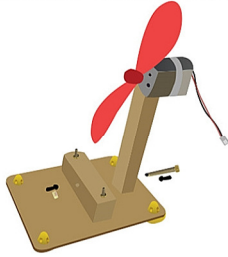
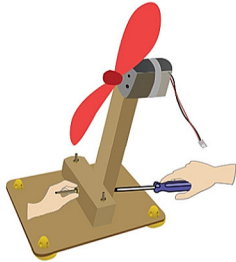


# WIND POWER GENERATOR

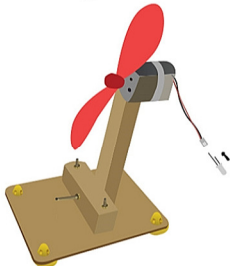
- 1 Pass the chisel bolt through the hole on the wooden stick and then through the hole on the wooden block fixed on the base. Put a nut from the other side to lock the arrangement.



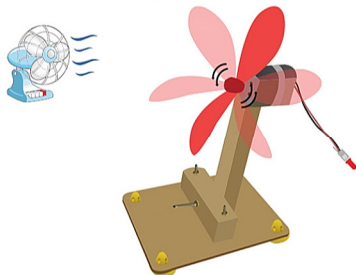
- 2 Tighten the bolt using screw driver and hold the nut from the other side while tightening it.



- 3 Insert an LED bulb into an LED connector attached with the generator.



Working:- Keep the windpower generator in front of a table fan and let the propeller rotate to generate electricity.

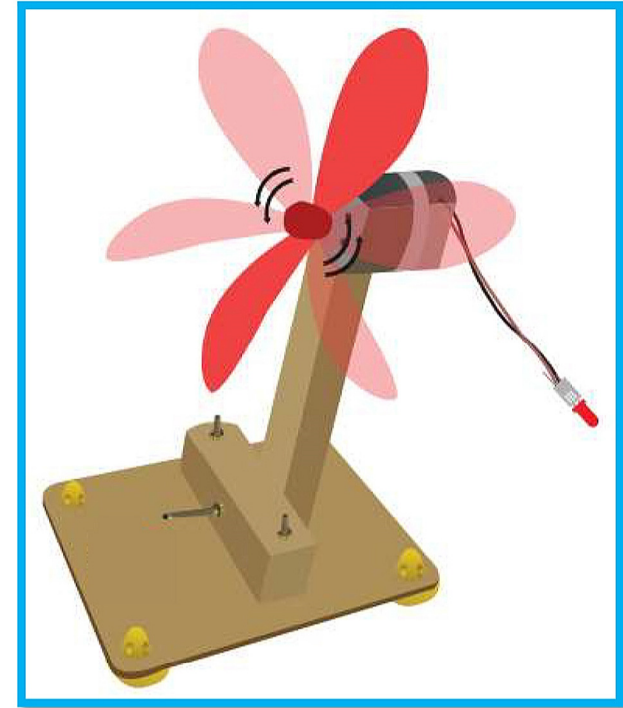


Note: If the LED bulb doesn't glow while a propeller is rotating, then reverse the position of the LED bulb.



Future STEM Explorers

# WindPower Generator



## Learning Outcome:

### Students will

- Understand the need of green energy in today's world
- Find out different sources and the ways of generating green energy from these sources
- Make a model of wind mill and try to use it for different purposes

**Green energy** comes from natural sources like wind, water, sunlight etc. It can be produced with little pollution and that's why it's far more environment-friendly than other types of energy. Unlike fossil fuels such as coal and oil, green energy sources are renewable, meaning they replenish naturally and are in continuous supply.

**Wind Energy** – Energy that we get from wind is called wind energy. A windmill converts this wind energy into rotational energy by means of its blades. Windmills have been used for hundreds of years to pump water from the ground or to do other mechanical works. The basic principle of every windmill is to convert kinetic energy of wind into mechanical energy which is used to rotate the turbine of an electrical generator to produce electricity.

**Uses of a wind mill-**

1. These include grinding grain or spices, pumping water and sawing wood.
2. Modern wind power machines are used to create electricity. These are called wind turbines.
3. Before modern times, windmills were most commonly used to grind grain into flour for making bread.

The windmill has been in history for many years. As mentioned above, in today's world, we use large, tall wind turbines that use the wind to produce electricity. Such a way of producing electricity has many advantages which are as follows-

- Wind is a renewable source of energy.
- It is one of the cheapest sources of producing electricity.
- High amount of electricity can be produced in the areas where the wind flow rate is high.

**Wind Farms- How does it work?**

Many wind turbines are often placed together in wind farms in flat areas with strong winds for the purpose of generating electricity. The picture given below explains how does a wind mill produces electricity and how is it supplied to houses-

Exploration & Observation

1. Instead of lighting up an LED bulb, try connecting the generator with the following electrical components and write your observation in the box given below-

Electrical Appliance	Observation
Table Clock	
Mobile Phone using Charger	
Laptop using Charger	
Any small toy	

2. Using the windmill you made, try taking mechanical advantage to do some other work and write the details in the box given below.