

Wind Turbine Blade Design Challenge

Lesson Plan

LONG VERSION (~3 class periods)

1. Build Turbine – assemble model in class, discuss the major parts of a turbine and how it works
2. Demo turbine with sample blade designs – have students hypothesize which will be best and why, demo each, discuss why or why not results matched prediction
3. Review blade characteristics – have students make a list of important characteristics
4. Assign each group characteristic – hypothesis, experimental design, test (keep notebook), conclusions (report and presentation)
5. Groups use data from characteristic experiments to build ULTIMATE design – design, build, test and refine (keep notebook and write report/presentation) fill out spec sheets on final design
6. Final Challenge – test all designs. Winner gets prize!

SHORT VERSION (1 class period)

1. Introduction - discuss the major parts of a turbine and how it works
2. Demo turbine with sample blade designs – have students hypothesize which will be best and why, demo each, discuss why or why not results matched prediction
3. Groups build ULTIMATE design – design, build, test and refine, fill out spec sheets
4. Final Challenge – test all designs. Winner gets prize!