



**UNIVERSITY
OF ALBERTA**

Future Energy Systems

The Energy Adventures of Tommy and Remi

The Mystery of the Glowing Light

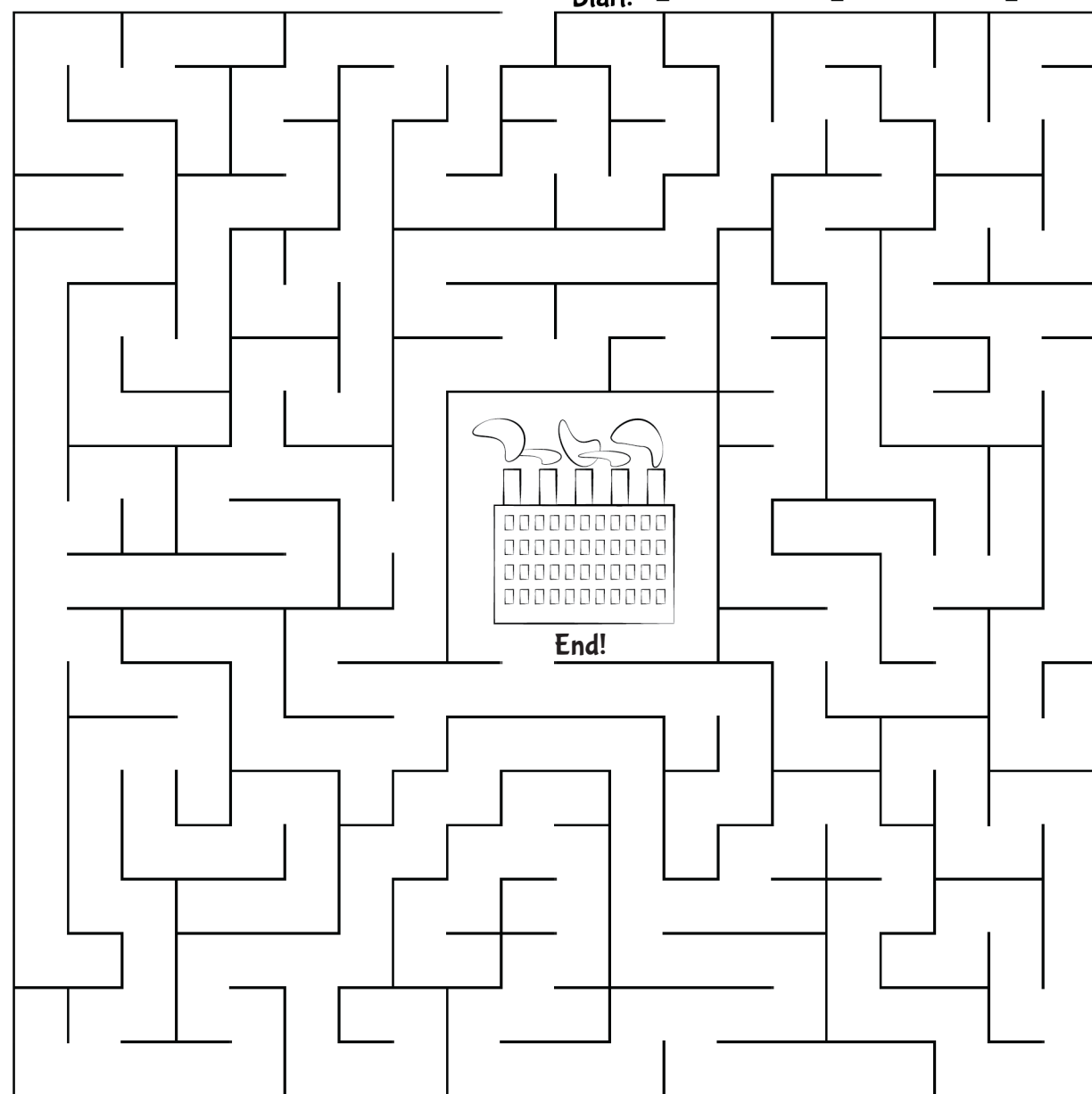


Activity Book



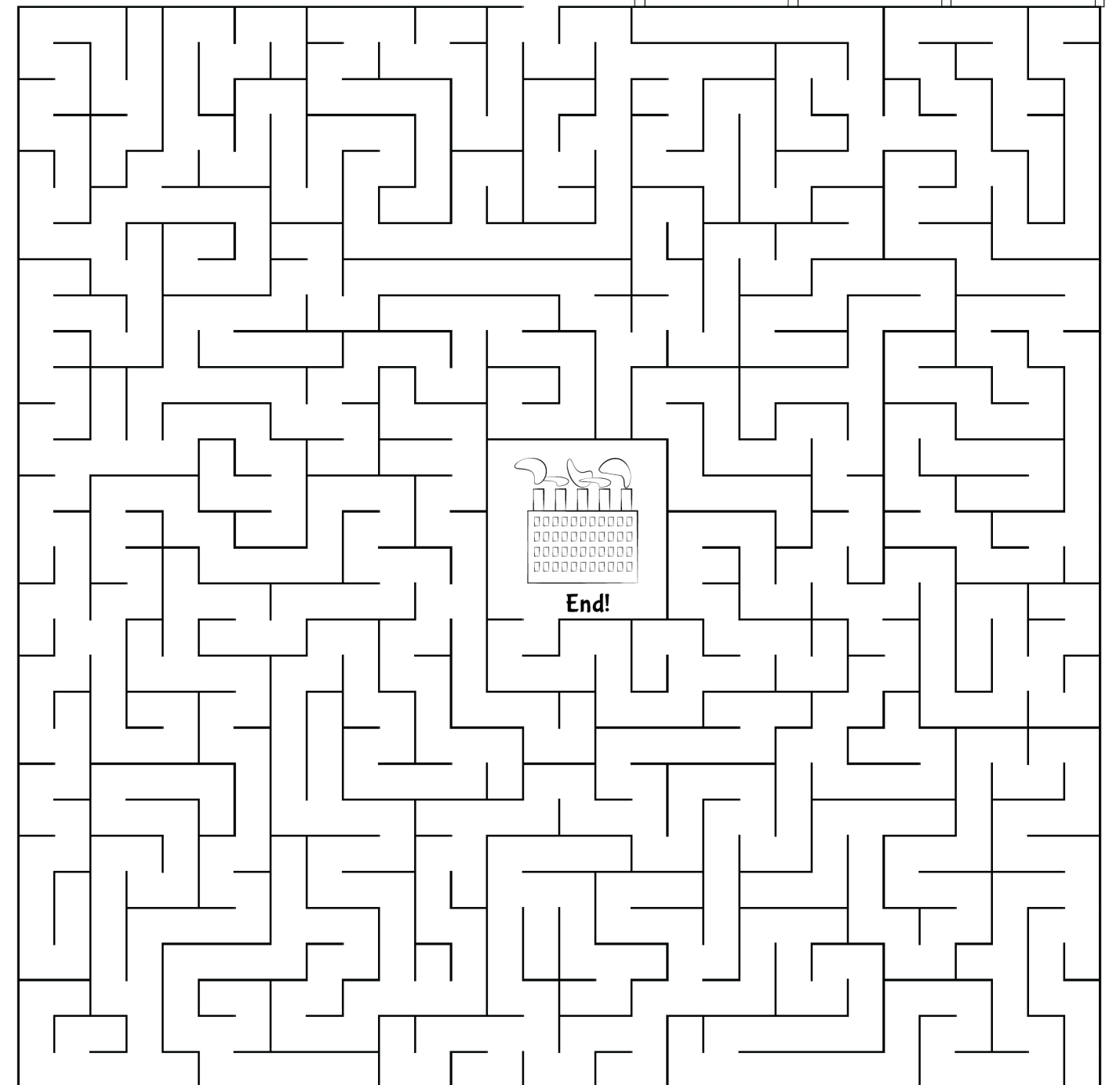
The Energy Adventures of Tommy and Remi

 Help Tommy and Remi get to the power plant! 



The Energy Adventures of Tommy and Remi

 Help Tommy and Remi get to the power plant! 



Energy Adventure Word Search

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

ATOMS
 BATTERY
 CLIMATE
 CURRENT
 ENERGY
 GRID
 LIGHT



MAGNET
 PLUG
 REDUCE
 REGINALD
 REMI
 TESLA
 TOMMY



TURBINE
 USE
 VOLTAGE
 WIRES
 WEATHER

Energy Adventure Word Search

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

ADVENTURE
 ATOMS
 BATTERY
 CLIMATE
 CURRENT
 DISTRIBUTION
 ELECTRICITY
 ELECTRONS
 ENERGY
 GENERATOR
 GREENHOUSE GASES
 GRID



LIGHT
 MAGNET
 NONRENEWABLE
 PLUG
 POWER PLANT
 REDUCE
 REGINALD
 REMI
 RENEWABLE
 TESLA
 TOMMY
 TRANSFORMER
 TRANSMISSION



TURBINE
 USE
 VOLTAGE
 WIRES
 WEATHER



Build Your Own Electrical Circuit



You may have seen the lights in Reginald's house. They run on an electrical circuit. A circuit is a pathway for electrons to flow constantly.

A simple circuit has 4 parts:

1. Power source, like a battery
2. Conductors, like wires that the electrons flow along
3. Load, like a light
4. Switch, which opens or closes the circuit

A circuit can be closed or open. Only when it's closed can the electrical current flow. When it is open, there is a break somewhere in the circuit.

Here are the supplies you'll need:

- 9 volt battery
- Tinfoil (Folded Into Strips)
- LED light
- Metal paperclip
- Metal thumb tack
- Tape

Are you ready to build your own circuit?

1. Fold tinfoil into strips.

2. Make a square with the strips, like you see here. Make sure to leave a gap for your switch.

3. Tape down the square to your table.

4. Place the light bulb at the top. Tape the wire to the tinfoil on both sides.

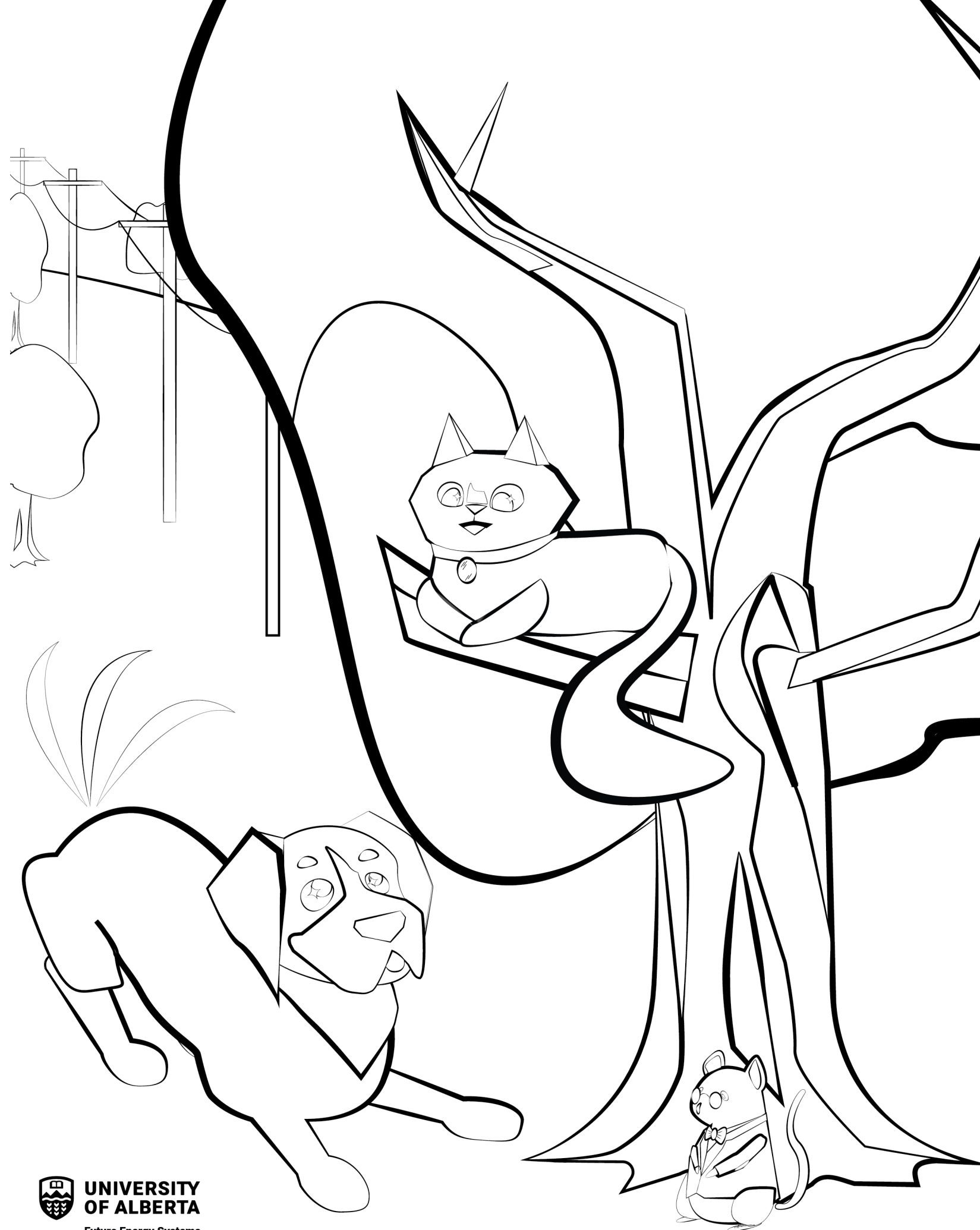
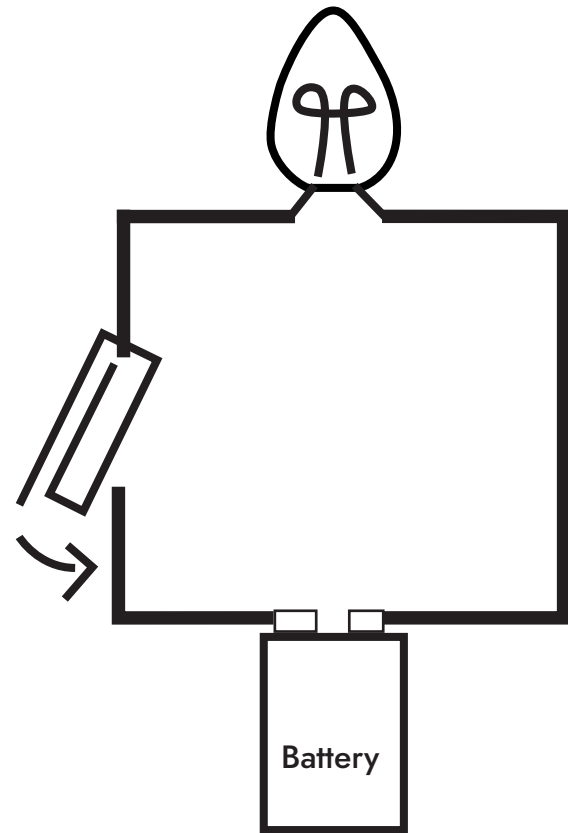
5. Place the battery at the bottom. Make sure the two sides of the battery (the positive and negative ends) are connected on opposite sides of the tinfoil.

6. Watch what happens to your light.

7. Remove the battery and place your paperclip over the gap you left and secure with the thumb tack (push the tack through the tinfoil with the pointy side up, but be careful!).

8. Move the paperclip to different positions and return the battery to the bottom.

9. What happens to the light when the paperclip touches both sides of the tinfoil?



The Energy Adventures of Tommy and Remi



The Mystery of the Glowing Light Grade 3 and Under



Tommy and Remi learned about many sources of energy that can be used to generate electricity. Choose a source and list one good thing and one bad thing about it.

Explore four rooms in your home and find at least three things that use electricity.

Room: Items:	Room: Items:
Room: Items:	Room: Items:

In each of those rooms, count the number of switches and wall outlets.

Room: Switches: Wall outlets:	Room: Switches: Wall outlets:
Room: Switches: Wall outlets:	Room: Switches: Wall outlets:

We can often waste a lot of energy by leaving the lights on or not unplugging things. List two things you can do to reduce your electricity use.

- 1.
- 2.

Try your two ways over a week. How did it go?

The Energy Adventures of Tommy and Remi



The Mystery of the Glowing Light Grade 4 to 6



Tommy and Remi learned about many sources of energy that can be used to generate electricity. Select two of them and list one benefit and problem with each.

Let's explore the energy in your house. Pick three rooms and count the number of:

Room	1	2	3
Switches			
Lights			
Wall outlets			
Other things that use electricity (list them)			

Do you notice any difference between the rooms? Why do you think there are differences?

We can waste a lot of electricity by leaving the lights on or not unplugging things. List two things you can do to reduce your electricity use at home and one thing you can do at school.

Home:

- 1.
- 2.

School:

- 1.

The Energy Adventures of Tommy and Remi

Can you spot all 10 differences between the 2 pictures?



Can you spot all 10 differences between the 2 pictures?



The Energy Adventures of Tommy and Remi



Can you find all of the objects in the campground?



Battery Pack



Light bulb



Remi



Boat



Light switch



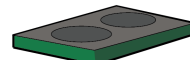
Speaker



Cell phone



Nik



Stove top



Fireflies



Pinwheel



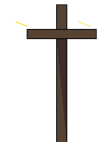
Steam



Flashlight



Generator



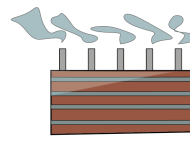
Power lines



Tommy



Kettle



Power plant



Transmission lines



Lamp



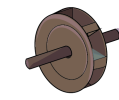
Propane tank



Lantern



Reginald



Water wheel



Can you find all of the objects in the campground?