

Wind Turbine Group Rubric 2023

Name: _____ Core: _____

STEM Standard Addressed: Engineering & Design (average of *mV* and *RPM* output determine your summative content grade).

Building Requirements:

- 1) Don't heavily glue dowels, clip or the generator (only spot glue) so they can be returned for a higher grade.
- 2) All parts of the tower except the blades need to stay inside the rectangular space.
- 3) Materials are provided in class, but you may bring in your own.
- 4) 5 lb. ballast weight must be removable.
- 5) Decoration may be added AFTER the generator and blades are functioning as a whole.

Testing Requirements:

- 1) For **Data Table 1** you need to test at least 4 blade prototypes. Each trial needs to differ by at least 2 factors (pitch, number, area, shape).
- 2) For **Data Table 2** choose your best blade configuration (don't destroy any of your blades!) and video record on Photo Booth on your laptop. Follow directions on the subpage "Wind Power" on how to analyze the RPM.

Engineering & Design Standard Assessment

	DISTINGUISHED	PROFICIENT	PARTIALLY MEETS	DOESN'T MEET
mV Output	Produces <i>very</i> high mV <i>+1,500 mV</i>	Produces high mV <i>999- 800 mV</i>	Produces moderate mV <i>599-400 mV</i>	Produces low mV <i>199-0 mV</i>
RPM Output	Produces <i>very</i> high rpm levels. <i>+350 rpm</i>	Produces high rpm levels. <i>299- 200 rpm</i>	Produces moderate rpm levels. <i>149- 100 rpm</i>	Produces low rpm levels. <i>49-0 rpm</i>

Habits of Work Standard Assessment: RESPECT for MATERIALS

	DISTINGUISHED	PROFICIENT	PARTIALLY MEETS	DOESN'T MEET
Reusable -generator -clip -hub	All materials reusable & impeccably clean.	All materials reusable & mostly clean.	One object not reusable, clean or missing.	More than one object not reusable, clean or missing.