

THE CHALLENGE

Wind turbines harness the energy in the wind and transform it so that we can use electricity in our homes and businesses. The energy can now be as cheap or cheaper than that from conventional generators that use fossil fuels. You might have noticed wind turbines around the local countryside and in the shallow waters around the coast. In fact, developers are now looking to deploy further offshore where the water is deeper.

How can a wind turbine operate in very deep waters? If the tower is too long the turbine will be more expensive and much weaker. One solution is to build a floating structure that the turbine can be fixed to. The structure has to be strong and steady to support the turbine without moving too much.

CAN YOU HELP?

MATERIALS

We need aspiring engineers to design and build prototypes of floating structures for wind turbines. Find a combination of floating, structural and fixing/sticking components from materials around the house to make your structure.



FLOATING WIND TURBINE CHALLENGE

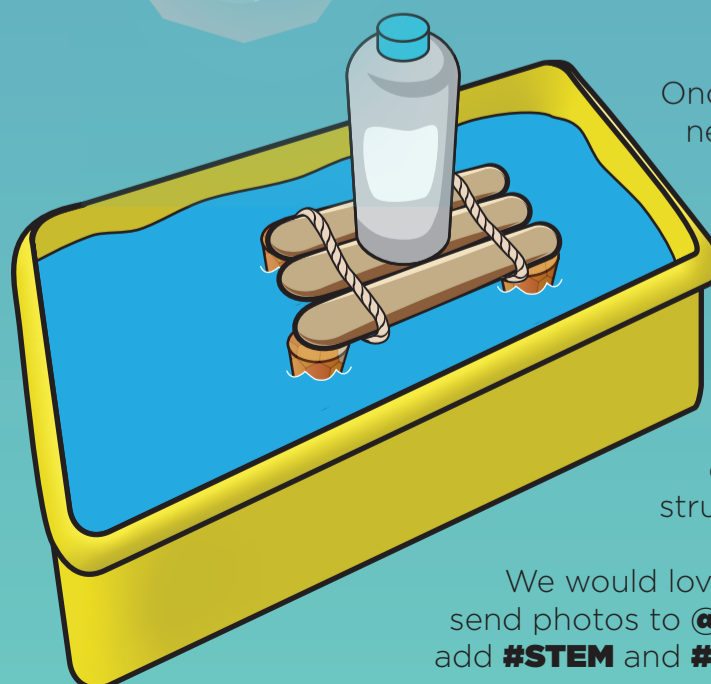
EXAMPLES



SIMPLE AND STRONG



CREATIVE DESIGN



THE TEST

Once the prototype has been built it needs to be tested. Fill a bathtub or sink with water and check the structure floats. Find an object to represent a wind turbine; can the structure support it?

BONUS TESTS:

Can your floating turbine survive extreme weather conditions? Can you make floating structures for an entire wind farm?

We would love to see your designs so please send photos to [@WindEnergyCDT](#) on twitter and add [#STEM](#) and [#STEMatHome](#). Good luck!