# ENERGY DETECTIVES

**Lesson 2**

**What is electricity and where does it come from?**

## STUDENTS

**Energy Detective Handbook**

Name: _____

Class: _____

POWER SAVVY

# ELECTRICITY IS A FORM OF ENERGY

**When you think of electricity, what do you think of?**

Draw or write your answer below.

It's a very useful form of energy that we use in our everyday lives.

But how is it made?

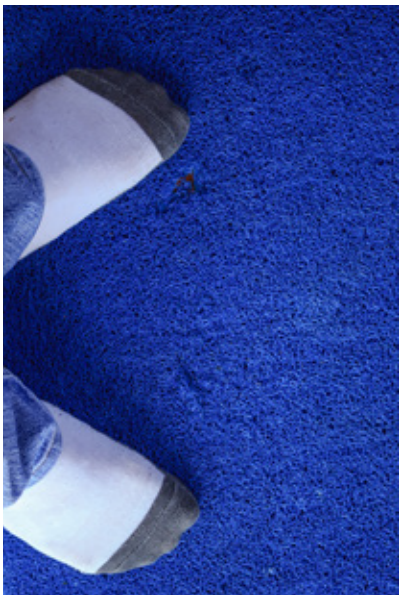
# ACTIVITY 2.1: ELECTRICITY IN NATURE

**Can you think of an example of electricity in nature?**

Write or draw your answer.

**Can you list the different forms of energy found in a lightning storm?**

## … and we can make it too



Have you ever walked on carpet with your socks on, and zapped someone when you touched them?

Or got zapped when jumping on a trampoline?

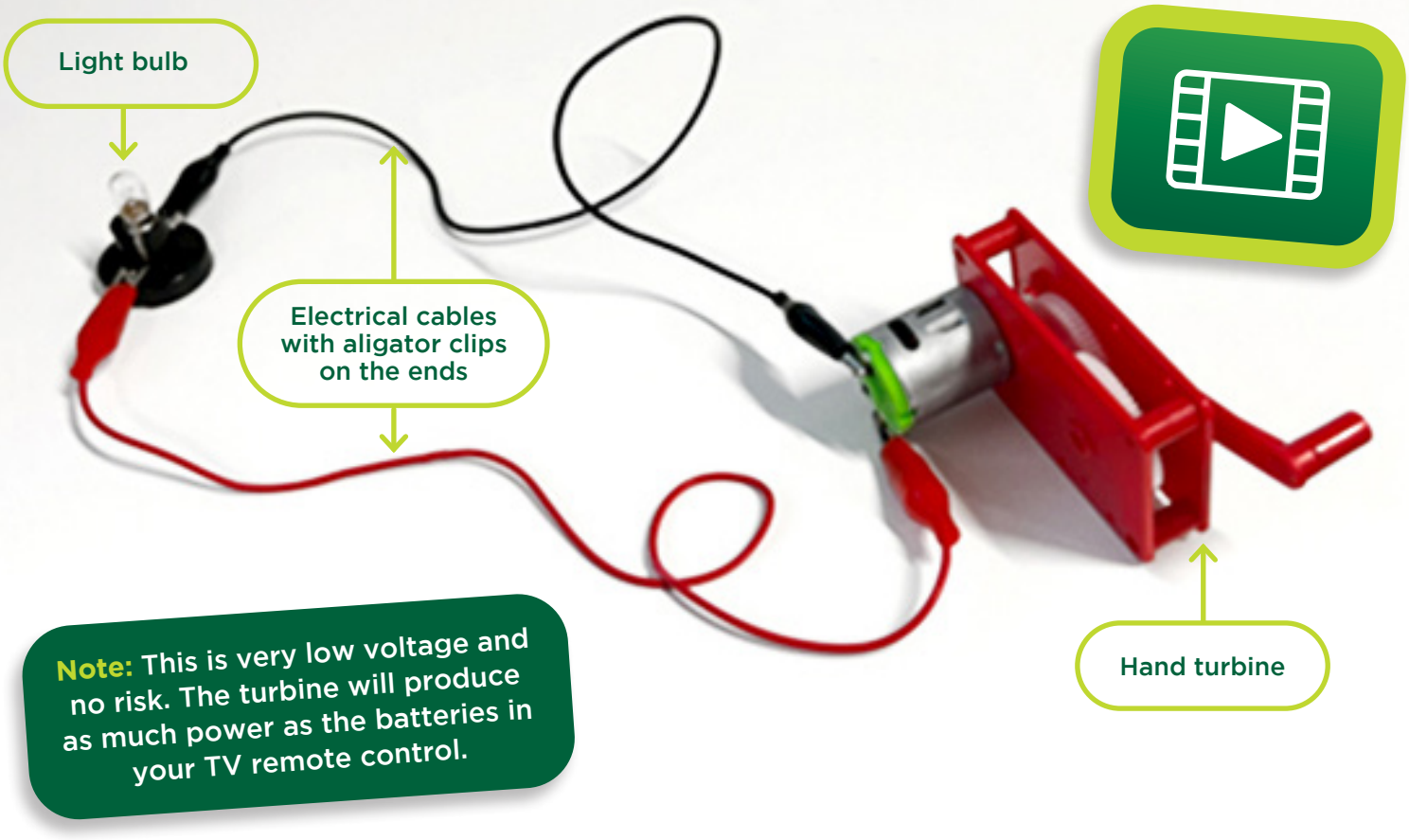
These are both examples of you making electricity (static electricity).

## Now let's make some electricity in the classroom

# ACTIVITY 2.2: MAKING ELECTRICITY USING A TURBINE AND GENERATOR

**Using the turbine kit:**

Clip the wires to the light bulb and turbine as shown in video and pictures.




**Note:** This is very low voltage and no risk. The turbine will produce as much power as the batteries in your TV remote control.

# ACTIVITY 2.3: WHERE DOES ELECTRICITY COME FROM IN YOUR COMMUNITY?

**Can you think of where the electricity comes from in your community?**

Use the space below to draw or write your thoughts.

**Can you think about and explain how the power station in Bamaga works?**

## Can you explain how these power stations on roofs work?

## Can you explain how these power stations on the hills work?

# ACTIVITY 2.4:
# RENEWABLE AND NON-RENEWABLE ENERGY

**What is renewable and non-renewable energy?**
**Can you provide some examples?**

Use the space below to draw or write your thoughts.

## Non-renewable energy:

Energy that takes a long time to make (thousands or millions of years).

**Examples:**

Coal

Diesel

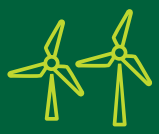
Gas

## Renewable energy:

Energy that is made all the time and available straight away.

**Examples:**

Solar

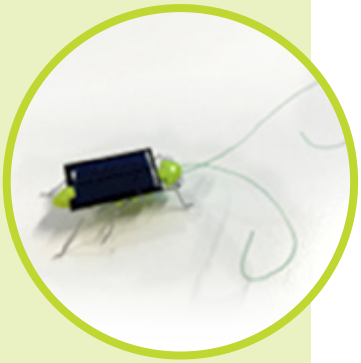


Wind

Hydro

# ACTIVITY 2.5:
# SOLAR ENERGY DEMONSTRATION

## Turbine and generator



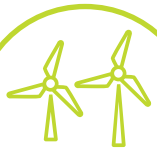
## Solar power

***Hint:*** *You may need to take the car and grasshopper outside.*

# ACTIVITY 2.6: ADVANTAGES AND DISADVANTAGES OF THE DIFFERENT SOURCES OF ELECTRICITY

**The different ways of making electricity have advantages (good things) and disadvantages (not so good things).**

Can you think of and list some?

| Power source | Advantages (good things) | Disadvantages (not so good things) |
|---|---|---|
|  Coal | | |
|  Diesel | | |
|  Solar | | |
|  Wind | | |

## FIELD TRIP (OPPORTUNITY)

- Visit to the local power station to learn about how electricity is made and delivered to community.
- On the way back to school – teacher points out how the power station is connected to all homes, businesses and schools through the powerlines.


Ergon Retail acknowledges the Traditional Custodians of the land on which we live and work, and recognise their continuing connection to land, waters and community. We pay respect to Elders past and present.

## ENQUIRIES

1300 135 210
8am to 5pm, Mon - Fri

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