

Design Prompt

You are tasked with designing a free standing tower for a downscaled wind turbine. The solution must leverage Additive Manufacturing Technologies and must be fully 3D printed.

The tower must support a motor-blade assembly and must attach to the assembly through the T-slot (shown below). The assembly must be able to slide into the slot and stay in place. *The motor-blade assembly will include the male side of the t-slot.*

The objective of the challenge is to *minimize the print material and the print time* as much as possible, while following the constraints listed below. A successful design is one with the least weight and prints the fastest, while satisfying all the constraints. **The group with the best design from each section will receive a \$20 gift card.**

Given the scaling factors of the turbine, the tower must meet the following constraints:

1. The height of the tower must be *at least* 18 inches (as measured from the ground to the motor).
2. The tower must support the motor (150 grams) assembled with the blades (150 grams).
3. The tower can have a maximum base footprint of 3.5" X 3.5".
4. All components necessary must be completed in one build within the build volume of 11.6" X 7.6" X 6.5" shown alongside.

