

Mini 4-H



Electric

Updated 6/2016

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MINI ELECTRIC

It's fun to learn about energy, especially renewable energy. In your electric project, you will learn about solar power as one source of renewable energy.

REQUIREMENTS

1. Read all the important information in this book.
2. Complete the fun activities in this book. Then have an adult check your work. Note: this book does not get turned in with the project at the fair. You only need to turn in the record sheet on the very last page when you turn in your project at the fair.
 - a. For Kindergarten activity "Conductors and Insulators" and "Summer Maze"
 - b. For First Grade: activity "What is Solar Energy?" and "Summer Search"
 - c. For Second Grade: activity "Renewable Energy- Wind Turbines" and "Energy Types"
3. In this project, you should obtain a grade specific kit from the extension office. With the help of an adult, assemble the kit.
 - a. For Kindergarten: Energy Stick
 - b. For First Grade: Solar car
 - c. For Second Grade: Windmill

We hope you enjoy working with your Mini 4-H Electric project this year. Keep up your enthusiasm and when you're in the 3rd grade you can join in more fun by joining a 4-H club and continue with the electric project or enroll in other projects.

If you have any questions or problems with your Mini 4-H project call or stop in the Extension Office (8-4 M-F). We are located on the 4-H Fairgrounds in the red brick building. Our phone number is 765-480-0750

See you at the 4-H fair!

The 4-H Pledge

A pledge is a promise you make to yourself and to the people around you.

I pledge my head		to clearer thinking
My heart		to greater loyalty, to use
my hands		to larger service
my health		to better living

The 4-H motto is "To make the best better."

How to be a "Super Energy Saver"

FOLLOW THESE SIX SIMPLE STEPS!



- 1 Turn off all the lights when you leave the room.

- 2 Shut down the computer when you are not using it.

(If you need help, ask mom or dad.)



- 3 Unplug electronics like cell phones, video games and televisions when not in use.

- 4 Set your thermostat to 78° in the summer and 68° in the winter.



- 5 Don't hold the refrigerator door open for long periods of time.

- 6 Change the light bulbs. Help your mom or dad change regular light bulbs to CFLs like Charlie.

FIVE RULES FOR ELECTRICAL SAFETY

1. Always ask an adult for help when you need to do something that uses electricity.
2. Don't yank or pull cords from an electrical outlet.
3. Never overload outlets with too many plugs.
4. Keep electrical stuff away from water. Water and electricity don't mix.
5. Never touch a power line, especially if there is one that may have fallen down.



www.touchstoneenergykids.com

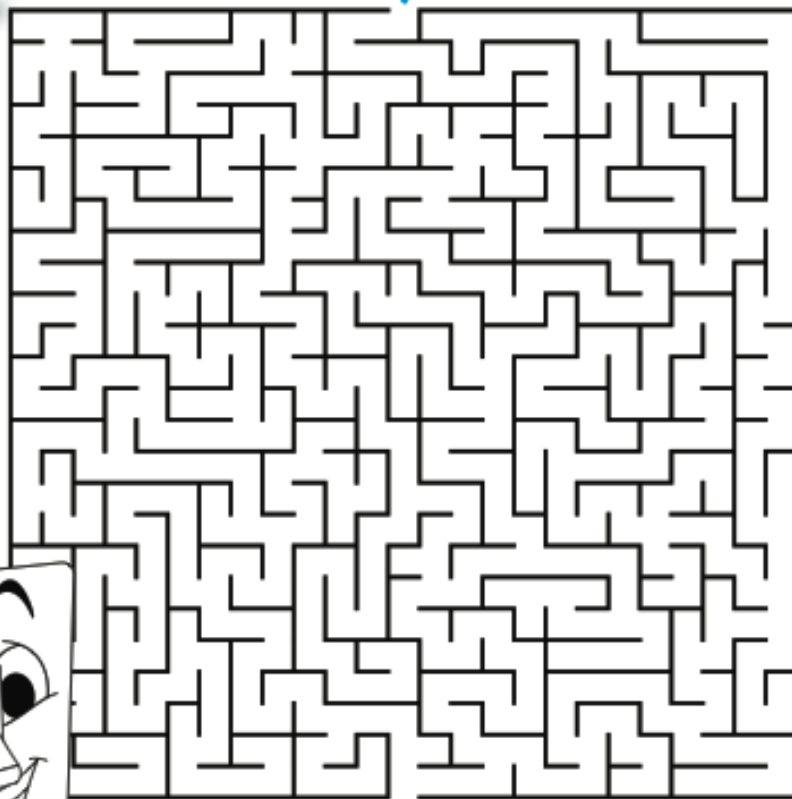




CFL Charlie's Summer Maze

Hi kids! CFL Charlie here. One of my favorite things about summer is playing outside! I make sure that the lights are off inside the house before I go out. Can you help me check if the lightswitch is turned off? We have to go through the maze first. Let's go!

Start! Good Luck!



Finish!

Awesome! Great job!



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CFL Charlie's Summer Search

Hey kids! CFL Charlie here. Looking to stay cool over the summer? Here are some tips on how to do that while saving energy.

- 1) Turn your thermostat up a few degrees - it can save you a lot of money! If you're still hot, turn on a ceiling fan or have a popsicle.
- 2) Make sure to turn off things like your TV and shut down your computer - those make a lot of heat if you leave them on.
- 3) Finally, make sure to replace your regular light bulbs with CFL or LED light bulbs - these save energy and aren't as hot.

l i g h t b u l b s f e o
p o p s i c l e e u f n t
l n w o d t u h s l o e a
e i l r a h c p o o n r e
d n l m t c f t e o r g h
n a f g n i l i e c u y l
i t h e r m o s t a t a a

Charlie
Cool
Energy
Thermostat

Ceiling Fan
Popsicle
Turn Off
Shut Down

Heat
Light Bulbs
CFL
LED



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WHAT IS SOLAR ENERGY?

Solar energy comes from the sun. The sun is an important resource, as it helps sustain life. Without the sun, our planet would have no life. Through the use of technology, we are able to harness the energy from the sun to convert it to electricity.



SOLAR CELLS are tools that change light energy from the sun and other light sources into electricity. Many calculators use solar cells to power them.



A **SOLAR PANEL** is a group of solar cells connected to form a large, flat surface.

THINK AND DRAW

What do you think a car powered by the sun would look like? Draw a picture.

A large, empty rectangular box with a thin red border, intended for a student to draw a picture of a solar-powered car.

CONDUCTORS AND INSULATORS

A **conductor** is a material that allows electricity to flow through it.

An **insulator** is a material that electricity cannot flow through.

Project Directions:

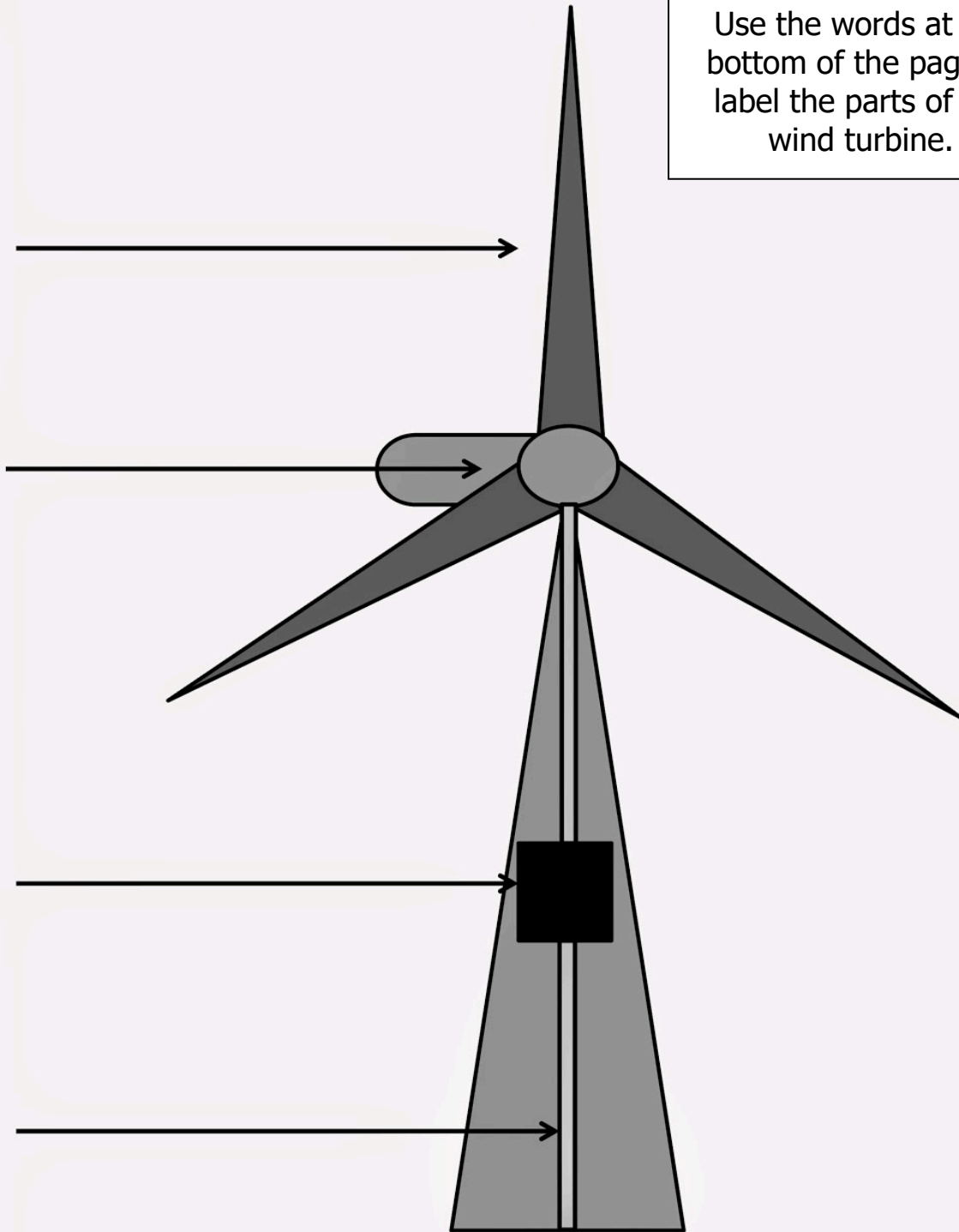
To find out if an object is a conductor or insulator, use your energy stick to see if it lights up!

Once you have determined if the item is a conductor or insulator display the items you tested along with your findings.

<u>Object</u>	<u>Conductor or Insulator?</u>
Rubber Band	
Penny	
Paper Clip	
Toothpick	
(Your Choice)	
(Your Choice)	

Renewable Energy - Wind Turbines

Use the words at the bottom of the page to label the parts of the wind turbine.



Cable

Generator

Blades

Computer System

Energy Types

Directions: Use the words below to answer the questions and fill in the crossword puzzle.

BATTERY

RENEWABLE

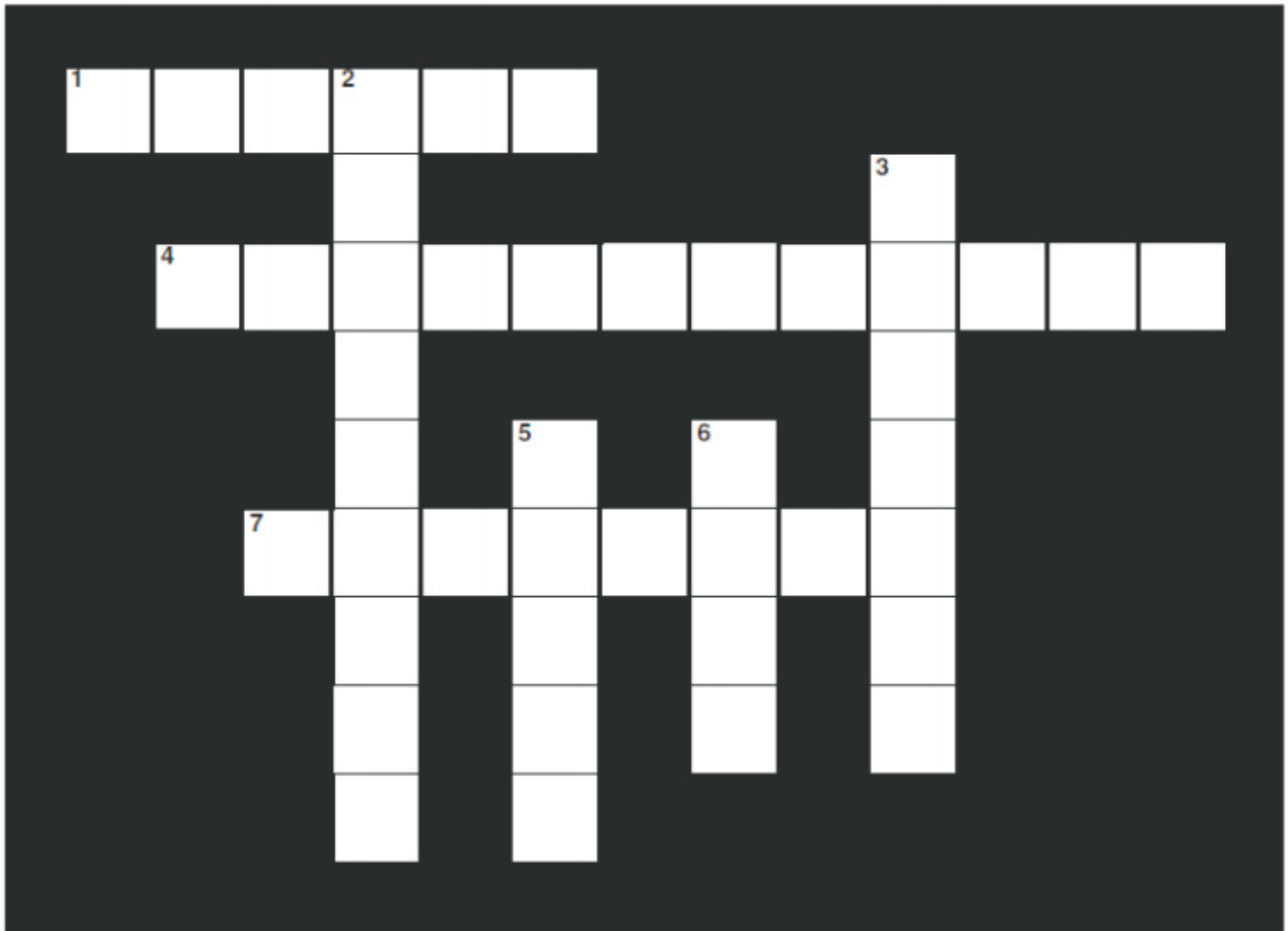
ENERGY

SOLAR

GASOLINE

WIND

NONRENEWABLE



ACROSS:

1. What we need to work and play
4. An energy source that can run out
7. The energy source we use in a car

DOWN:

2. An energy source that will never run out
3. An energy source used in flashlights and cell phones
5. Energy that comes from the sun
6. Energy source that uses windmills

Boone County Mini 4-H
Electric Project Record Sheet 20____
Please complete and bring with 4-H Exhibit.

Name: _____ Grade: _____

I chose to exhibit

_____.

I like making

I learned

My favorite part of Mini 4-H this year was

List who helped you with the project.
