

ELECTRIFICATION NATION



ELECTRIFICATION NATION

EDUCATIONAL CONCEPTS

- How electricity is generated
- What clean energy is
- What a carbon footprint is
- What communities and families can do to conserve energy

Evie Wander is super excited to be a contestant on the adventure racing show *Electrification Nation*.

Emcee Host Malone tells Evie she will be competing in the race against Ed Start. Evie and Ed went to school together and Evie knows that Ed will stop at nothing to win.

Evie first finds herself at a hydroelectric dam and meets Renee Uable, a worker at the dam. Renee tells Evie all about renewable energy resources like the sun, the wind and moving water.

Evie then meets Decatur Creator. Decatur knows a

thing or two about resources and how we use them every day. Evie realizes that humans leave behind a carbon “footprint” every time they use carbon-based resources.

Finally, with the help of students, Evie realizes we can all save energy.

Have Evie and her student helpers learned enough to defeat Ed Start and win the game show? Find out in *Electrification Nation*!

WORDS TO KNOW

Carbon Footprint	A measure of the carbon dioxide emitted due to the use of fossil fuels by a particular person
Conserve	To save or use wisely
Efficient	Producing very little waste
Electricity	A useful source of energy used in many ways
Energy	The ability to do work and the force that makes things change
Clean Energy	Energy derived from using renewable resources
Electrification	The process of replacing technologies that use fossil fuels with ones that use electricity as a source of energy
Non-Renewable Resource	A natural resource that is limited; once used, it is gone
Renewable Resource	A natural resource that keeps coming back again and again
Resource	Something we use to make electricity, like coal, natural gas, water, solar energy or wind
Waste	To use more than necessary

RENEE UABLE



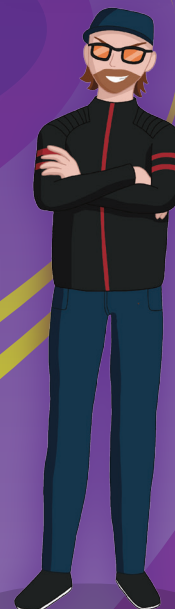
HOST MALONE



EVIE WANDER



ED START



DECATUR CREATOR



EVIE'S WORD FIND



You and your friends can find and circle all of the words from the list below.

Do you remember what the words mean? Review their meanings on the inside front cover.

ELECTRICITY

ENERGY

CARBON FOOTPRINT

ELECTRIFICATION

RENEWABLE

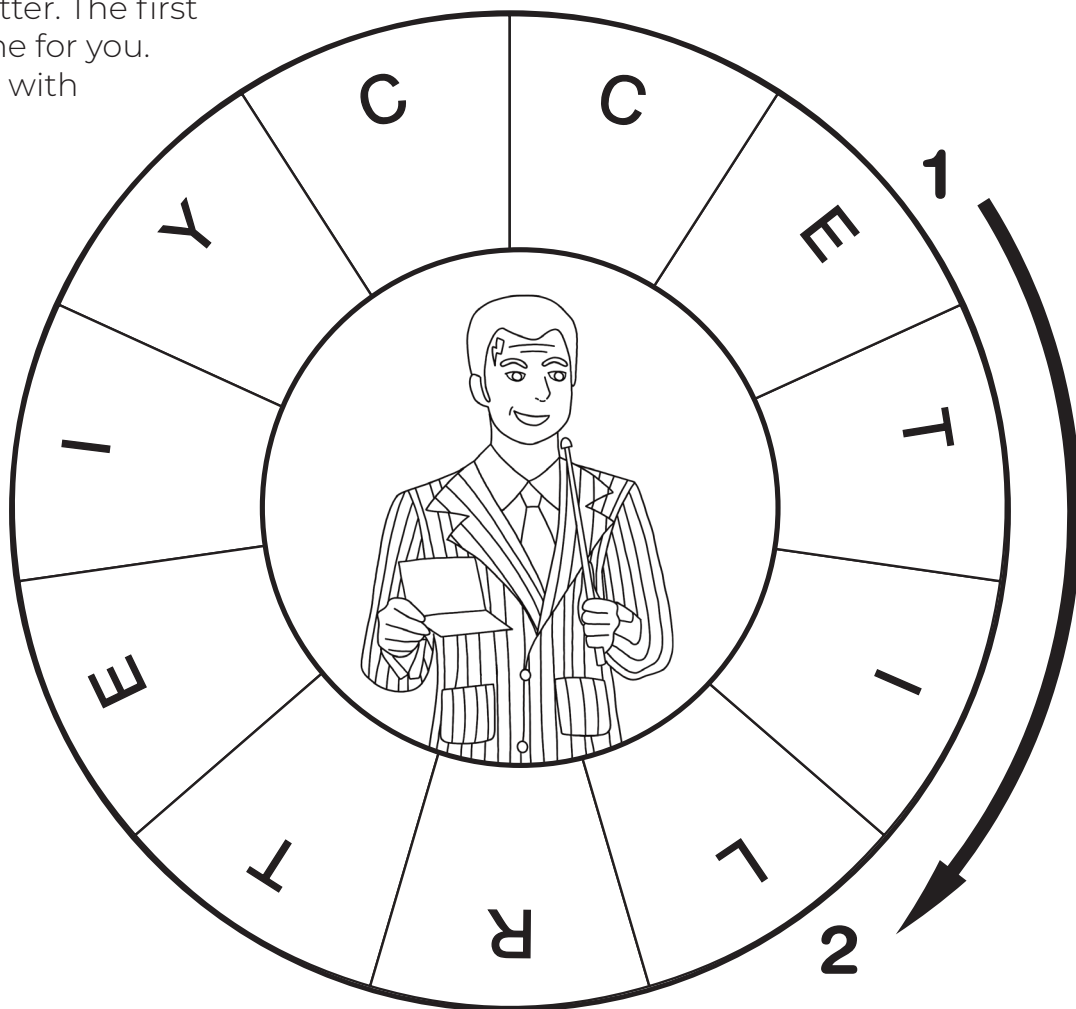
RESOURCE

WASTE

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

WHEEL FUN

Go around the wheel and write down every third letter. The first two are already done for you. Share the message with one other person.



DON'T WASTE

EL _____

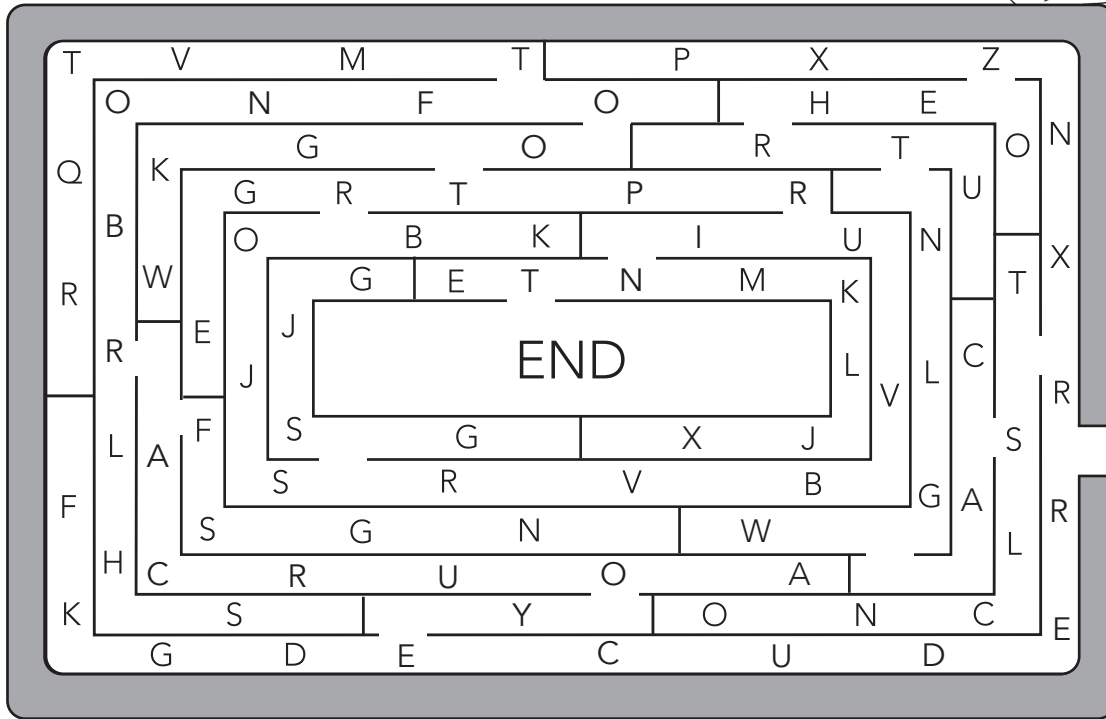
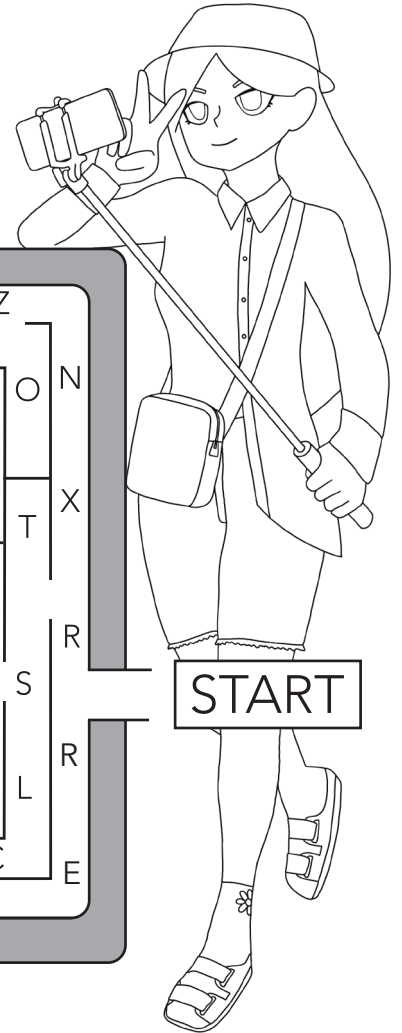
1

2

DECATUR CREATOR'S

MAZE MAYHEM

Steer your character through the maze and write the letters in the order they appear on the lines below. Read the sentence out loud once you've completed it.



ED START'S

MATH MESSAGE

Do the math and fill in the spaces below to discover a way to save energy. Read the message out loud once you've completed it.



$3 \times 10 = \square \quad E$

$17 + 17 = \square \quad G$

$14 - 7 = \square \quad L$

$42 \div 7 = \square \quad B$

$23 + 17 = \square \quad T$

$8 \times 8 = \square \quad D$

$20 \div 5 = \square \quad H$

$21 - 11 = \square \quad U$

$11 \times 4 = \square \quad I$

Using an

7 30 64

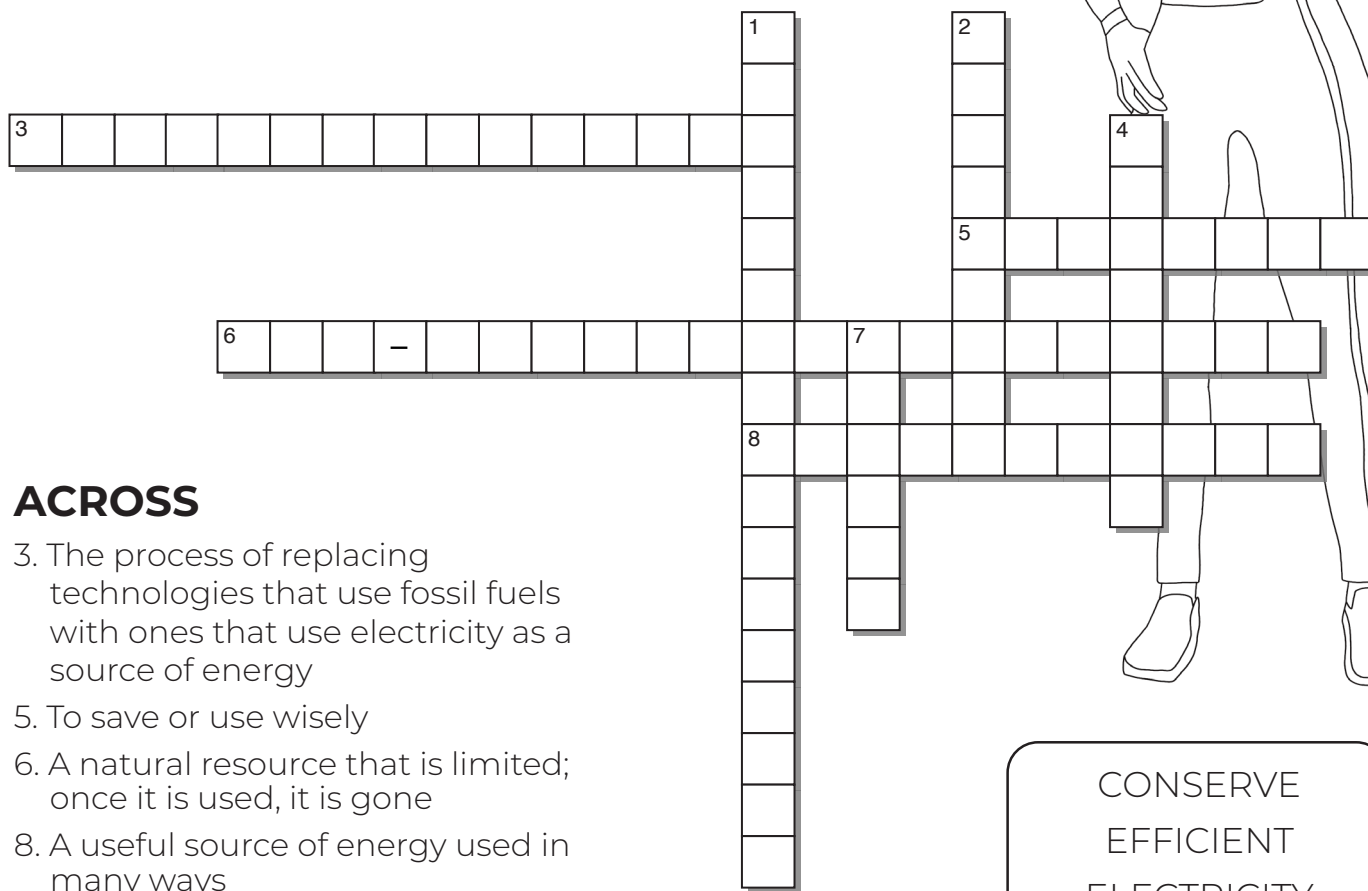
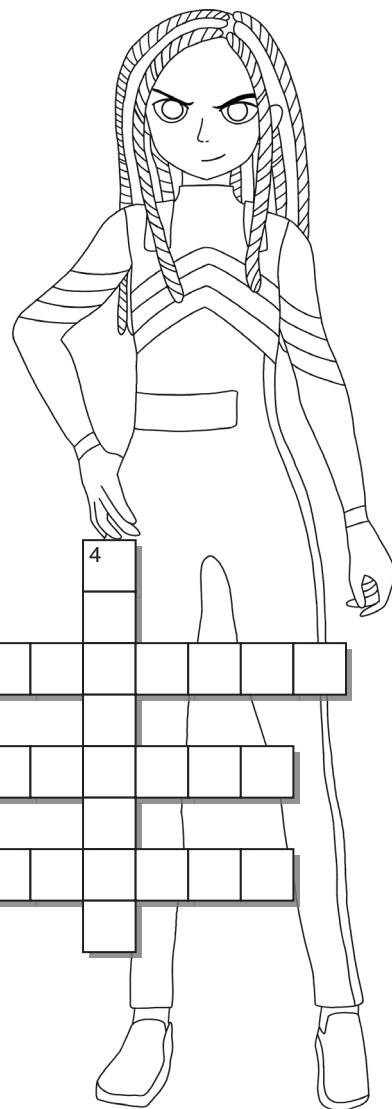
7 44 34 4 40 6 10 7 6

can save energy.

EVIE'S

CROSSWORD

Find the answer for each clue and write it in the correct space. Look at the inside front cover if you need some tips.



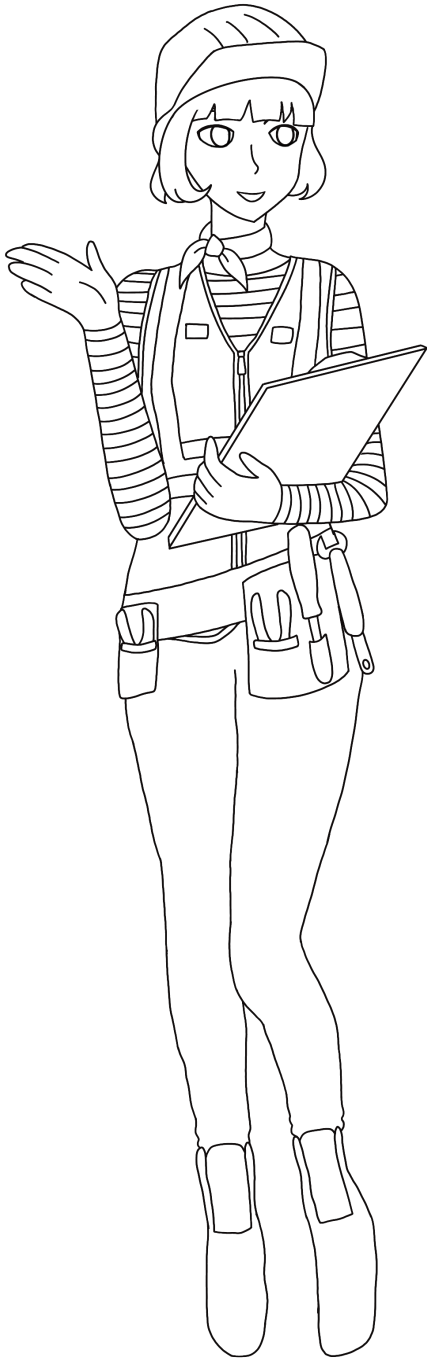
ACROSS

- 3. The process of replacing technologies that use fossil fuels with ones that use electricity as a source of energy
- 5. To save or use wisely
- 6. A natural resource that is limited; once it is used, it is gone
- 8. A useful source of energy used in many ways

DOWN

- 1. A natural resource that keeps coming back again and again
- 2. Producing very little waste
- 4. Something we use to make electricity, like coal, natural gas, water, solar energy and wind
- 7. The ability to do work and the force that makes things change

CONSERVE
EFFICIENT
ELECTRICITY
ENERGY
ELECTRIFICATION
NON-RENEWABLE
RESOURCE
RENEWABLE
RESOURCE
RESOURCE



READ WITH

RENEE UABLE

Gather your friends and then read the paragraph and answer the true/false questions.

EXTRA CREDIT

Read the article to someone else. Quiz them by asking the true/false questions.

Do you know what energy is? Energy is the ability to do work. We use energy, like electricity, to get things done every day. Electricity is made by using resources. Resources can be non-renewable or renewable. Non-renewable resources, like coal, oil and natural gas, are resources that are limited.

Renewable resources, like the wind, the sun and water, keep coming back again and again. Since some days are cloudy and sometimes the wind doesn't blow, we use a combination of non-renewable and renewable resources to make sure electricity is available when we need it!

- T/F** 1. Non-renewable resources are limited.
- T/F** 2. Energy is the ability to do work.
- T/F** 3. Wind is a non-renewable resource.
- T/F** 4. Coal is the only resource we use to create electricity.
- T/F** 5. We do not use a combination of non-renewable and renewable resources.

TAKE-HOME FAMILY ACTIVITY

ELECTRICITY COUNTS



We use electricity in a lot of different ways. We use it for light, to heat and cool our homes and to power televisions, computers and many other things.

List how many ways you use electricity in a day. Ask an adult to help you go around your house and identify all the different ways you use electricity. This is a great time to check for frayed cords and overloaded outlets.

Use a second sheet of paper if needed.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____

14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____

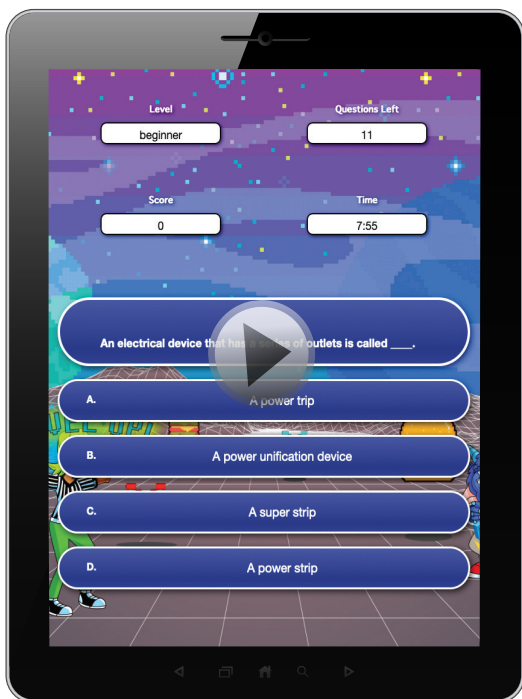
TOTAL

HEY PARENTS, STUDENTS AND TEACHERS

GO TO:

NTC
playworks.com

After enjoying the show, you can find additional fun learning activities at www.NTCplayworks.com.



HERE'S HOW:

1. Go to NTCplayworks.com.
2. Select your state and program.
3. Use the digital activities, videos and games.



BROUGHT TO YOU BY:



Xcel EnergySM

