Wind Power Project Project - Introduction

Design, test and redesign the best wind turbine blade you can to help solve the world’s energy problems!

Solo Project or a team of 2

This project is our attempt to tackle one of the world’s most important issues – finding a supply of energy that won’t run out and does not pollute our planet with harmful greenhouse gasses. For this project, you will be using model wind turbines to **design, build and test the best wind turbine blade you can.**

This project will include each part of the Research – Design – Create – Evaluate model. First, you should research all about wind turbines and **write up what you learned in a short design brief (about 300 words).** In your brief you must include:

* Problems which can be solved by using wind turbines
* What is a greenhouse gas and why is it dangerous?
* Basic wind turbine shapes and why they work
* Materials real-world wind turbines are made out of
* The best places in the U.S. and the World for using wind turbines (maybe the ocean?)
* What is a “Volt”, an “Amp” and a “Watt”

Then, you should come up with a **plan of action**. Your plan should include a **detailed list of design criteria** as well as **several different blueprints for blade designs**. Your blueprints should include both **size (scale) and what your blade will be made out of**. Your plan also needs a **plan for testing** which explains what your ideas for how you will **construct, test, and redesign and retest your blades.** This helps keep your main goals in mind while you work.

As you test, you should keep a **testing log** which records what you are testing and the results of each test. Your goal is to try and improve your blade each time. You should organize your testing log into a **table** which includes your **independent and dependent variables** for each test. You should do **multiple tests**, trying to improve the energy generated each time. Remember:

* **Independent variable** – This is the one you are changing/testing (for example, how long the blade is).
* **Dependent variable** – This is the one you are measuring (for example, amount of electrical power produced)

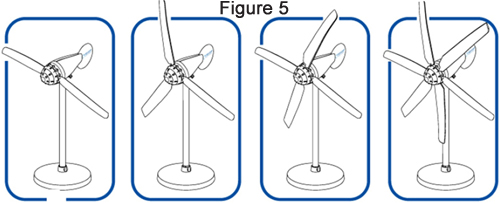
**Remember, your goals are to write a short design brief on your research, come up with plan of action including blueprints and a testing plan, keep a testing log as you test your blades, and test your blades multiple times to try and find the best design.**

**There is more information on the back of this page!!!!!!**

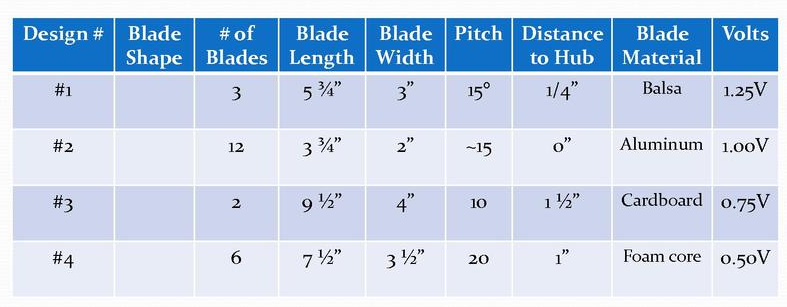
# http://www.cliparthut.com/clip-arts/43/research-clip-art-43146.gifProject Brief

* Your primary goals are to:
  1. Write a short design brief on your research:
  2. Extensively plan including blueprints and a testing plan:

* 1. Test various **independent variables** to find what makes the best wind turbine blade:



* 1. Keep a testing log as you test your blade design:



# Getting started

Your first job is to convince Mr. Simonds that you can handle doing this project. To do that, you must **answer these questions** (you may type or write your answers on a separate sheet of paper):

* What is your research plan?
  + What questions do you need to answer?
  + What are some websites you can use?
  + Who are some people you could ask to support your work?
* What resources will you need to be successful?
  + What supplies in the room will you need?
  + Will you need anything from outside of the classroom?
  + Do you need to ask Mr. Simonds to get anything from the store?
* What are some basic **design specifications** that you will use?
  + In other words, what are some specific ideas you have about what a successful project will look like? Mr. Simonds recommends a checklist.
  + Your list won’t be complete until you finish your research, but you should at least start thinking about what success will look like.

**Turn in the answers to these questions so Mr. Simonds can give you the OK!**