

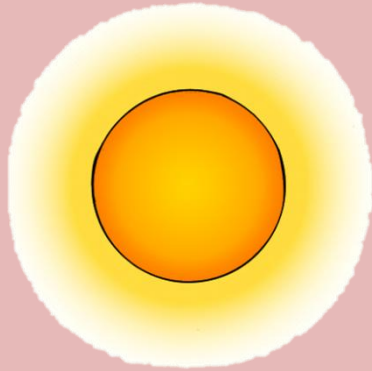


WELCOME TO THE
CACTUS MOON EDUCATION
RENEWABLE ENERGY QUIZ

Cactus Moon Education, LLC.

Understanding Green Technologies

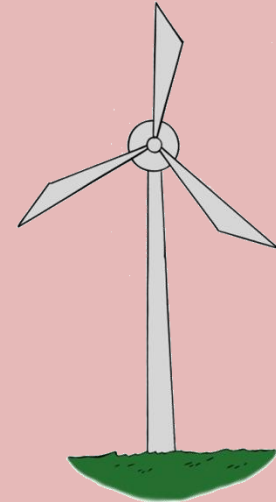
Touch the screen anywhere to begin



SOLAR

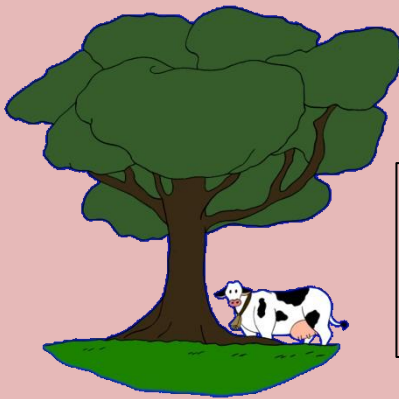


HYDROPOWER



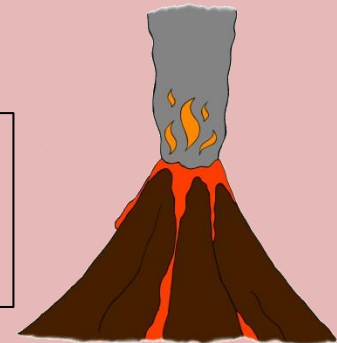
WIND

THE FIVE RENEWABLE ENERGY RESOURCES



BIOMASS

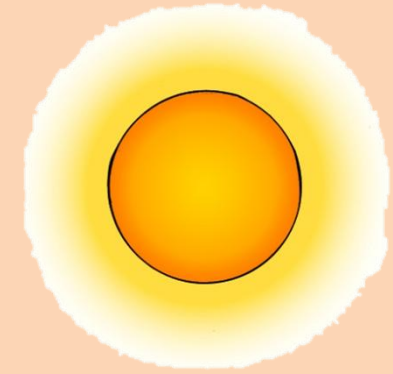
Touch one of the renewable energy sources,
read a little about it, then answer three
True or False quiz questions!



GEOHERMAL



SOLAR – ENERGY 1



Solar energy is the energy we receive from the sun in the form of heat and light.

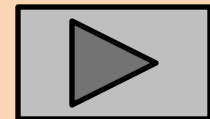
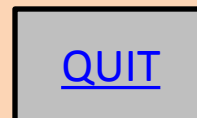
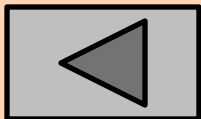
We can use solar energy to make electricity.

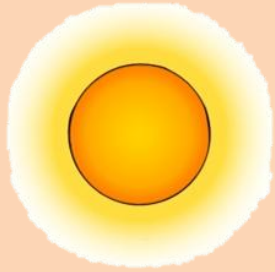
Solar panels are made from special materials which can convert sunlight into electricity. The electricity made by solar panels can be used to help power our homes and even cities.

The heat energy we get from the sun can also be used to produce electricity. It can also be used to heat water for our homes.

Solar collectors harvest the sun's heat energy and use it to heat a liquid such as water, oil, or molten salt.

The hot liquid can be stored for later use or used immediately to make steam to power an electric turbine/generator or to provide heat.

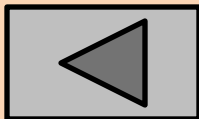
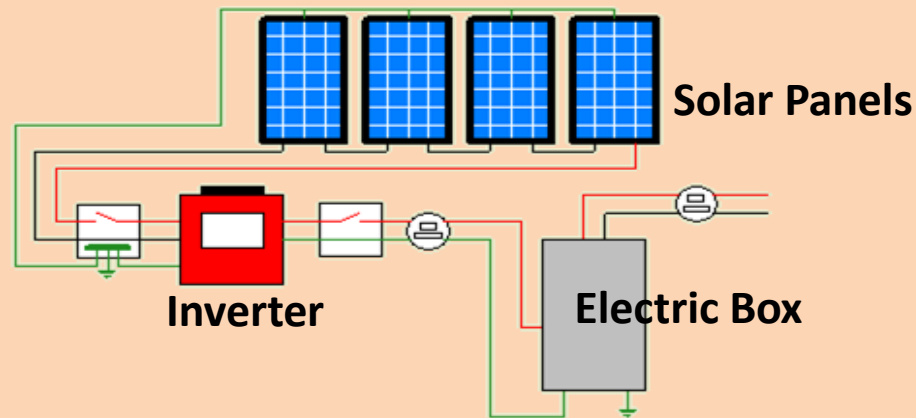




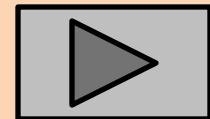
SOLAR – ENERGY 2

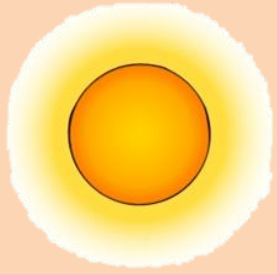
How it works:

Solar panels convert sunlight into Direct Current (DC) electricity. An inverter contains electronic circuits that convert the DC electricity into AC electricity which can be used in our homes.



[QUIT](#)



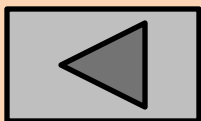


Solar Energy Question 1

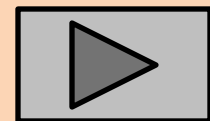
**SOLAR ENERGY IS THE ENERGY
WE RECEIVE FROM THE SUN IN
THE FORM OF HEAT AND LIGHT.**

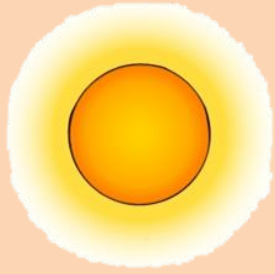
TRUE

FALSE



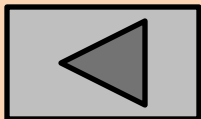
QUIT



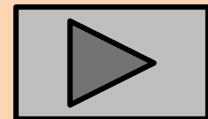


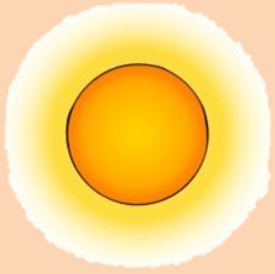
That's Correct!

**SOLAR ENERGY IS THE ENERGY WE RECEIVE FROM THE SUN IN
THE FORM OF HEAT AND LIGHT.**



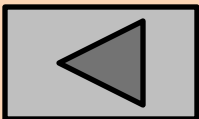
QUIT





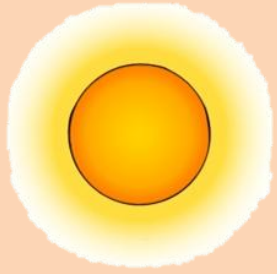
I'm sorry, that's incorrect!

**SOLAR ENERGY IS THE ENERGY WE RECEIVE FROM THE SUN IN
THE FORM OF HEAT AND LIGHT.**



QUIT



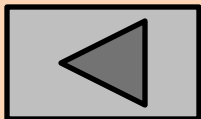


Solar Energy Question 2

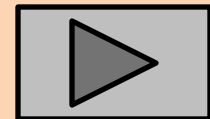
**SOLAR THERMAL COLLECTORS
HARVEST THE SUN'S HEAT ENERGY
AND USE IT TO HEAT A LIQUID.**

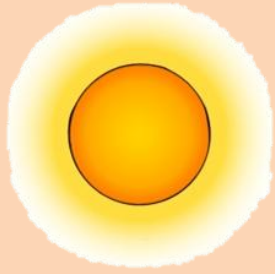
TRUE

FALSE



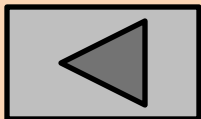
QUIT



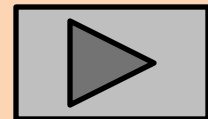


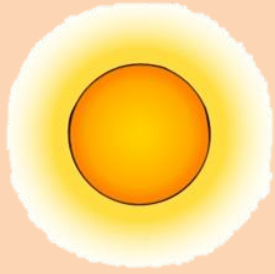
That's Correct!

**SOLAR THERMAL COLLECTORS HARVEST THE SUN'S HEAT
ENERGY AND USE IT TO HEAT A LIQUID.**



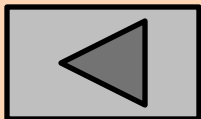
QUIT



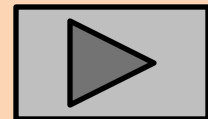


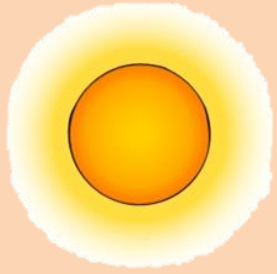
I'm sorry, that's incorrect!

**SOLAR THERMAL COLLECTORS HARVEST THE SUN'S HEAT
ENERGY AND USE IT TO HEAT A LIQUID.**



QUIT



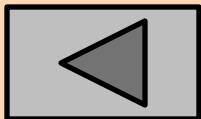


Solar Energy Question 3

**AN INVERTER CONVERTS DC
ELECTRICITY INTO AC ELECTRICITY**

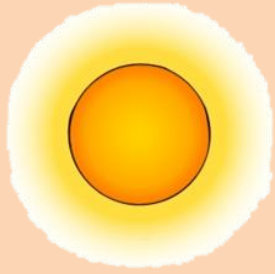
TRUE

FALSE



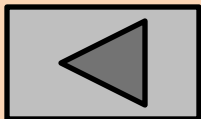
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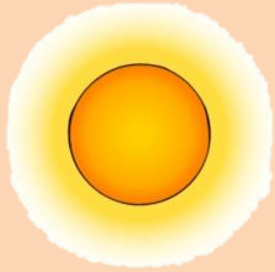
That's Correct!

**AN INVERTER CONVERTS DC ELECTRICITY INTO AC
ELECTRICITY**



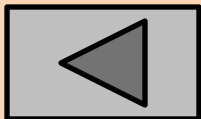
QUIT





I'm sorry, that's incorrect!

**AN INVERTER CONVERTS DC ELECTRICITY INTO AC
ELECTRICITY**



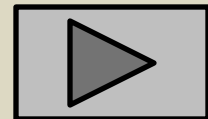
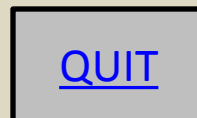
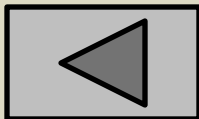
QUIT



BIOMASS 1

Biomass is material that comes from living or recently dead plants and animals. Some examples are grass, wood from trees, and waste from humans and other animals.

Biomass can be used as a fuel directly or can be converted into bio-gas or liquid fuels which can be burned to provide heat for cooking, to warm our homes, to generate electricity, or to power our cars.





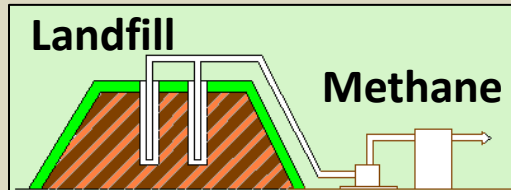
BIOMASS 2

How it works:

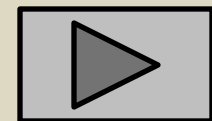
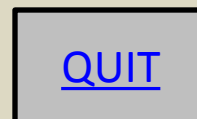
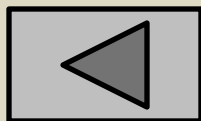
Landfills - Material in a landfill decomposes or rots, and creates methane. The methane can be collected and used as a fuel.



microbes digest the solid material and produce a gas called methane. Methane can be used as a fuel to make electricity or as a fuel to power cars.



Direct Burning - Biomass can be burned in a boiler, in which water is boiled to make steam. The steam can be used to power a turbine/generator to make electricity.





Biomass Question 1

MANURE CAN BE USED TO MAKE ELECTRICITY

TRUE

FALSE



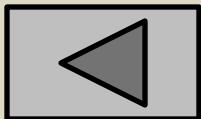
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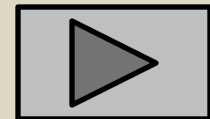


That's Correct!

MANURE CAN BE USED TO MAKE ELECTRICITY



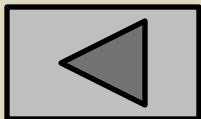
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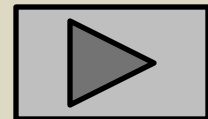


I'm sorry, that's incorrect!

MANURE CAN BE USED TO MAKE ELECTRICITY



QUIT





Biomass Question 2

**GRASS AND TREES ARE THE ONLY ITEMS
THAT MAKE UP BIOMASS**

TRUE

FALSE



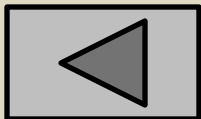
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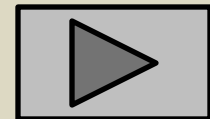


That's Correct!

ANY LIVING OR RECENTLY DEAD BIOLOGICAL MATERIAL IS CALLED BIOMASS. THIS INCLUDES GRASS, TREES AND SHRUBS AND ALSO ANIMALS AND THEIR WASTE.



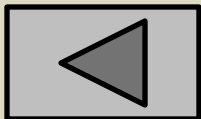
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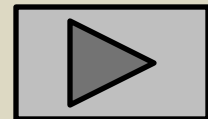


I'm sorry, that's incorrect!

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QUIT



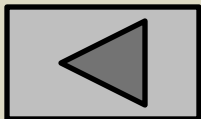


Biomass Question 3

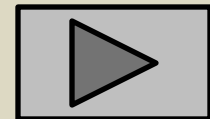
**THE GAS GENERATED BY DECOMPOSING
MATERIAL IN A LANDFILL IS HELIUM**

TRUE

FALSE



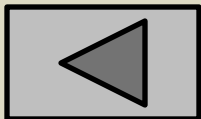
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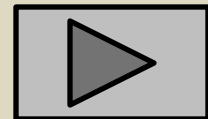


That's Correct!

**THE GAS GENERATED BY DECOMPOSING MATERIAL IN
A LANDFILL IS CALLED METHANE**



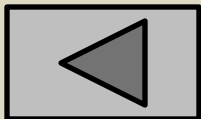
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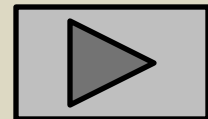


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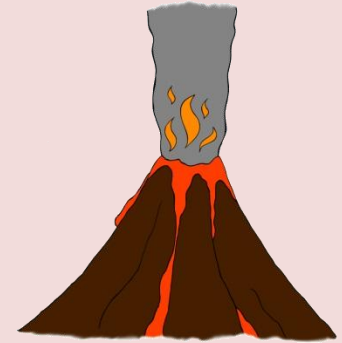
**THE GAS GENERATED BY DECOMPOSING MATERIAL IN
A LANDFILL IS CALLED METHANE**



QUIT

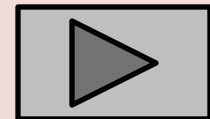
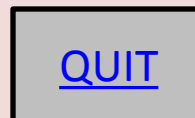
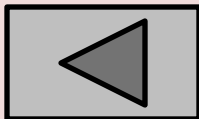


GEOHERMAL ENERGY 1



Geothermal Energy is the heat contained in the earth. Indications that geothermal energy is close to the earth's surface are volcanoes, mud pots, fumaroles, geysers, and hot springs.

Geothermal energy can heat or cool a building, be used in greenhouses for agriculture, or generate electricity.

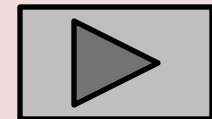
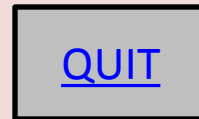
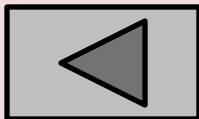
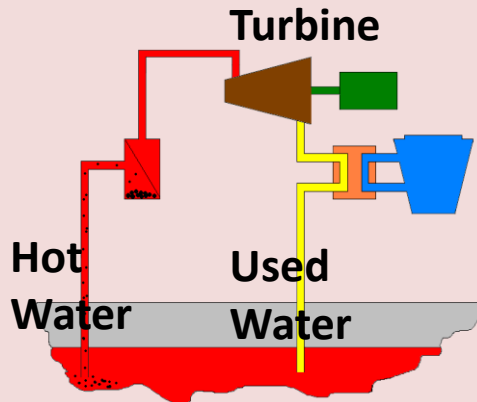




GEOHERMAL ENERGY 2

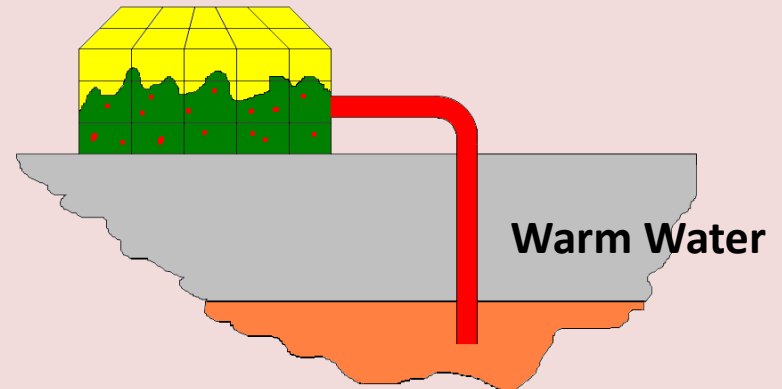
How it works:

A hole is drilled deep into the earth and geothermal hot water “flashes” into steam when it reaches the earth’s surface. The steam powers a turbine/generator to make electricity. The used water is put back into the earth to get hot again..



How it works:

Not all Geothermal resources are hot enough to make electricity, greenhouse farming uses warm geothermal water to heat the greenhouse, so vegetables can be grown in the winter.



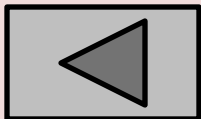


Geothermal Question 1

**GEOHERMAL ENERGY IS AVAILABLE ONLY
WHEN THE SUN SHINES**

TRUE

FALSE



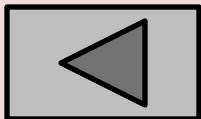
QUIT



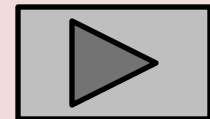


That's Correct!

GEOTHERMAL ENERGY IS AVAILABLE NIGHT AND DAY



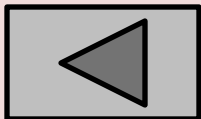
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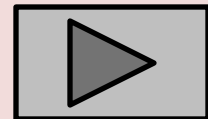


I'm sorry, that's incorrect!

GEOHERMAL ENERGY IS AVAILABLE NIGHT AND DAY



QUIT





Geothermal Question 2

AN INDICATION THAT GEOTHERMAL IS CLOSE TO THE EARTH'S SURFACE IS A MOUNTAIN

TRUE

FALSE



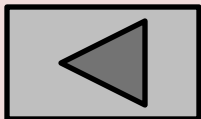
QUIT



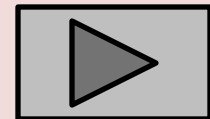


That's Correct!

**INDICATIONS THAT GEOTHERMAL IS CLOSE TO
THE EARTH'S SURFACE INCLUDE VOLCANOES,
MUD POTS, FUMARoles AND HOT SPRINGS.**



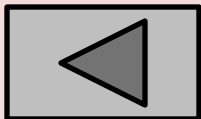
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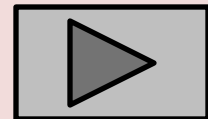


I'm sorry, that's incorrect!

**INDICATIONS THAT GEOTHERMAL IS CLOSE TO
THE EARTH'S SURFACE INCLUDE VOLCANOES,
MUD POTS, FUMARoles AND HOT SPRINGS.**



QUIT



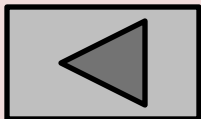


Geothermal Question 3

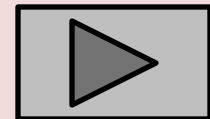
GEO THERMAL MEANS EARTH HEAT

TRUE

FALSE



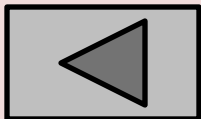
QUIT



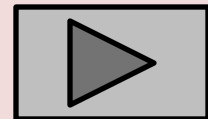


That's Correct!

GEO THERMAL MEANS EARTH HEAT



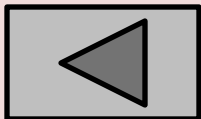
QUIT



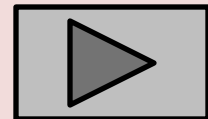


I'm sorry, that's incorrect!

GEO THERMAL MEANS EARTH HEAT



QUIT

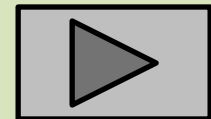
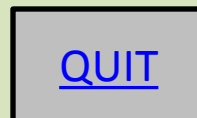
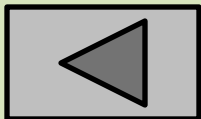
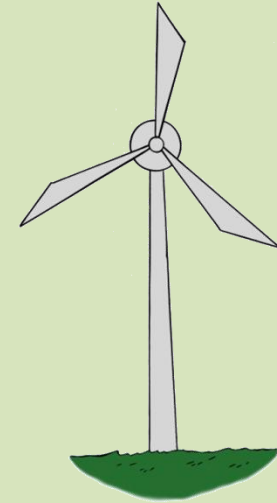


WIND ENERGY 1

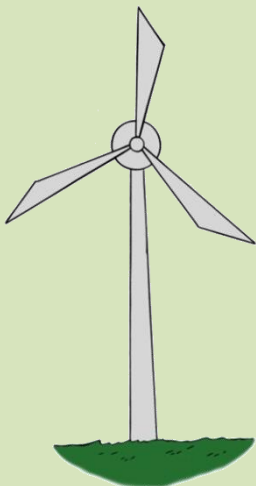
When the sun heats up the ground the air close to the ground gets warm and rises. As the warm air rises, cooler air moves in to take its place. It is this moving air that makes the “wind” that we feel on our faces.

Wind has been used for hundreds of years for sail boats, windmills, and more recently to power large turbines to make electricity.

In a wind turbine, the turbine blades are connected to a shaft that turns when the wind makes the blades move. The shaft is connected to a gearbox and an electric generator that makes electricity.



WIND ENERGY 2

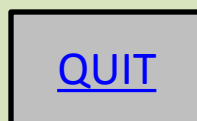
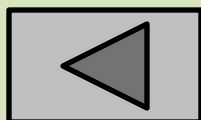


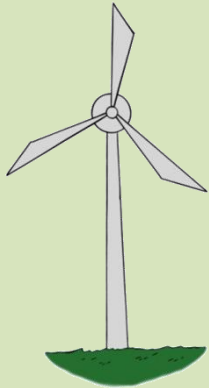
How it works:

A modern wind turbine has three sections, the Tower, the Nacelle, and the Rotor.

The Tower supports the Nacelle and the Rotor and holds them high in the air where the wind blows more strongly.

The wind turns the Rotor, which turns the mechanical gears and an electric generator inside the Nacelle.



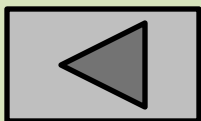


Wind Energy Question 1

**WIND IS ONE OF THE EARLIEST SOURCES
OF ENERGY THAT MAN HAS USED**

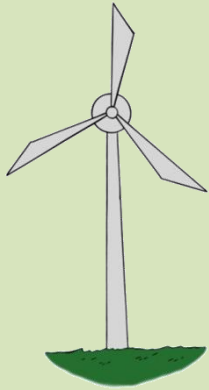
TRUE

FALSE



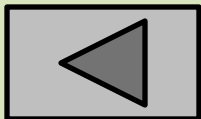
QUIT



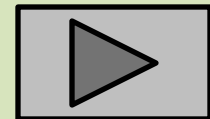


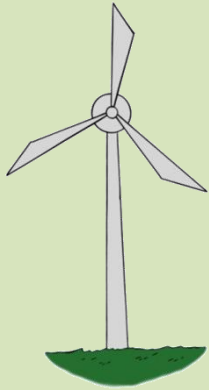
That's Correct!

**WIND IS ONE OF THE EARLIEST SOURCES OF ENERGY
THAT MAN HAS USED**



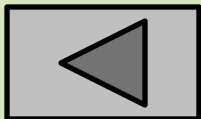
QUIT



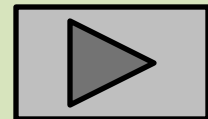


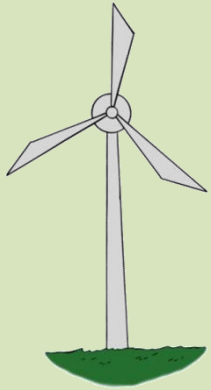
I'm sorry, that's incorrect!

**WIND IS ONE OF THE EARLIEST SOURCES OF ENERGY
THAT MAN HAS USED**



QUIT



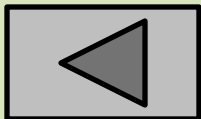


Wind Energy Question 2

**WIND IS CREATED BY HOT AIR MOVING
IN TO REPLACE COLD AIR**

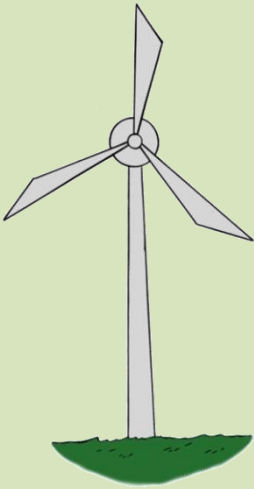
TRUE

FALSE



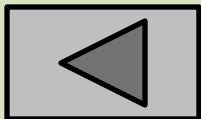
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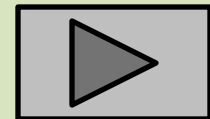


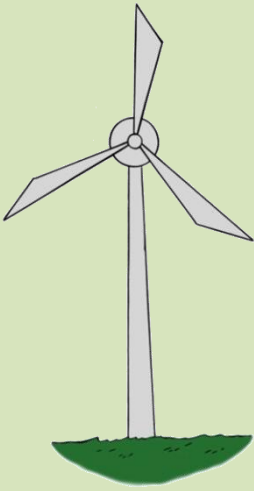
That's Correct!

**WIND IS CREATED BY COLD AIR MOVING IN TO
REPLACE HOT AIR**



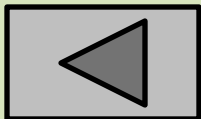
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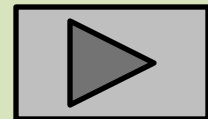


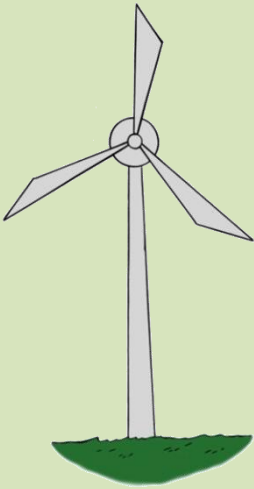
I'm sorry, that's incorrect!

**WIND IS CREATED BY COLD AIR MOVING IN TO
REPLACE HOT AIR**



QUIT





Wind Energy Question 3

**A MODERN WIND TURBINE HAS TWO
SECTIONS**

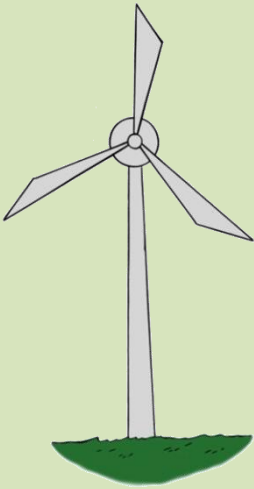
TRUE

FALSE



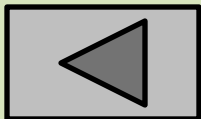
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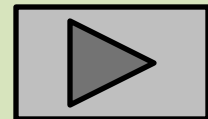


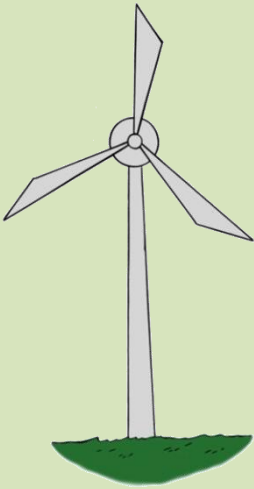
That's Correct!

A MODERN WIND TURBINE HAS THREE SECTIONS



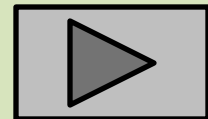
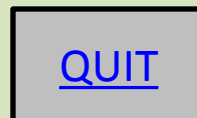
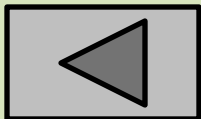
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I'm sorry, that's incorrect!

A MODERN WIND TURBINE HAS THREE SECTIONS

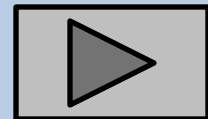
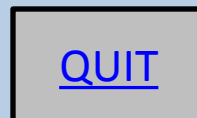
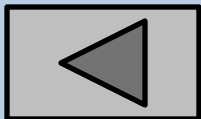


HYDROPOWER 1



Hydroelectric energy comes from the energy in moving water.

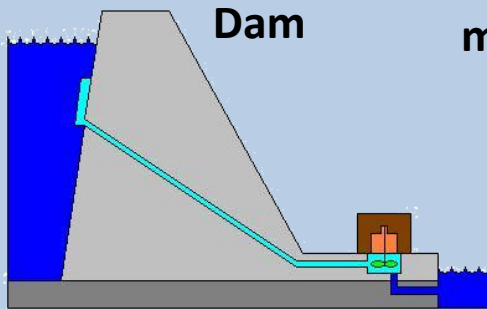
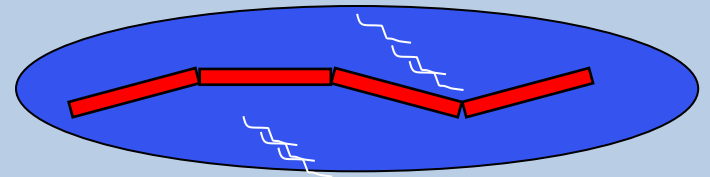
The water can be a flowing river, the up and down motion of ocean waves, the water released from a dam, or the water currents caused by ocean tides. This energy can be used to operate machinery, such as in a flour mill or make electricity using an electrical generator.



HYDRO POWER 2

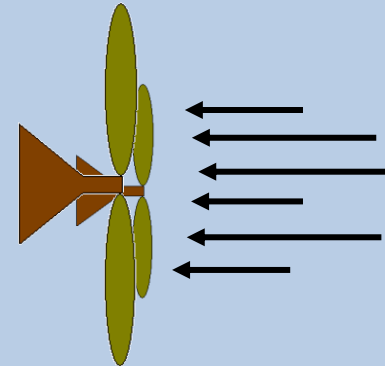


How it works:
The up-down motion of the ocean surface can be used to power wave machines.

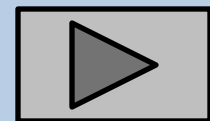
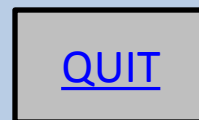
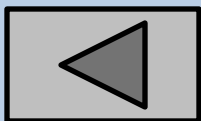


the water behind the dam falls down towards the turbine. The flowing water spins the turbine which is connected to an electric generator.

Reaction
Turbine



The flow of current in a river can be used to power a reaction turbine, a generator submerged in the river to make electricity.



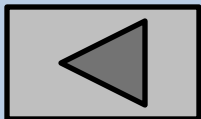


Hydro Power Question 1

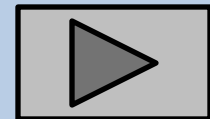
**DAMS CAN BE USED TO HOLD WATER
BACK FOR GENERATING ELECTRICITY**

TRUE

FALSE



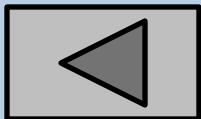
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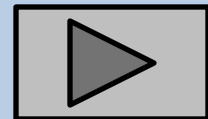


That's Correct!

**DAMS CAN BE USED TO HOLD WATER BACK FOR
GENERATING ELECTRICITY**



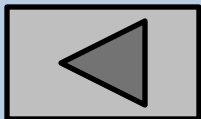
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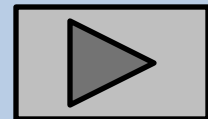


I'm sorry, that's incorrect!

**DAMS CAN BE USED TO HOLD WATER BACK FOR
GENERATING ELECTRICITY**



QUIT





Hydro Power Question 2

**FLOWING WATER CAN BE USED TO
GENERATE ELECTRICITY**

TRUE

FALSE



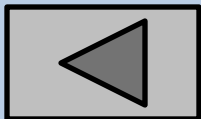
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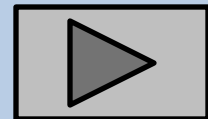


That's Correct!

**FLOWING WATER CAN BE USED TO GENERATE
ELECTRICITY**



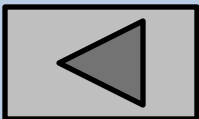
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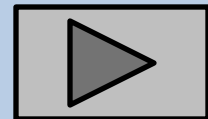


I'm sorry, that's incorrect!

**FLOWING WATER CAN BE USED TO GENERATE
ELECTRICITY**



QUIT



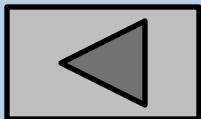


Hydro Power Question 3

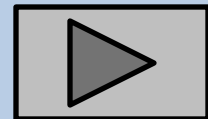
**HYDROELECTRIC ENERGY COMES FROM
THE ENERGY IN STILL WATER**

TRUE

FALSE



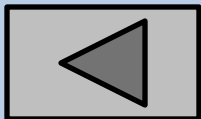
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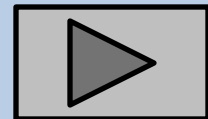


That's Correct!

**HYDROELECTRIC ENERGY COMES FROM THE
ENERGY IN MOVING WATER**



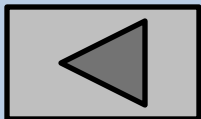
QUIT





I'm sorry, that's incorrect!

**HYDROELECTRIC ENERGY COMES FROM THE
ENERGY IN MOVING WATER**



QUIT

