

Subject: Science

Level: Standard One

Strand: Conservation and Sustainability

Topic: Wind as a source of energy

Key points:

- The main sources of energy (traditional) used are fossil fuels such as oil, coal and gas.
- One day, these sources of energy will finish
- Nowadays, we use other sources of energy(alternative), such as wind and solar
- Wind energy is produced by windmills or wind turbines which trap wind energy to generate electricity.

Activity: Read the following paragraph carefully.

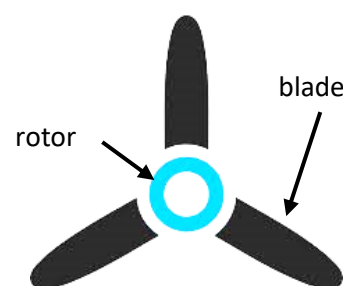
Wind has been used in many ways. Kites and parachutes use the wind to fly. Sail boats depend on the trapping of wind by their sails to power



them. Windmills use wind energy to move blades that look like huge sails. The turning motion of these blades is used to grind grains (corn, rice) and pump water out of wells.

Modern windmills are called wind turbines.

These use wind energy to turn blades around a rotor to produce electricity.



In Trinidad and Tobago electricity is cheap because of our oil and natural gas supply. However, these traditional sources of energy are quickly running out and also pollute the environment. Since parts of

our islands are windy, windmills may be useful to produce electricity in these areas.

Instructions: Complete the statements by filling in the blanks.

- 1) A traditional source of energy in Trinidad and Tobago is _____.
- 2) Wind is a/an _____ source of energy.
- 3) Wind energy is used to power sailboats and _____, pump water and _____.
- 4) The faster the _____ moves, the greater the amount of electricity produced by the windmill.
- 5) Two (2) reasons why Trinidad and Tobago should use alternative sources of energy are:
 - i. _____
 - ii. _____

Assessment:

1. Check two traditional sources of energy. Coal Wind Oil Solar
2. If the **sail** of a sailboat is made **smaller**, the boat will move _____ ?
3. How do windmills work?

4. Two (2) uses of the windmill are:

- i. _____
- ii. _____

5. Why can Trinidad and Tobago not use wind energy for all its needs?

Answer Key:

Activity

- 1) A traditional source of energy in Trinidad and Tobago is oil or natural gas.
- 2) Wind is an alternative source of energy.
- 3) Wind energy is used to power sailboats and kites, pump water and grind grains (corn, rice).
- 4) The faster the turbine moves, the greater the amount of electricity produced by the windmill.
- 5) Two (2) reasons why Trinidad and Tobago should use alternative sources of energy are:
 - i. Fossil fuels will run out
 - ii. Fossil fuels pollute

Assessment:

1. Check two traditional sources of energy. Coal Wind Oil Solar
2. If the **sail** of a sailboat is made **smaller**, the boat will move slowly.
3. How do windmills work?

The blades of the windmill trap the wind as it blows over it.

The blades will then move, causing a turning motion of the rotor.

4. Any two (2) uses of the windmill are:
 - i. Grind grains (corn, rice),
 - ii. Pump water,
 - iii. Produce electricity
5. Why can Trinidad and Tobago not use wind energy for all its needs?

The amount of electricity produced by a windmill depends on how fast the blades move.

Only some places in Trinidad, have enough wind to produce electricity using a windmill.

-