

Windmills use wind to turn their large blades and in turn, the blades are used to turn a generator. The generator then produces electricity. So before we engineer a windmill, we need to learn what a generator is.



A generator is a motor that creates electrical energy. Any motor that can be powered by an electrical source can also be used to create electricity. Some of you might have used a battery to power a LEGO motor. We can use the same motor as a generator.

## Challenge! - Engineer a Hand Cranking Generator

In order to make a Hand Cranking Generator work, we will use mechanical energy to turn the generator, creating electricity.



**What in the world is mechanical energy?!**

Mechanical energy is energy that does not use electricity but instead uses physical movement, like riding a bike.

***Your Challenge :** Engineer a Hand Cranking Generator to power the different electrical machines that the teacher has brought. Remember, this is your project, so you can design it however you want. Here is one example below!*

