Connect

Wind turbines have the ability to convert the wind's kinetic energy into electrical energy. They are used to generate electricity for large utility grids and in isolated locations, such as rural farms.

Now build the Wind Turbine and investigate its ability to generate power.

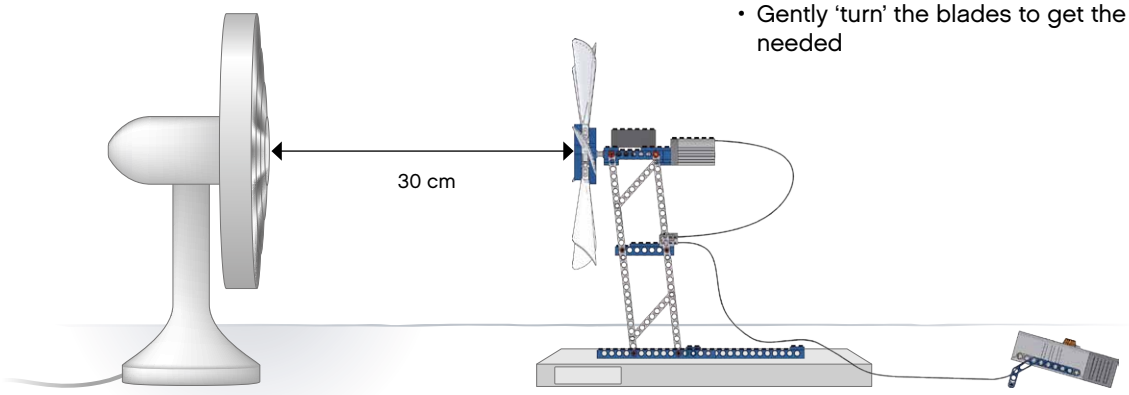
Wind Turbine

Name(s): _____ **Date and subject:** _____

Build the Wind Turbine

(Building Instruction booklet 3A and 3B, to page 43 step 18).

- Test the model's functionality. Loosening bushings can reduce friction
- Connect the plugs properly by pressing them firmly together
- Make sure to return the joules (J) reading to zero before testing
- Align the centre of the fan to the centre of the Wind Turbine
- Choose a suitable power setting on the fan that makes the Wind Turbine rotate at an adequate speed and where the Energy Meters display shows more than 2.0 V on the input reading.
- Gently 'turn' the blades to get the Wind Turbine started if needed

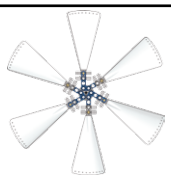


Six blades and changing the distance

First, predict the voltage (V) and power (W) generated by the Wind Turbine at a distance of 30 cm.

Then, investigate and read the average voltage and average power generated by the Wind Turbine. Read and record your findings. Remember to reset the Energy Meter before each investigation.

Next, turn off the fan and change the distance to 15 cm. Follow the same procedure as described above.

	**30 cm**		**15 cm**	
My prediction	(V)	(W)	(V)	(W)
My average findings	(V)	(W)	(V)	(W)

Three blades and changing the distance

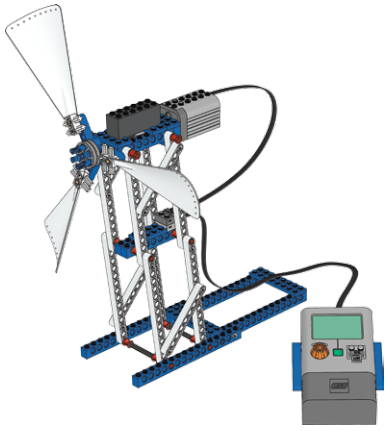
(Building Instruction booklet 3A and 3B, to page 44 step 1).

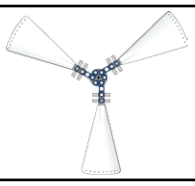
Turn off the fan and remove three blades from the Wind Turbine.

First, predict the voltage (V) and power (W) generated by the Wind Turbine at a distance of 30 cm.

Then, investigate and read the average voltage and average power generated by the Wind Turbine. Read and record your findings.
Remember to reset the Energy Meter before each investigation.

Next, turn off the fan and change the distance to 15 cm.
Follow the same procedure as described above.



	**30 cm**		**15 cm**	
My prediction	(V)	(W)	(V)	(W)
My average findings	(V)	(W)	(V)	(W)

Identifying variables

Identify and write down at least three variables, explaining clearly how these affect the efficiency of the Wind Turbine.