

Name: _____

Pre build Internet Assignment for Wind Turbine Lab

Please view the link below to answer the questions that follow in part A.

https://www.youtube.com/watch?v=qSWm_nprfqE

Part A:

How many years has mankind harnessed the wind?

What has been the major development in modern wind turbines?

What does airfoil technology allow the blade to do?

To compensate for a real wind turbines slow speed what is used?

What is the gearbox speed ratio?

The electricity generated from the generator goes to?

Define “step-up transformer”

What does a velocity sensor do?

Name: _____

What is Yaw?

Why is the Yaw adjusted on a wind turbine?

How would a wind turbine be able to absorb 100% of the kinetic energy of the wind?

Is it possible for a wind turbine to absorb 100% of the kinetic energy?

What is Betz's limit as a percentage?

Explain what Betz's limit means:

Part B:

Please view the video below to answer the following questions:

<https://www.youtube.com/watch?v=RNPIRfxUTQ4>

How many blades produce the most power 3 or 4?

Why are 3 blades used instead of 2?

Part C:

Please look at the video below:

<https://www.youtube.com/watch?v=x9Plq6-qk24>

Name: _____

Now make a list of possible items you could use for the following:

The Blades

Main drive shaft

Main magnet housing

Main coil housing

Magnets and wire along with the use of a glue gun will be supplied.