NTC

The National Theatre for Children

CLASSROOM AND FAMILY ACTIVITIES

SMART ENERGY ACADEMY

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the Queensland Government as part of the Enable Grants Program.
This program does not represent the views, opinions, or advice of the Queensland Government.

SMART ENERGY ACADEMY

Welcome to Smart Energy Academy.

Smart Energy Academy is a live theatrical production that presents three hilarious sketches all about energy efficiency.

In the first sketch we meet Al Dente, a laid-back pizza maker at Fluffy's Spaghetti, and his new helper. Together, they struggle to make a pizza when the oven stops working. Under pressure from their boss, the stressed-out Tara Misu, Al explains all about watts, natural resources, and how electricity is generated using both renewable and non-renewable resources.

In the second sketch, John Travoltage arrives home in a burst of energy only to have his dog remind him of all the devices left on around the house. Dog explains how wasting electricity harms the environment and how renewable energy sources can help. Together, they learn the importance of turning off lights, unplugging devices, and making small energy-saving changes.

Lastly, we follow "A Day in the Life" of an ordinary school student, who, after taking on an energy-saving assignment, discovers how small actions—like turning off lights and adjusting the air conditioning—can make a big difference in conserving energy. What seems like an ordinary day turns into an energy-saving adventure!

After watching the show, enjoy this playbook and learn even more about energy efficiency.

AL DENTE

TARA MISU

JOHN TRAVOLTAGE

DOG

WORDS TO KNOW

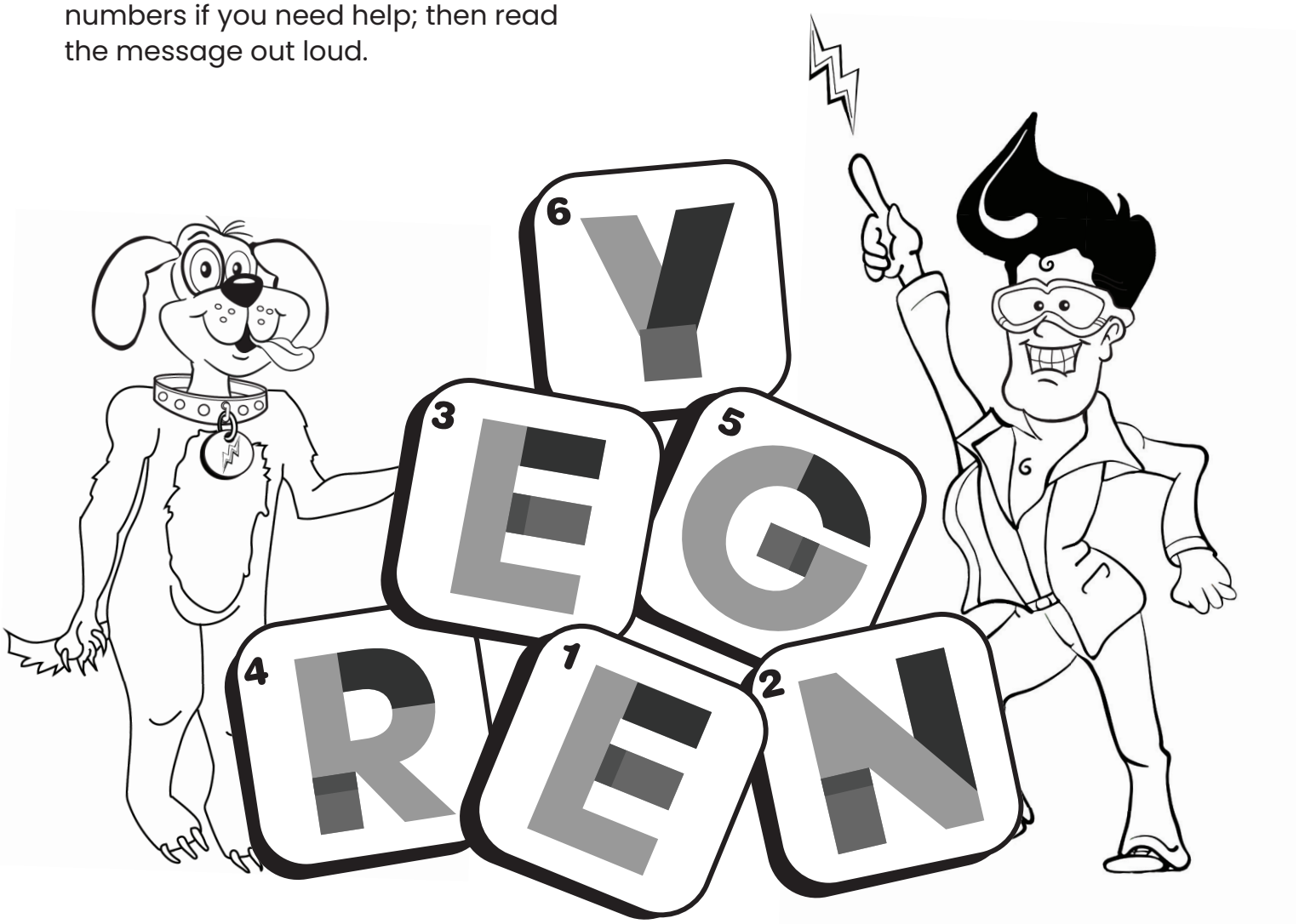
Aerator	A small attachment on a tap to save water in kitchens and bathrooms
Conserve	To save or use wisely
Efficient	Producing very little waste
Electricity	A source of energy that runs our appliances
Energy	The ability to do work and the force that makes things change
Kilowatt	One thousand watts of electricity
Kilowatt Hour (kWh)	A way to measure how much electricity you use over time
LED Lightbulb	A lightbulb that uses less energy than a regular one. LED stands for light-emitting diode
Natural Resource	A resource we find in the environment
Power Plant	A building where electricity is generated
Programmable Thermostat	An appliance that controls the temperature in your house and saves energy
Renewable Resource	A resource like the sun, the wind or moving water
Resource	Something we use to make electricity, like natural gas, water, solar and wind
Waste	To use more than necessary
Watt	A unit of electricity, used to show how much energy something uses

EDUCATIONAL CONCEPTS

- What are **ENERGY** and **ELECTRICITY**
- What are energy **RESOURCES**
- How energy is **WASTED**
- How **YOU** can save energy

John Travoltage's MIX-UP

John Travoltage has mixed up Dog's message. Unscramble the letters and fill in the spaces below to fix it. Use the numbers if you need help; then read the message out loud.

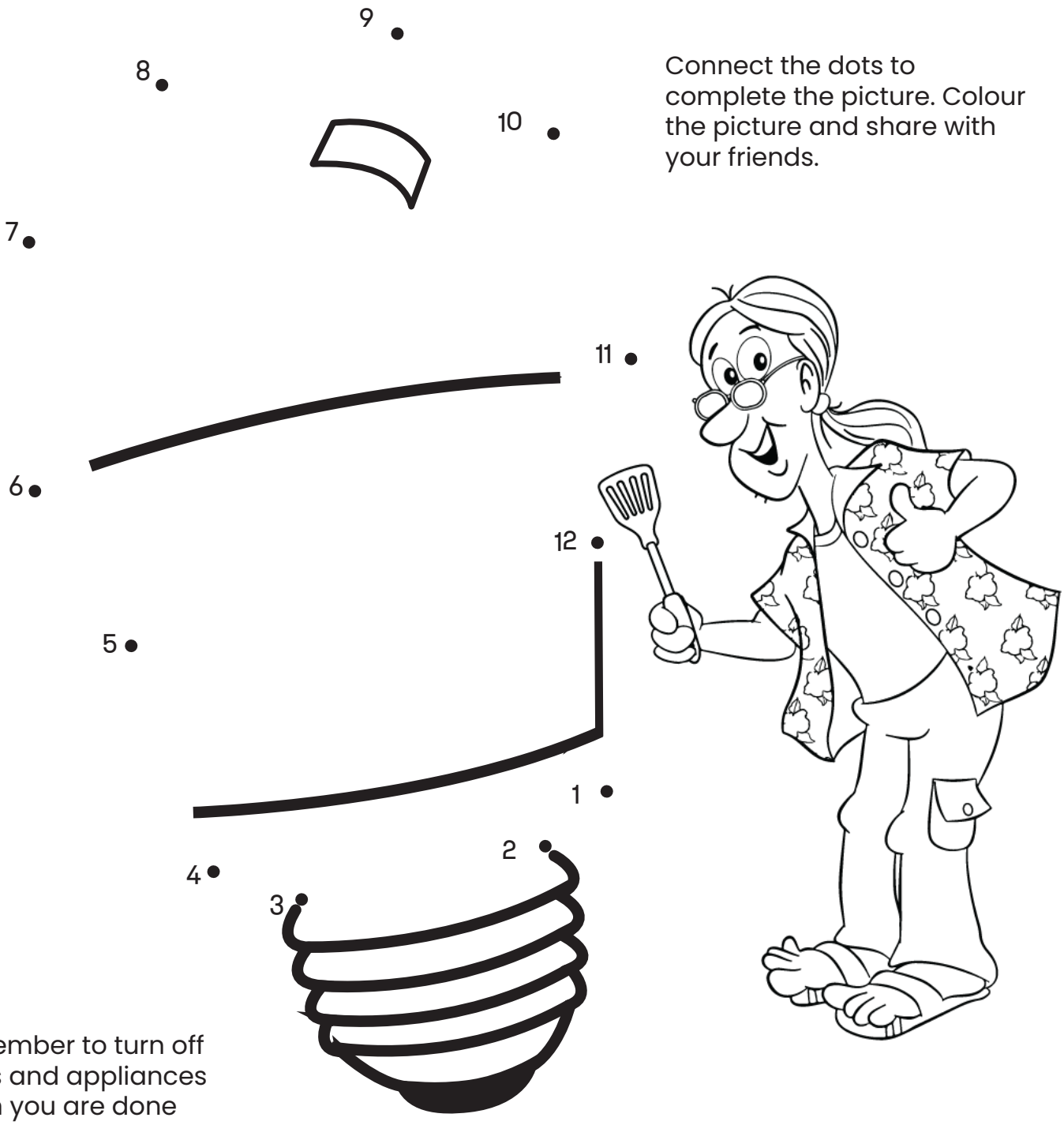


SAVE

1 2 3 4 5 6

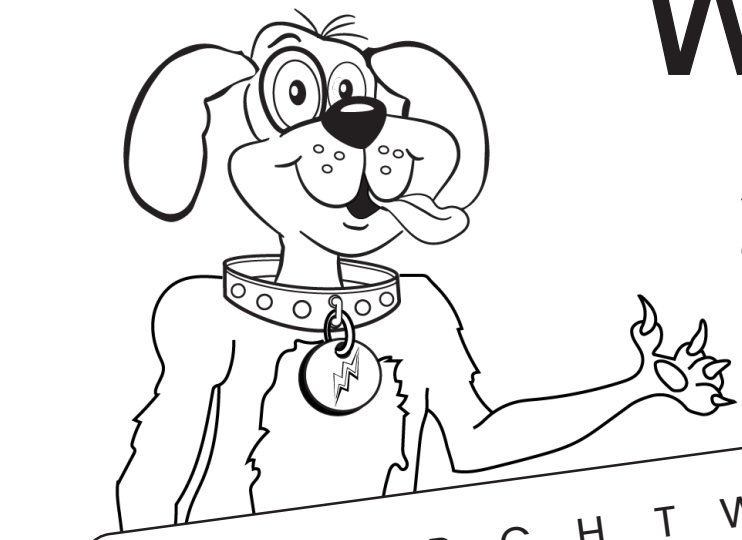
DOT TO DOT

Connect the dots to complete the picture. Colour the picture and share with your friends.



Remember to turn off lights and appliances when you are done using them.

ENERGIZED 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.

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

CONSERVE

EFFICIENT

ENERGY

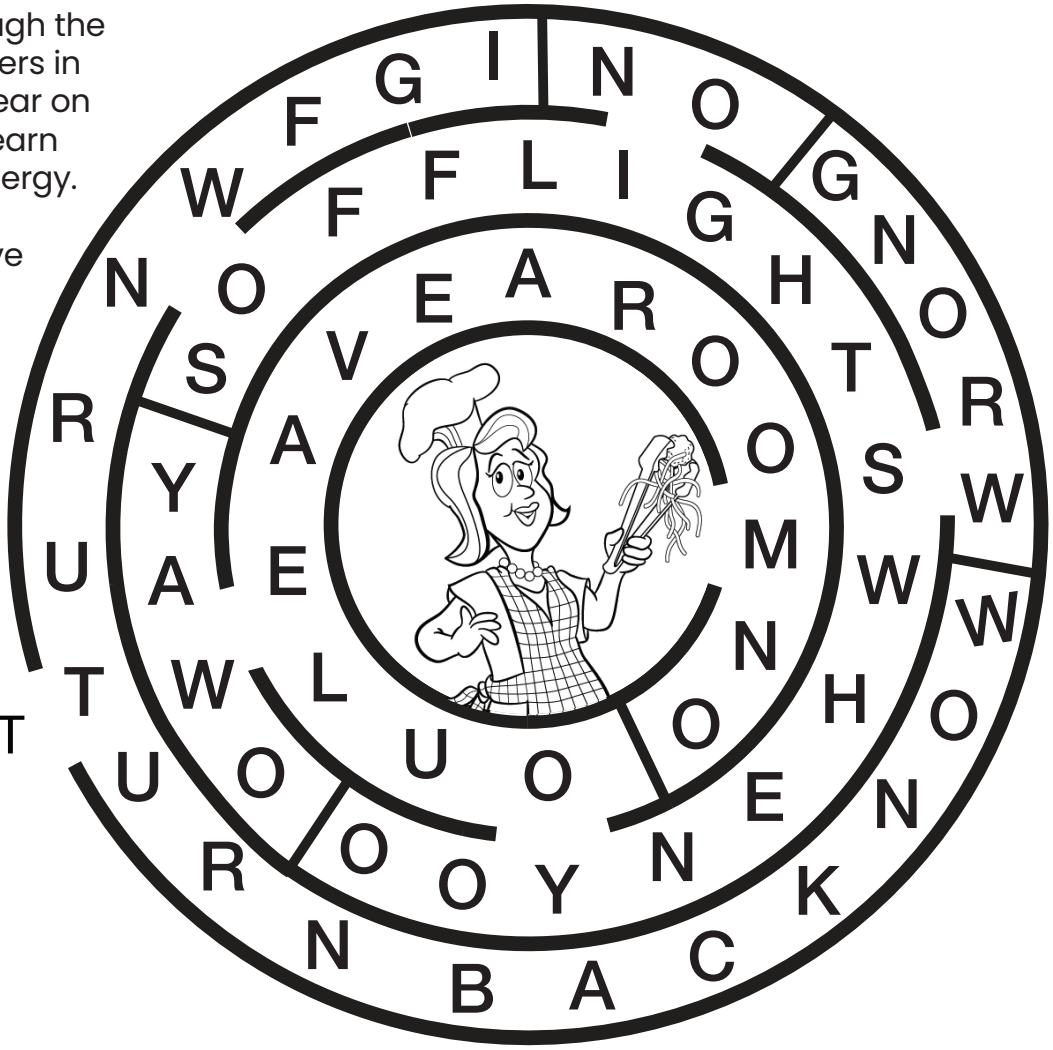
POWER PLANT

RESOURCE

WASTE

SUPER Maze

Find your way through the maze. Write the letters in the order they appear on the lines below to learn one way to save energy. Read the sentence out loud once you've completed it.



__ __ __ __ __ __ __ __ __ __ __ __

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__ __ __ __ __ __ •

Suggested Grades: 3-5 • Learning Area: Science, English
General Capability: Literacy, Critical and Creative Thinking • Cross-Curriculum Priority: Sustainability

Write a STORY about NATURAL RESOURCES

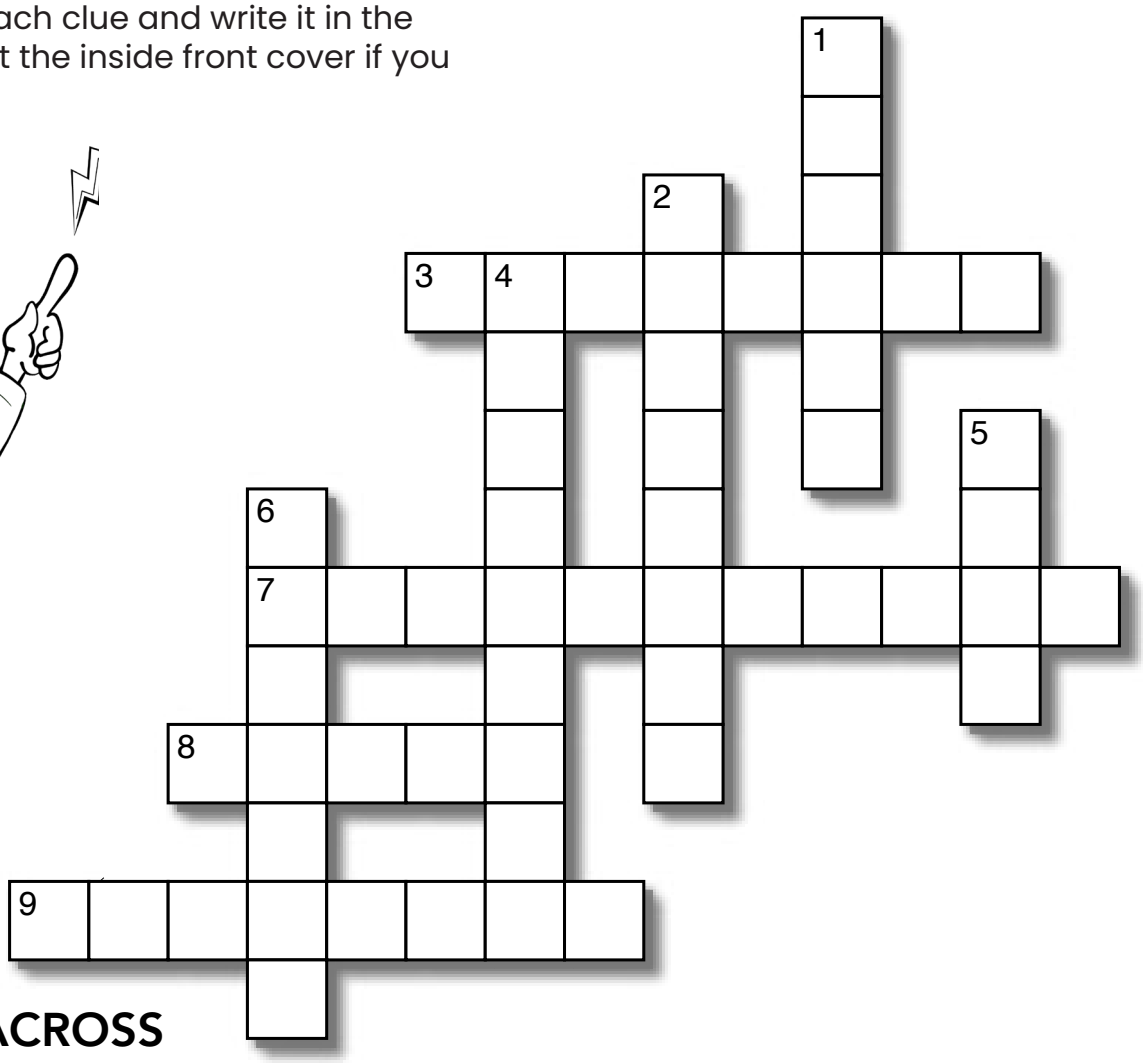
Write a story about natural resources. Include what you learned about energy, resources and saving energy. Use another piece of paper if you need it. Share what you know by reading your story to your family.

We use natural resources to... _____

Suggested Grades: 3-5 • Learning Area: Science, English
General Capability: Literacy, Critical and Creative Thinking • Cross-Curriculum Priority: Sustainability

John'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.



AERATOR
CONSERVE
EFFICIENT
ELECTRICITY
ENERGY
KILOWATT
RESOURCE
WASTE
WATT

ACROSS

3. Something we use to make electricity, like natural gas, water, solar energy and wind
7. A useful source of energy used in many ways
8. To use more than necessary
9. One thousand watts of electricity

DOWN

1. The ability to do work and the force that makes things change
2. To save or use wisely
4. Producing very little waste
5. A unit of electricity
6. A small attachment on a tap to save water in kitchens and bathrooms

Suggested Grades: 3-6 • Learning Area: Science, English
General Capability: Literacy, Critical and Creative Thinking • Cross-Curriculum Priority: Sustainability

Knowing What's WATT

Appliances that heat or cool require lots of electricity. Below is a list of the wattage (electricity) needed to operate different appliances.

Air Conditioner	3000W	Lightbulb (LED)	10W
Ceiling Fan	60W	Microwave	800W
Clock	2W	Oven	3500W
Clothes Dryer	3000W	Power Tools	800W
Computer	400W	Games Console	180W
Dishwasher	1800W	Sewing Machine	100W
Electric Blanket	100W	Toaster	1000W
Electric Toothbrush	5W	LED TV	100W
Hair Dryer	1500W	PLASMA TV	300W
Iron	1100W	Vacuum	1500W
Lightbulb (standard incandescent)	50W	Washing Machine	1200W

Which appliances do you think use more electricity? Circle the correct answer.

Air Conditioner or Ceiling Fan?

Iron or Sewing Machine?

Oven or Microwave?

TV or Computer?

Hair Dryer + Clock or Vacuum + Microwave?

Standard Lightbulb or LED?

SMART ENERGY ACADEMY

Tara Misu's ENERGY MATHS MESSAGE

Do the maths and fill in the spaces below to complete the message. Read the message out loud once you've completed it.

97 - 5 = ☐ S

40 + 5 = ☐ L

3 x 17 = ☐ T

15 ÷ 5 = ☐ H

10 x 8 = ☐ I

18 + 7 = ☐ G

99 + 15 = ☐ P

36 ÷6 = ☐ N

13 + 7 = ☐ D

12 - 12 = ☐ A

33 x 3 = ☐ E

65 - 9 = ☐ C

To save energy, turn off

45	80	25	3	51	92		0	6	20

0	114	114	45	80	0	6	56	99	92	•

Suggested Grades: 4-6 • Learning Area: Mathematics, Science, English
General Capability: Numeracy, Critical and Creative Thinking • Cross-Curriculum Priority: Sustainability

Activity: How Much Energy Does Your Appliance Use?

Objective:

In this activity, you'll measure how much energy (in kWh) a home appliance uses during one full cycle. Then, you'll compare your results with your classmates to see whose appliance uses the most energy!

What's a kWh?

A kWh (kilowatt-hour) is a way to measure energy. It shows how much power an appliance uses over time. Think of it like this: If an appliance uses 1,000 watts (or 1 kilowatt) for 1 hour, it's used 1 kWh. The more kWh an appliance uses, the more electricity (and money!) it's using.

What You'll Need:

- Reduction Revolution Power Meter
- A home appliance (like a washing machine, toaster, or microwave)
- Pen and paper to jot down your results

Steps:

1. **Pick an Appliance:** Choose an appliance in your house that runs in cycles (like a washing machine, dishwasher, or microwave). Make sure it's not running yet!
2. **Set Up the Power Meter:** Plug the Power Meter into the wall, and then plug your chosen appliance into the Power Meter.
3. **Reset the Meter:** Use a pen, pencil, or toothpick to press the tiny 'R' button on the Power Meter. This will reset everything to zero, so you're starting fresh!
4. **Find the Energy (kWh) Reading:** Press the MODE button on the Power Meter until you see kWh on the screen. This shows the total energy your appliance uses during the whole cycle.
5. **Run the Appliance:** Start your appliance and let it run through its entire cycle. For example, run a full washing machine load or heat something in the microwave.
6. **Check the kWh:** When the cycle finishes, check the kWh reading. This shows how much energy your appliance used! Write it down.
7. **Compare with Your Class!** When you're done, share your results with your classmates. Who has the appliance that used the most energy? Who has the one that used the least? What could we all do to reduce the amount of energy our appliances use?

Fun Questions to Think About:

- How much energy (kWh) did your appliance use?
- If you ran this appliance every day for a year, how much energy would it use? (Hint: Multiply the kWh by 365!)
- What changes could you make to use less energy? (For example, using cold water in the washing machine or turning off the microwave when it's not in use.)

After the activity, talk with your class about how to save energy at home. Can you think of ways to reduce your family's electricity bill? Let's see whose appliance is the energy champ and whose could be a little more energy-friendly!

SAVE ENERGY. SAVE RESOURCES. SAVE THE PLANET.

SMART ENERGY ACADEMY

STUDENTS, TEACHERS & FAMILIES

Participate in the ***Smart Energy Academy School Challenge*** and do your bit to help save 1 million kWh of energy!

Teachers will soon handout a Home Energy Survey for all students and familes to complete. Return the completed survey to enter the challenge.

And while saving energy is a reward in itself, the ***Smart Energy Academy School Challenge*** offers exciting cash prizes:

$100 for YOUR SCHOOL
$500 for one lucky FAMILY
$500, $1,000, or $2,000 for three SCHOOLS

For full reward details, visit

EnergyAcademy.com.au