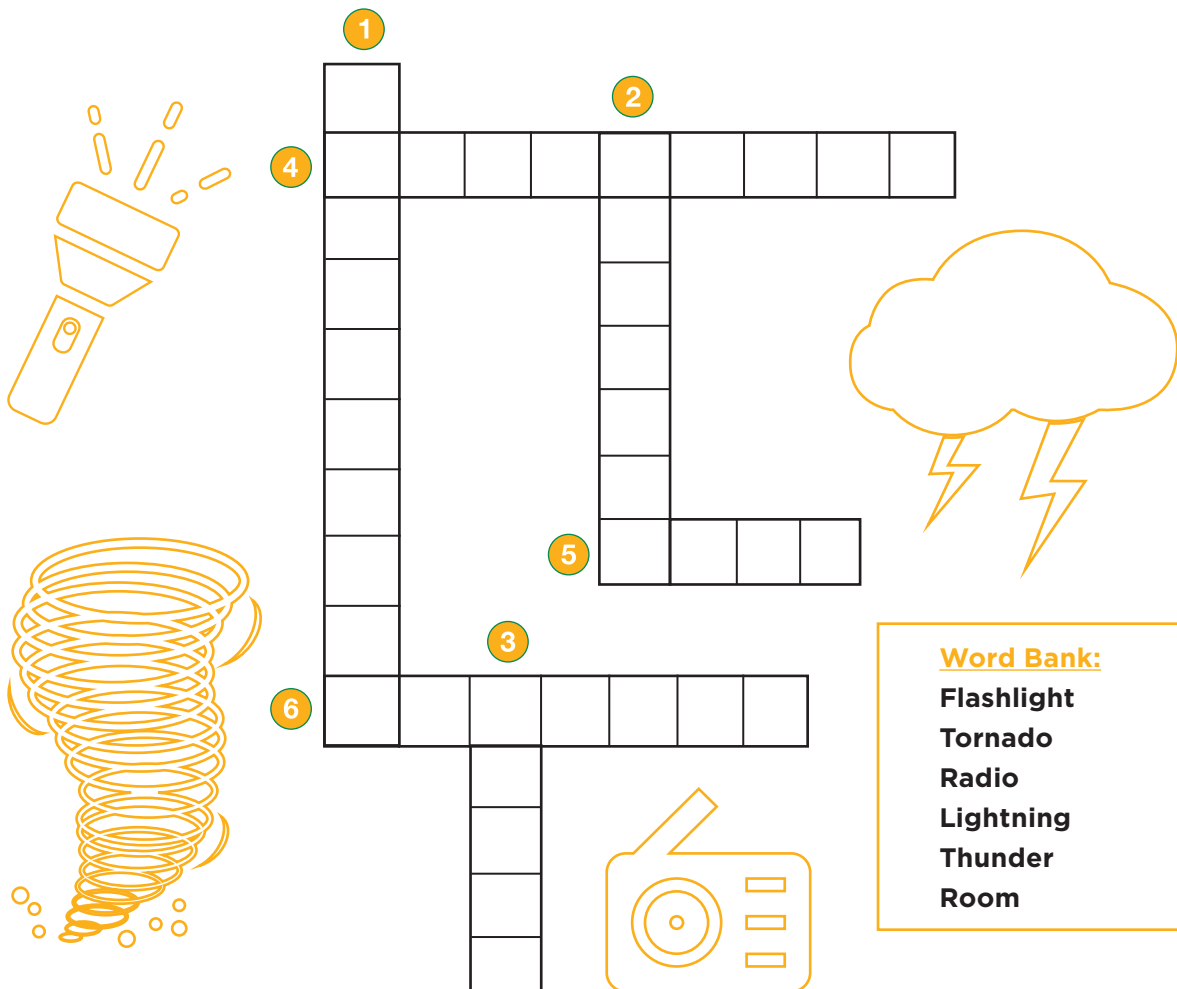
Spring has finally arrived with colorful flowers and warmer weather. But the season can also produce severe storms. The Energy Explorers want to remind everyone to stay safe when severe weather hits. Complete the crossword puzzle below and share these tips with your family and friends.

DOWN

1. Keep a _____ handy in case of a power outage.
2. If you hear _____ go inside. If you can hear it, you are close enough to be in danger from lightning.
3. Have a battery-powered weather _____ nearby so you can keep track of the severe weather.

ACROSS

4. Watch for signs of a thunderstorm, including dark skies, flashes of _____ or heavy winds.
5. If a tornado is heading your way, pick a safe _____ in your home where family can gather. The safest places would be a basement, storm cellar or interior room.
6. Practice a family _____ drill at least once a year.



Word Bank:

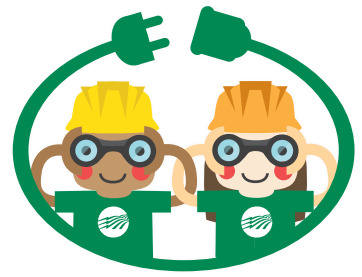
Flashlight
Tornado
Radio
Lightning
Thunder
Room



**Energy
Explorers**

Farm Safety Coloring Sheet

Farm Safety Week is September 17-23, 2017!
Whether you live on a farm or in the city,
always remember to avoid playing near
power lines and other electrical
equipment.

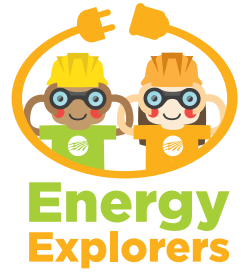


**Energy
Explorers**



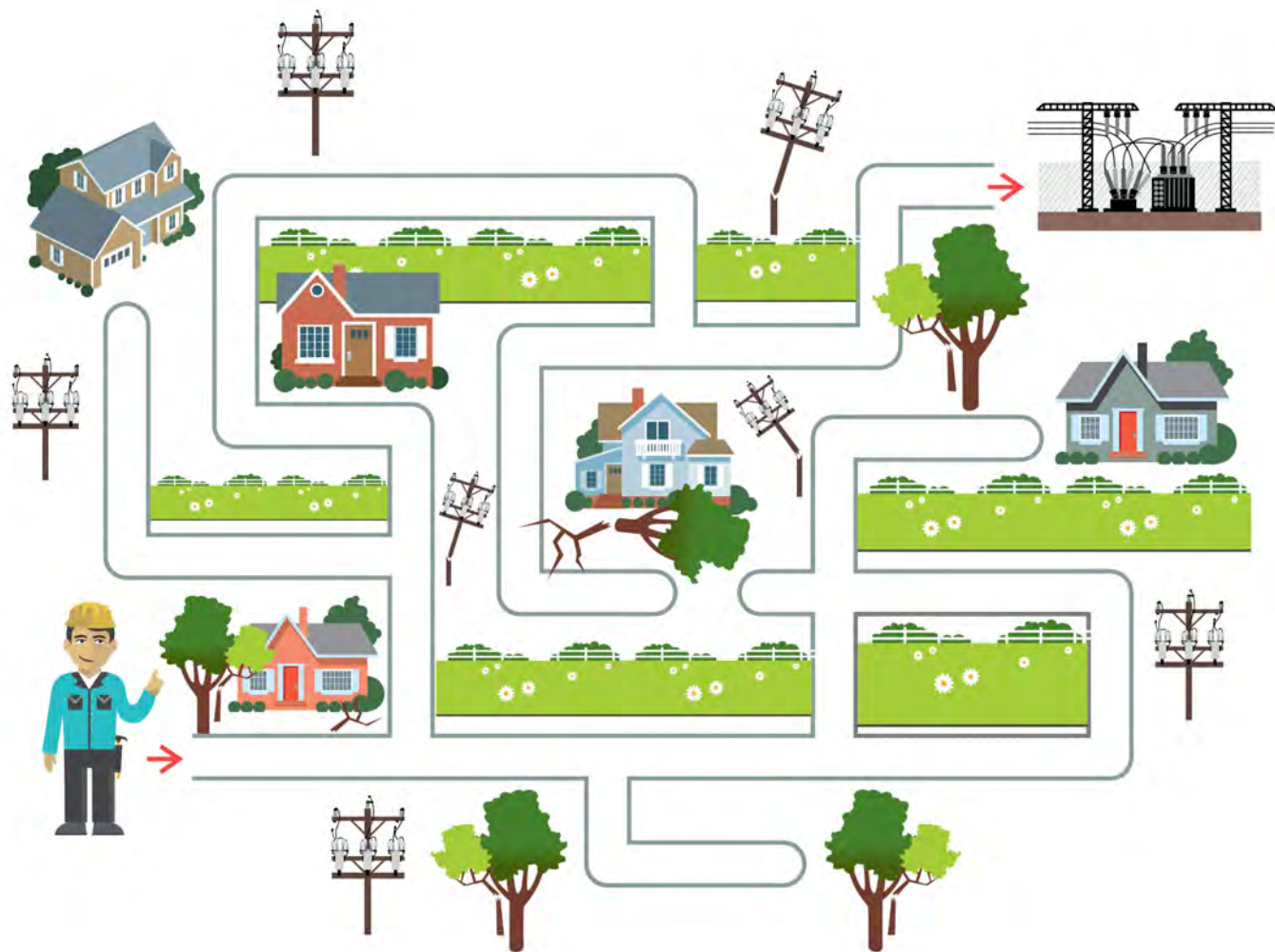
AMERICA'S ELECTRIC
COOPERATIVES

HELP THE LINEWORKER REACH THE SUBSTATION



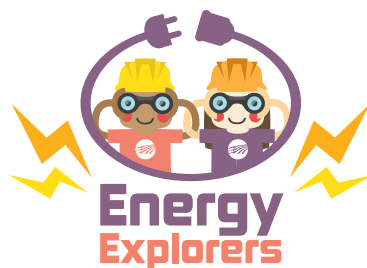
Lineworkers work in dangerous conditions to restore electricity after major storms and other types of power outages. Many times, lineworkers make substation repairs to get the power back on.

Can you help the lineworker get to the substation?



AMERICA'S ELECTRIC
COOPERATIVES

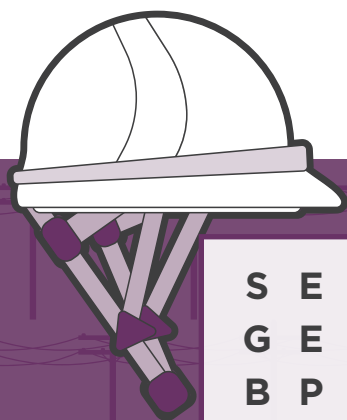
LINEWORKER GEAR WORD SEARCH



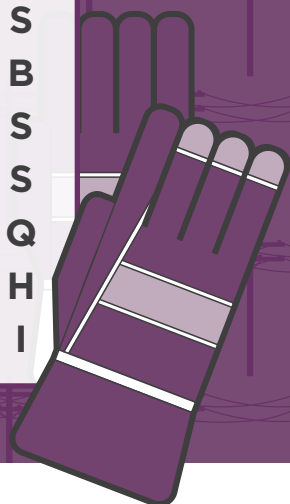
Did you know lineworkers wear special protective gear to keep them safe while working on power lines and other electrical equipment?

Read the descriptions to learn about a lineworker's gear and find the **bolded words** in the puzzle below.

- **Safety goggles** keep debris away from lineworkers' eyes while on the job.
- **Hard hats** protect lineworkers from head injuries and falling debris.
- **Work boots** provide extra protection while lineworkers work with heavy materials that could fall near their feet.
- **Flame-resistant** clothing keeps lineworkers safe from electrical hazards.
- **Insulated gloves** protect lineworkers from electrical shock while working on power lines.
- **Equipment belts** hold several tools that lineworkers need to get the job done.



S	E	E	X	H	M	D	T	V	H	E	Z	N	P	S
G	E	A	A	U	H	J	N	P	G	I	E	V	T	H
B	P	V	T	K	T	Q	A	J	J	Q	X	L	Z	A
S	G	D	O	G	F	A	T	L	Z	H	E	D	I	R
R	I	Z	F	L	G	G	S	W	H	B	H	G	O	D
F	V	X	Y	Z	G	W	I	X	T	R	W	M	Q	H
V	L	P	A	B	W	D	S	N	D	W	L	K	O	A
D	Y	A	O	X	T	O	E	P	C	Y	Y	H	R	T
O	H	X	Y	Q	R	M	R	T	G	M	G	J	X	S
X	M	T	V	B	P	H	E	K	A	J	U	X	Z	B
P	Y	N	L	I	U	S	M	K	B	L	N	N	T	S
U	T	K	U	E	H	M	A	O	A	O	U	G	O	S
K	O	Q	N	L	Q	W	L	S	T	K	O	S	U	Q
C	E	E	H	T	I	F	F	K	D	C	G	T	N	H
S	A	F	E	T	Y	G	O	G	G	L	E	S	S	I



GEARED FOR SAFETY

Electric co-op lineworkers wear special gear to help them stay safe on the job. Can you match the descriptions below to the correct safety equipment? Use the answer key to check your work!



Energy Explorers



1. These provide extra protection while lineworkers work with heavy materials that could fall near their feet.

2. This material keeps lineworkers safe from electrical hazards.

3. This protects lineworkers from head injuries and falling debris.

4. These insulated protectors keep lineworkers safe from electrical shock while working on power lines.

5. These keep debris away from lineworkers' eyes while on the job.

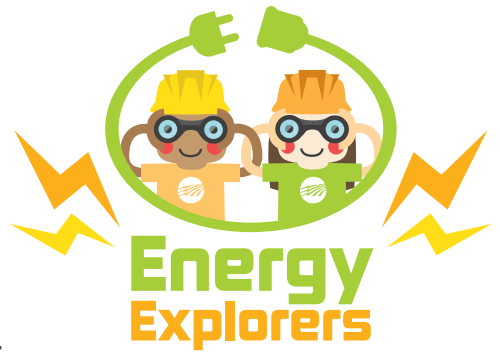
6. This is a handy piece of safety gear that holds tools and other equipment.



AMERICA'S ELECTRIC COOPERATIVES

Answers: 1. Work Boots 2. Flame-Resistant Clothing 3. Hard Hat 4. Insulated Gloves 5. Safety Goggles 6. Equipment Belt

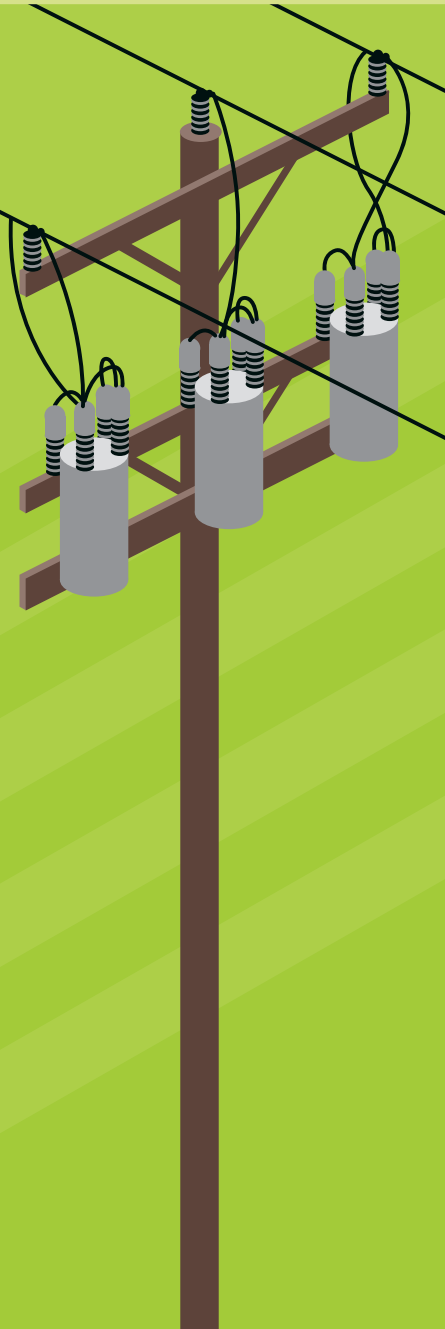
ELECTRICAL EQUIPMENT WORD SCRAMBLE



Electric co-ops use a variety of equipment to make sure you and your family receive reliable electricity. Can you unscramble the equipment terms below?

Use the provided clues for help, and double check your work in the answer key below.

1. **ORNSTAMREFR** _____
These can look like large metal cans on top of utility poles or big green boxes on the ground. They are used to reduce the voltage of electricity, making it safe for use in your home.
2. **OERPW NSLIE** _____
These can hang overhead or be placed underground. They carry electricity from where it's generated to homes and businesses in your community.
3. **OUTASBSNTI** _____
This is an electrical facility that contains equipment for controlling the flow of electricity.
4. **RCTLECIE ERMTE** _____
These devices are typically found outside the home and measure the amount of electricity you use.
5. **CBUTKE KTURC** _____
Lineworkers use these types of vehicles to reach power lines and poles when making repairs and updates to the electrical system.



Answer Key: 1. TRANSFORMER 2. POWER LINES 3. SUBSTATION
4. ELECTRIC METER 5. BUCKET TRUCK

ENERGY TERMS QUIZ

Can you match the definitions below with the correct energy terms?
Use the word bank for clues!

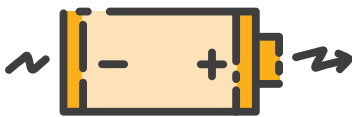


1. These energy sources, like coal, oil and natural gas, were formed from the remains of ancient plants and animals buried underground and are used to generate electricity.



2. This is the network of poles and power lines that sends electricity from where it's generated to homes and businesses all over the county.

3. These energy sources include natural energy from the sun, wind and water and are used to generate electricity.



4. This is the flow of electrically charged particles like electrons within a conductor or circuit.

5. This is the act of using less energy.



Word Bank

CURRENT

ELECTRIC GRID

FOSSIL FUELS

RENEWABLE RESOURCES

ENERGY CONSERVATION



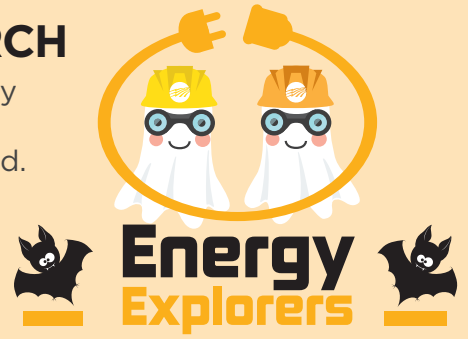
AMERICA'S ELECTRIC
COOPERATIVES

Answer Key: 1. fossil fuels 2. electric grid
3. renewable resources 4. current 5. energy conservation

ENERGY VAMPIRE WORD SEARCH

Are energy vampires lurking in your home? Energy vampires are appliances and electronics that consume energy even when they aren't being used.

Circle all potential energy vampires in the word search below. Tip: Use the word bank as a guide.



T R H P D C Y A T M Y T Q B V
E W M E P H C Z I R S Y D G R
L M C S C U T C G R B H A E O
E A X O A G R F S M E L G I I
V C K F F O K V Y U F R X H E
I X B Y W F S L Z A A E J L C
S Q O A Z X E F Q H T K X J P
I C V B G A M E C O N S O L E
O E G G E R Y E M M G P O Y I
N E P O N L N V I A R O V D D
S C M R O O B G A L K P Q Y U
J W S M H Q M A W W Z E B H N
M E J P F X A X C R P B R V F
N Z I D M R E Y A L P D V D X
K S R V I B K I R R F P H U Y

Word Bank

GAME CONSOLE
COFFEE MAKER
PHONE CHARGER
CABLE BOX

MICROWAVE
DVD PLAYER
TELEVISION

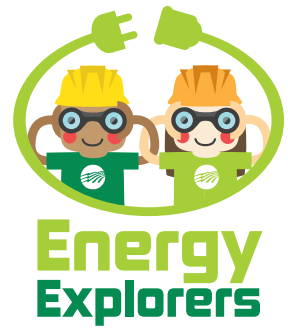
To save energy, unplug these items when they are not in use.



AMERICA'S ELECTRIC
COOPERATIVES

ENERGY EFFICIENCY QUIZ

Are you an energy efficiency whiz?
Test your knowledge by taking the quiz below.
Hint: Check your answers at the bottom of the page.



1. Taking a long bath saves more energy than taking a short shower.

A) True B) False

2. LED bulbs typically use _____ less energy than incandescent light bulbs.

A) 75% B) 50% C) 35%

3. Which of the following is an energy vampire? (Hint: Energy vampires consume energy even when they aren't being used.)

A) Dishwasher B) Electric mixer C) TV

4. If you see this logo on a product, it has an excellent energy efficiency rating.

A) ENERGY SMART B) ENERGY STAR C) ENERGY WISE

5. Turning off the tap water while brushing your teeth can save up to four gallons of water per minute.

A) True B) False

ANSWER KEY

ANSWERS: 1. B 2. A 3. C 4. B 5. A



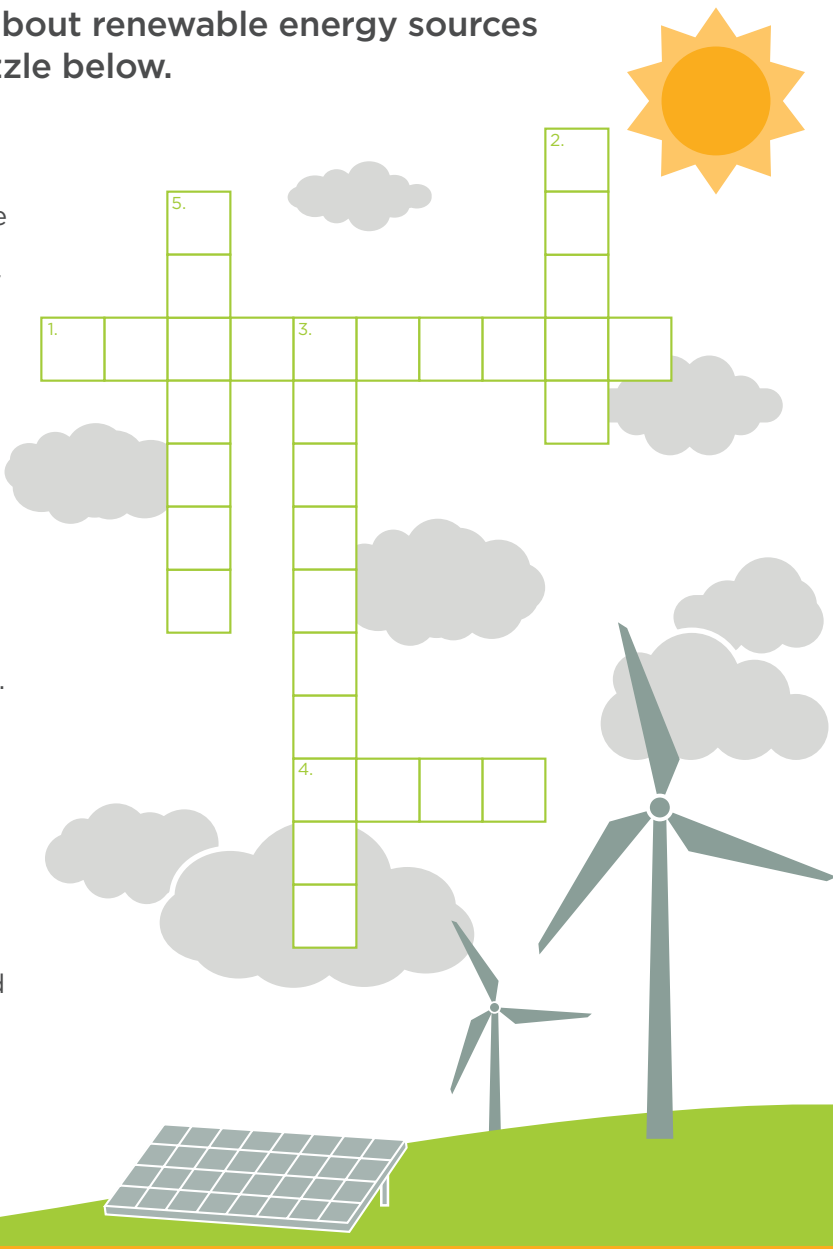
AMERICA'S ELECTRIC
COOPERATIVES

RENEWABLE ENERGY SOURCES CROSSWORD



Did you know the electricity you use in your home is generated using a variety of fuel sources? Some energy sources are nonrenewable (like coal and natural gas) and some are renewable (like solar and wind energy). Learn about renewable energy sources and complete the puzzle below.

- 1. **ACROSS:** _____ energy uses heat from the earth. People can use the heat to warm buildings or to generate electricity.
- 2. **DOWN:** _____ energy is produced through panels that convert sunlight into electricity.
- 3. **DOWN:** _____ is energy produced from moving water. The power plant is typically located on or near a water source.
- 4. **ACROSS:** _____ energy uses tall turbines with blades to collect kinetic energy.
- 5. **DOWN:** _____ is organic material that comes from plants and animals; it contains stored energy from the sun and when burned, uses chemical energy that is released as heat.



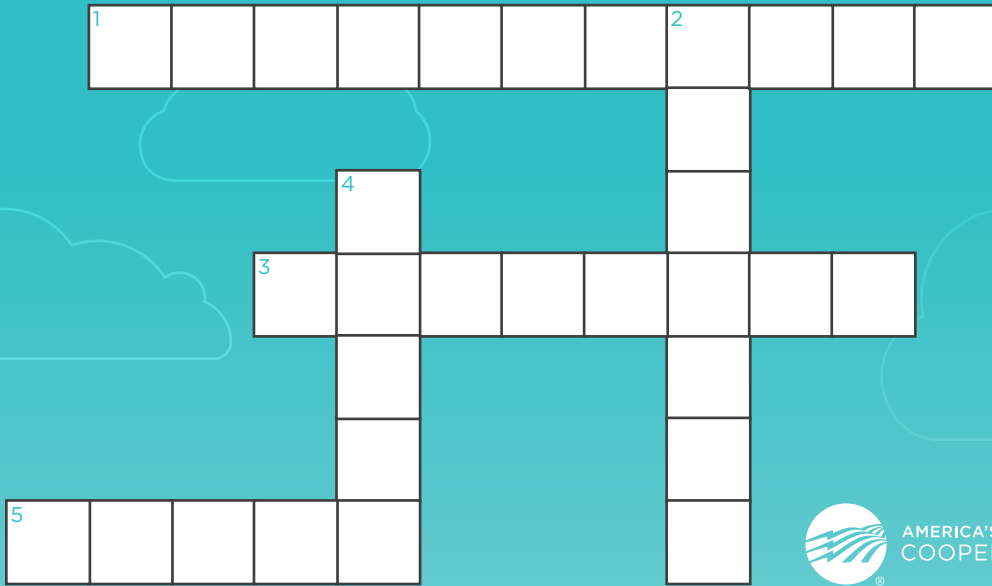
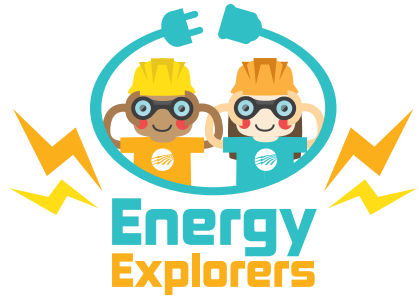
ANSWER KEY:
1. ACROSS: GEOTHERMAL; 2. DOWN: SOLAR; 3. DOWN: HYDROPOWER;
4. ACROSS: WIND; 5. DOWN: BIOMASS.



AMERICA'S ELECTRIC COOPERATIVES

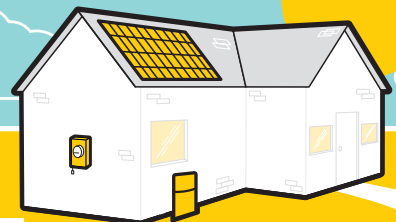
HOW SOLAR PANELS WORK

Did you know energy from the sun can be used to create electricity? Complete the crossword puzzle below to find out how! Use the answer key if you need help.



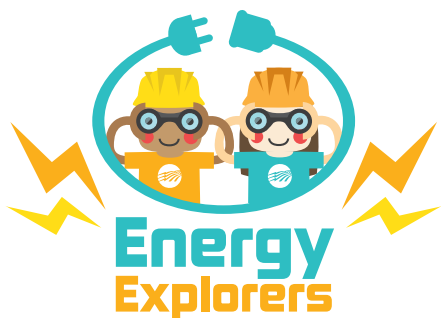
AMERICA'S ELECTRIC
COOPERATIVES

1. **ACROSS:** Solar panels contain photovoltaic cells that convert sunlight into _____.
2. **DOWN:** Sunlight hits the solar panels and generates a direct _____, or DC.
3. **ACROSS:** The direct current flows to an inverter, which _____ it to an alternating current, AC. (This is the kind of electricity we use in our homes.)
4. **DOWN:** The alternating current flows from the inverter to the home's breaker box, where it's used to _____ appliances and other electrical items in your home.
5. **ACROSS:** If the _____ panels generate more electricity than the home needs, the unused electricity is sent back to the power lines, or electric grid.



ANSWER KEY

1. ACROSS: ELECTRICITY
2. DOWN: CURRENT
3. ACROSS: CONVERTS
4. DOWN: POWER
5. ACROSS: SOLAR



WIND ENERGY WORD SEARCH

Did you know wind can be used to generate electricity?

The wind blows, turning the blades on the wind turbine, which turns the generator inside the turbine – this produces electricity.

Circle the words associated with wind energy in the puzzle below.

E A H Q Z A T A J J R R D B G
Z J C B X U Q K K T Y E I F W
P T D H R S P I N G Y W M E I
U H F B S D J T Y T G O W X N
A G I X P X Q H I Y J P S A D
Y N E I C I C C M L X O P W F
E G T N Y D I Q P D I V U R A
U Q R F E R E N E W A B L E R
A C X E T R S E D A L B D Z M
F E V C N A A W J B Z N C G W
Q E E F S E C T Y S I B S U Q
G L U W Q X C I O W F J C D R
E P S T O Y H O Y R P U X S C
F B F A K W V B W C N F B Q O
K X H S E G N M S C R V D R N

Word Bank

TURBINE
WIND
ELECTRICITY
BLADES
POWER
WIND FARM
SPIN
RENEWABLE
GENERATOR
ENERGY

Fun Fact

Wind farms are built in flat, open areas where the wind blows at least 14 miles per hour.



AMERICA'S ELECTRIC
COOPERATIVES



APPLIANCE WORD SEARCH

Did you know major appliances account for a large portion of your home's energy use?

Circle the names of all major appliances in the puzzle below.
Use the word bank for clues!



AMERICA'S ELECTRIC
COOPERATIVES

R E T A E H R E T A W H C E R
D I S H W A S H E R E X N C E
M T N C O R B O C A I I L P F
I V X E H U D P T U H O Y D R
C K G L V H K E H C T H A K I
R S X T R O R V A H C Q A D G
O I T J Z G T M E H U M J W E
W H P J W E G S K Z G V M N R
A I R C O N D I T I O N E R A
V O N V I R Z A Q C N Q I Q T
E C M H Y E V O T S I F D N O
Y N S E Y H N L L E X F N V R
J A R Y N S N I U Y Y T S S K
W O Y G Z L X X X I H R C L F
P Q I I Z N S H D Y X N G L C

REFRIGERATOR

WASHING MACHINE

CLOTHES DRYER

DISHWASHER

MICROWAVE

OVEN

AIR CONDITIONER

HEATER

STOVE

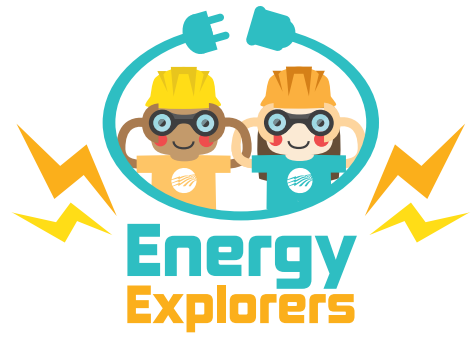
WATER HEATER

WORD BANK

ENERGY SAVINGS WORD SEARCH

Did you know there are many ways you can help save energy in your home?

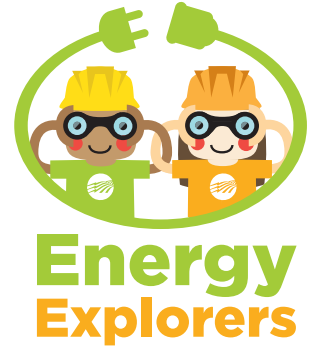
Read the energy efficiency tips below and circle the **bolded** words in the puzzle.



O	E	S	P	W	F	W	A	T	E	R	S	Y	E	S
A	L	L	R	S	A	E	T	D	E	I	A	L	S	R
T	E	X	K	E	J	T	O	G	H	C	E	P	X	E
L	C	O	O	G	G	Z	E	N	X	C	N	M	N	W
B	T	B	F	M	X	R	R	R	T	B	X	Q	K	O
G	R	I	S	M	M	R	A	R	H	C	L	I	D	H
X	I	S	Y	K	Y	E	O	H	X	E	V	A	F	S
I	C	B	X	X	I	N	Y	B	C	N	A	P	J	I
A	I	G	Y	Z	I	H	F	H	X	C	F	T	Y	E
U	T	U	N	C	W	U	Y	X	Z	O	M	B	E	S
U	Y	Z	S	E	M	F	P	O	R	V	N	V	T	R
R	E	F	R	I	G	E	R	A	T	O	R	H	E	Q
E	V	J	M	Q	S	D	M	D	F	V	G	N	Y	L
W	M	E	O	F	P	N	T	K	W	I	H	X	Q	I
G	N	I	H	T	O	L	C	R	L	S	S	B	R	D

- Turn off **lights** any time you leave a room.
- Keep the **refrigerator** door closed to save energy.
- Wash **clothing** in cold water to reduce the load on your **water heater**.
- Unplug items that consume **electricity** even when they're not in use, like cell phone **chargers** and coffee makers. These are known as "phantom load" **electronics**.
- Take **showers** instead of baths – showers require less **water** use.

ENERGY CONSERVATION TIPS FOR KIDS!



Did you know there are small things you can do to help your family conserve energy at home? Fill in the blanks below to learn how you can help. Use the word bank below if you need a hint!

- 1 Turn the _____ off while you're brushing your teeth. You can save several gallons a month just by taking this simple step.
- 2 Any time you leave a room, remember to turn off the _____. Ask your parents if they use LED lights, which save the most energy!
- 3 With the help of your parents, _____ glass, plastic, paper and aluminum items.
- 4 When the heat or air conditioning is running, always keep _____ to the outside closed.
- 5 Take short _____ instead of baths to conserve water use.

Word Bank

Showers
Doors
Water
Recycle
Lights



ELECTRIFYING WORD SEARCH!

Can you find the words associated with
electricity in the puzzle below?
Use the word bank if you need a hint!



Y R X B P O S T X K C G W A E
E T E U L X B I K W B A P G W
X B I W N P L U K L T B A L Z
A X I C O K U C V T K T H J L
E N E C I P B R S Q L A T P O
B P I Q H R C I S O L H J O E
M F A U R A T C V M U D E T E
W K X J L R R C I N Y G R Q M
I N B R S W U G E J J D S S R
J F E J I X X C E L M M W Z L
C U R R E N T T T F E X I L B
R X O P P P G S E R I W T I K
O M O B R A I Q O S Q E C A R
D Q T H C L L A L W B R H E Z
H T Z P H G G V V O C J I S S

Word Bank

ELECTRICITY

CIRCUIT

WATTS

CURRENT

WIRES

POWER

SWITCH

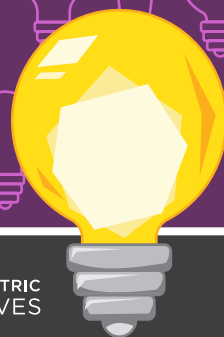
VOLTAGE

BULB

CHARGE

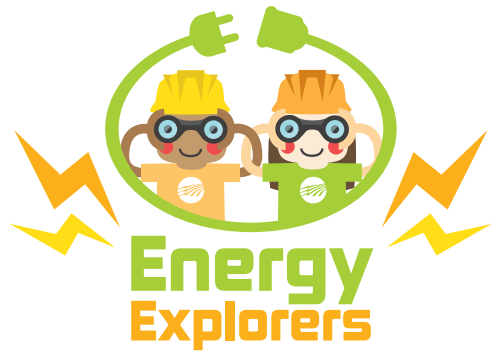


AMERICA'S ELECTRIC
COOPERATIVES



SPRING EFFICIENCY QUIZ

Spring is just around the corner! Take this quiz to learn how you can help save energy around your home. Hint: Check your work in the answer key below.



1. Sealing air leaks around _____ saves energy and keeps your home comfortable.

A) doors B) windows C) both A and B

2. Unplug devices and electronics that consume energy even when they're not in use, like _____.

**A) refrigerators B) cell phone chargers
C) dishwashers**

3. Ceiling fans cool people, not rooms, so turn them off when you leave the room to save energy.

A) True B) False

4. LED bulbs typically use _____ less energy than incandescent light bulbs.

A) 25% B) 50% C) 75%

5. Planting _____ around your home can block unwanted heat from the sun.

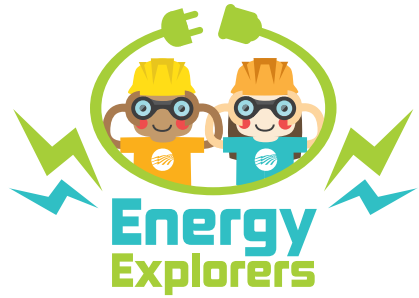
A) flowers B) shade trees C) vegetables



Answer Key: 1. C 2. B 3. A 4. C 5. B

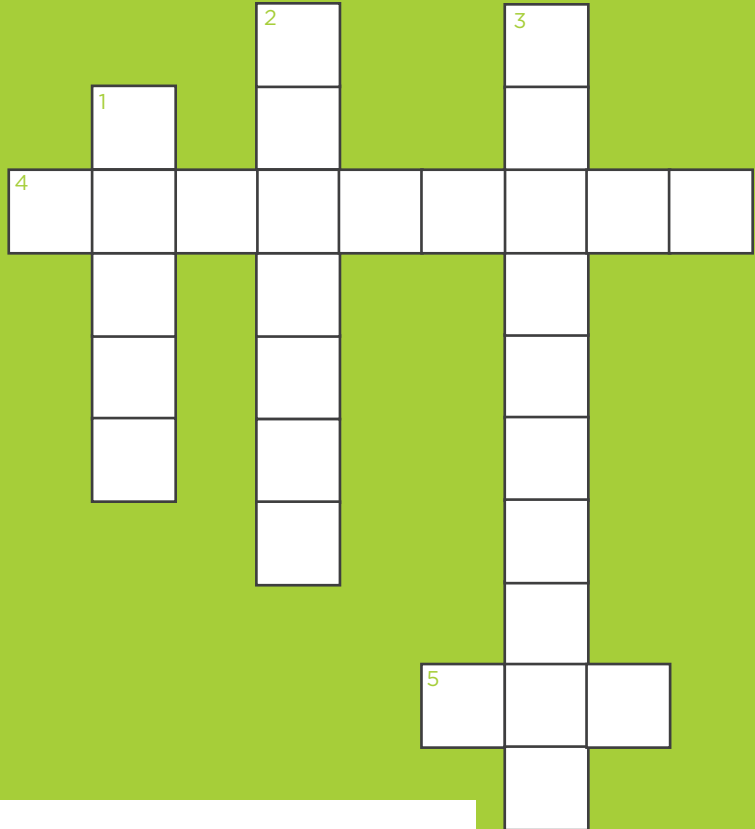
CO-OP MONTH CROSSWORD

October is National Co-op Month! Complete the crossword puzzle below to learn about ways co-ops are unique. Need a hint? Use the work bank below.



WORD BANK:

LED
MEMBERS
LOCAL
COMMUNITY
PRINCIPLES



CLUES:

1. **DOWN:** Co-ops are _____ organizations and businesses, so they understand the communities they serve.
2. **DOWN:** Co-ops don't have customers; they have _____.
3. **DOWN:** All co-ops operate according to the same set of seven cooperative _____.
4. **ACROSS:** "Concern for _____" is the seventh cooperative principle.
5. **ACROSS:** Co-ops are _____ by the members they serve.

ANSWER KEY

1. DOWN: LOCAL
2. DOWN: MEMBERS
3. DOWN: PRINCIPLES
4. ACROSS: COMMUNITY
5. ACROSS: LED

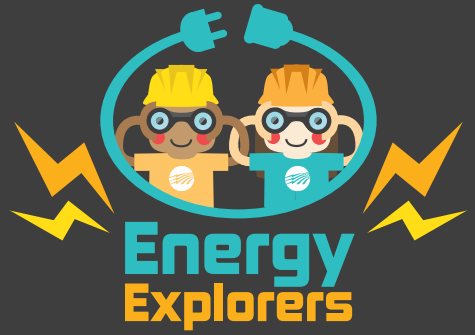


AMERICA'S ELECTRIC
COOPERATIVES

FALL SAFETY TIPS FOR KIDS!

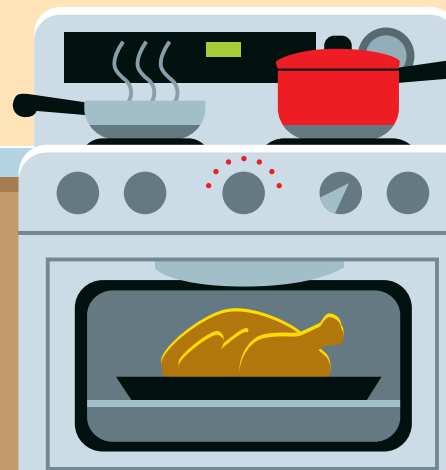
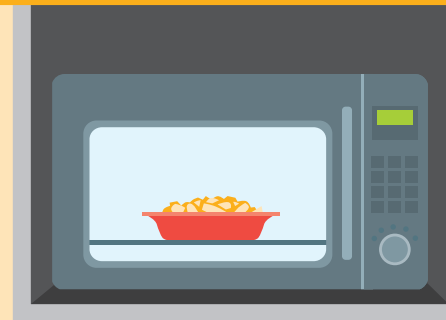
Fall is finally here! The leaves are changing, the weather is cooler and the holidays are just around the corner. But Fall also brings a higher risk of home fires and electrical safety hazards.

Read the safety tips below and fill in the blank with the correct term from the word bank.



AMERICA'S ELECTRIC
COOPERATIVES

1. Candles and _____ should only be used by adults.
2. An adult should always stay in the kitchen when something is _____.
3. Smoke alarms should be tested every _____ to ensure they are working. Batteries should be replaced at least once every _____ or right away if they start to "beep."
4. Make sure all _____ are blown out before leaving a room.
5. Keep any items that can burn away from the stove, toaster and other cooking _____.



WORD BANK

APPLIANCES
COOKING

YEAR
MATCHES

CANDLES
MONTH

Answer Key: 1. matches 2. cooking 3. month 4. candles 5. appliances