

Brooklyn Tech Earth Day 
The Green Booklet
Mr. Bari

Door 1 

Do Now | *Video* <https://youtu.be/uFWvQzkaoBQ>


In 2008, Mr. Bari moved from Queens to the Bronx. From dawn to dusk, he searched for a recycle bin for his plastic water bottle. 13 years later he tried again -- this time he didn't even find the recycle bin. The Bronx isn't alone. In the US only 34% of trash is actually recycled. There is 254 million tons of trash produced by Americans in one year. How much trash is recycled in the US in one year?

In an effort to create a more sustainable future for the Earth, Mr. Bari promotes renewable technologies, including the wind turbine. Here's the problem to open Door 1: the blade of a wind turbine makes 30 rev/min. The blade is 80m long. The mass of the blade is 5000 kg. What's the Kinetic Energy of the wind turbine blade?

Door 2 

Big Idea | *Video* https://youtu.be/xagKyq_cSs4

Soborno Isaac teaches his older brother the importance of recycling, and how it promotes a more sustainable future for the Earth. In the video, Isaac states that 75% of trash is recyclable. Here is the key for Door 2: there is 254 million tons of trash produced by Americans in one year. If there are 60 containers, how many should be recycle bins? How many should be trash cans?

Door 3 

Exit Slip | *Video* <https://youtu.be/uFWvQzkaoBQ>

To create a sustainable future for the earth, we need green technologies, including solar power and wind turbines. Here is the key for Door 3: Solar Panels use Einstein's Photoelectric effect to create sustainable electricity. The metal of the solar panel has a work function of 3.06×10^{-19} J. Light with a wavelength of 450nm shines on the surface of the metal. What's the speed of the ejected photoelectron?

Homework | *Video* https://youtu.be/xagKyq_cSs4

1. Did Mr. Bari find the Recycle Bin 13 years later? (Hint: Video 1)
2. Why did Refath change his behavior? (Hint: Video 2)