

WIND ENERGY WITH DR MARIANNA MAIARU

TALKING POINTS

1. What can renewable energy be broadly defined as?
2. How do wind turbines work?
3. How many kilowatt hours of electricity are produced by onshore wind turbines in the UK?
4. ...and how many households is this enough electricity for?
5. How many kilowatt hours of electricity are produced by onshore wind turbines in the country you live in? If you live in the UK (or the US) research another country to compare.
6. What can wind turbine blades be made from?
7. Why are computer simulations a great tool for engineering?
8. How far back in time does the field of wind energy stretch?
9. What are composite materials?
10. Take a look around you. Is there anything made from composites in the room you are in?

OUTREACH ACTIVITIES AT THE WINDSTAR CENTER

The WindSTAR Center at the University of Massachusetts Lowell in the US has provided many opportunities for introducing the basics of wind energy to middle school students. Why not contact the team to find out what they can do for you?

<https://www.uml.edu/Research/WindSTAR/about/>

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

THE KIDWIND PROJECT

KidWind helps teachers and students explore the science and technology of a world powered by renewable energy in fun and interesting ways. There are online challenges, including a Wind Turbine Challenge and a Solar Structure Challenge, and loads of activities you can do in the classroom with your friends!

To find out more about KidWind, visit: <https://www.kidwind.org/>

COFFEE CUP TURBINE PROJECT

The members of the WindSTAR Center are committed to providing educational demonstrations for teachers and students alike. For example, with a single-use paper coffee cup and a handful of other materials, students can explore the effect of turbine blade twist, taper, and chord on small wind turbine performance. You can read more about this, here:

<https://faculty.uml.edu/dwillis/wind/>

OTHER RESOURCES

The Department of Energy has a page dedicated to explaining how a wind turbine works. Very interesting!

<https://www.energy.gov/articles/how-wind-turbine-works>