

Written and illustrated by Rick McKinley | Suitable for Year 1-3

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A Genesis Energy initiative to bring solar energy and energy efficiency to life for New Zealand schools



EVERY MORNING Tui perched in the pohutukawa tree near Jake's room. She was shiny black, blue and green, with white feathers rolled up under her chin. Jake thought they looked like a bowtie.

Today he noticed she was singing a different tune. He listened for a while

before looking out his bedroom window. "Ooh, the sun is *very* bright," he said as he looked up through bleary eyes. "What's that song Tui? I've never heard it before..."



"It's about the *SUN!*" explained Tui, "Woo taught me."

"Woo *Who?*" asked Jake. The question sounded rather silly.

"Wise Old Owl, we call him Woo for short," said Tui. "He's up in this tree." "Are there any words to the song?" "Yes," replied Tui, "but I can't remember them."

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see at all. cloudy days."

- Jake looked further up into the tree. The sun was so bright he could hardly
- "Careful," said Tui, "the sun can hurt your eyes if you look into it – even if you have sunglasses on."
- "You can get sunburnt too," added
- Jake as he put his cap on. "Mum says to wear sunblock and a hat, even on





"Very wise," said Tui. "Do you know, planet Earth *spins around* once every 24 hours. So when the sun is shining here, it's dark on the other side of the world. As well as spinning around, Earth travels *around the sun* once a year, giving us our four seasons." Jake loved listening to Tui because she was smart. In his pyjamas and cap, he

climbed out the window to hear more. "Without the sun the world would be a dark, cold place," continued Tui. "Plants and grass would not grow, so birds and animals would have nothing to eat - nor would *people!*" "Thank goodness for the sun then," said Jake, "I haven't had breakfast yet!"





"You know, the sun *looks* close, but it is **150 million kilometres** away!" exclaimed Tui. "Just imagine, if we could drive a car to the sun, it would take *175 years* to get there!" "Amazing," said Jake, "that's a really long drive!"

"The sun is actually a *STAR*," said Tui. "There are billions of stars in the sky but the sun is much closer to Earth than other stars." "No wonder it's so big - and *bright!*" said Jake, shading his eyes.



"Yes, and sunlight travels *very* fast at the *SPEED OF LIGHT* - but the sun is so far away that sunlight takes *8 minutes* to reach us!"

"8 minutes?" Jake repeated. "The sun must have *lots* of energy to send it that far!"

"SOLAR ENERGY!" A big, deep voice gave them a fright as it came booming down from above.

Jake looked up and there, just above his tree hut, was a large owl he had never seen before. *"There* he is!" whispered Jake excitedly.





"It's Woo," Tui whispered back. "He gets grumpy if he's woken up. He likes to sleep through the day."

Jake was already on his way up the tree. Tui settled on her favourite

branch near the tree hut.

"There's a lot of *whispering* going on. Who are you boy?" With one eye half open, Woo stared straight at Jake. "G-good morning M-Mr Woo, I'm Jake," he said nervously. He had never talked to an owl before – and a grumpy one at that.

"P-Please tell me what solar energy is." "Oh *alright!*" squawked Woo, fluttering his eyelids fully open. "*SOLAR ENERGY* is the heat and light from the sun,"Woo began. "Every hour of solar energy is more than enough to generate *ELECTRICITY* for the whole planet - for a *whole year!* Now, imagine if we could use that energy to turn on the lights, TVs, computers..." "How could we do *that?*" asked Jake.

"SOLAR PANELS!" Woo exclaimed. "Look, they're being put on the roof next door right now." "They're all black," Jake observed. **"That's because dark colours** soak up light from the sun better," said Woo.

"Notice NORT "Doesn Jake so "Yes, bu more fu knew a "The su west. A the nor the nor

"Notice how the solar panels face **NORTH** to catch the sun."

"Doesn't the sun shine *everywhere?*" Jake sounded confused.

"Yes, but in New Zealand the sun shines more from the *north*," said Tui, who

knew a lot about her native country.

"The sun rises in the *east* and sets in the *west*. At midday the sun is shining from the *north*, so the solar panels will get

more sun if they face north."

Jake nodded, pretending to

understand.



"The solar panels catch the sunlight and turn it into **ELECTRICITY**," said Woo. "But it's not the right kind of electricity to turn on the lights and TV. See that box?" he asked, pointing to

one of the workmen.

"It looks like a toy fire truck from up here," said Jake. "Don't be silly," said Woo, "it's called an *inverter*. It changes the electricity into the kind you need at home." "Why do we need electricity anyway?" asked Jake.



"Electricity turns on your lights and heats your hot water," said Woo.
"It runs your computer, TV, fridge, heater, washing machine, and charges "Mos up your i-pad and cellphone..." from
"But we don't have solar panels, so where Wo does our electricity come from?" asked Jake.

"Most electricity in New Zealand comes from hydro-electric dams," answered Woo. "The dams use the energy of the water in our rivers and lakes. But when there is no rain, the rivers can dry up, so we need energy that never runs out..."

"RENEWABLE ENERGY!" screeched Tui, who had heard all this before. "That's right," said Woo. "Some power comes from coal, oil or gas and one day these will run out. We need *renewable* energy that won't run out, like the sun..." "And **WIND**," added Tui.

"Yes, wind farms also generate renewable energy," said Woo, "but the wind does not always blow, while the sun always shines - even on cloudy days."

"Using renewable energy is also one way we can stop GLOBAL WARMING..."
"Dad talks about Global Warming a lot," said Jake. "What does it mean?"
Woo raised his eyebrows. "Well, some electricity comes from burning coal, oil or gas," he explained. "When they burn, gases go up into the air and stop heat from escaping into space. This makes the Earth warmer so it's called *Global Warming*. It's damaging the world we live in."

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"We must *SAVE* energy too," said Tui thoughtfully.

"Like mum telling me to turn off the lights when I leave my room?" said Jake.

"Very wise!" chuckled the wise old owl. "AND, don't waste hot water, AND, always close the fridge door. It takes electricity to heat water and keep the fridge cold. You must not waste it." *"Jake! Breakfast!*" called Jake's mum. Suddenly, Tui started to sing again. "Oh - one last thing — what are the words of Tui's new song?" pleaded Jake. Woo blinked, then flapped his wings. Taking a big breath, he began to sing in a deep voice...



"Catch the power of the sun and turn it on – SOLAR ENERGY – catch the power of the sun and turn it on!"

Woo thought he sounded like an opera singer. Then they all sang together:

"Catch the power of the sun and turn it on - SOLAR ENERGY - catch the power of the sun and turn it on!"

for breakfast.



- "*Cool song!*" Jake enthused.
- *"Catch the power of the sun* and now I know how – *thanks Woo!*"
- Jake was still singing when he sat down
- "Good morning Jake. Where did you
- learn that song?" asked his mum.



Jake thought for a moment. She would never believe him. *TALKING* to a wise old owl? **SINGING** with Tui? "They're putting *solar panels* on the roof next door mum. We should have

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of cereal.

- some too!" He began to tell his mum all about the sun and solar energy. "How did you learn so much about the sun?" she asked.
- "Well, that's a *lo-o-ong* story mum!" said Jake, taking a huge mouthful



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