

Topic	Potential Energy v. Kinetic Energy	Lesson 2
Objective	Students will demonstrate understanding of the difference between stored energy (PE) and energy of motion (KE) by their ability to verbally explain the transfer between PE and KE in the Savonius Helix Rotor or similar models.	
Essential Question	What's the difference between PE and KE?	
<u>State Standards</u>	4.1e Energy can be considered to be either kinetic energy, which is the energy of motion, or potential energy, which depends on relative position. Page 30	
<u>Related Standards</u>	ELA Standard 1 Students will read, write, listen, and speak for information and understanding. ELA Standard 3 Students will read, write, listen, and speak for critical analysis and evaluation.	

Components:

Hands On	Students construct a wind turbine to raise a 10 g weight off the floor. The wind turbine illustrates the change from KE (wind) to gravitational potential energy.
Discovery	Students can vary the speed of the fan or the mass of the object and time how that affects the rate at which the object is lifted off the floor. From this data they can draw conclusions about transfer of energy.
Real World Application	
Results/Assessment	
Enrichment or Further Development	Students can compile a three column list of items that have PE, KE, or both. (ie. Book on shelf, car driving, sky diver) (Can be done as a game show style) Click here for a PHET simulation of a skate boarder and transfer between kinetic and potential energy. Click here for a "Who Wants To Be A Millionaire"™ style online game entitled "Kinetic vs. Potential Millionaire Game". The level might be too difficult for this early in the unit and might be better placed at the end as a review.
POPS	