

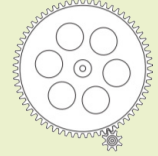
Tips for a Successful KidWind Challenge

KANSAS Kid Wind CHALLENGE

1. **Document and keep track of everything you try.** Scientists keep journals – this is a chance to practice. It's also great to have for the judge's panel.
2. **Make sure the generator and other parts are easily removable and replaceable.** We've seen many examples where a generator stops working and unfortunately, it's been permanently glued in place. Don't make the same mistake!
3. **Make the best use of your space in the wind tunnel!** You want to capture as much wind as possible, but still allow a bit of extra room so blades don't touch the sides of the wind tunnel.
4. **Allow proper airflow.** Whatever wind source you are using (a wind tunnel, single fan, etc.), make sure to allow plenty of space on both the front and backside. For example, don't put the fans close to a wall.
5. **Use a 30-ohm resistor to create a load.** At the competition, we will test your wind turbines using a 30-ohm resistor. You can either use the one built into the Vernier Go Direct Energy sensor or a separate one. Make sure you practice with a load!
6. **Be gentle with the generators.** Wires can easily become disconnected.



7. **Consider experimenting with gears.** Gears give a wind turbine mechanical advantage and multiply the mechanical force of the turning blades. Learn more at <https://mmpa.org/wp-content/uploads/2015/09/Gear-Ratios-Provided-by-Kid-Wind-PDF.pdf>. If you want to 3D print gears, files are available at <https://www.thingiverse.com/thing:3612652>.
8. **Experiment with pitch.** Changing the angle of the turbine blades can have a major impact on energy production.
9. **Consider making your turbine yaw.** Although the Kansas challenges don't require your turbine to yaw, it might be something to work on. Teams advancing to the national challenge may need to make their turbine yaw.
10. **Be prepared to present and answer questions.** At the challenge, be prepared to provide a brief presentation to the judges about your turbine design and build process. Make sure to allow at least five minutes of time to answer questions from judges.



11. **Still have questions?** Give us a call! We can answer general questions and help you find resources. If you're looking for an industry mentor, we can also help find someone through our amazing network of sponsors and supporters.