PHET: Energy Forms and Changes

Directions:

1. <https://phet.colorado.edu/en/simulation/energy-forms-and-changes>
2. Select “ Energy Forms and Changes” click on the “Systems” icon.
3. Make sure to check the box next to the “ Energy Symbols” so you can see how the energy is being transformed.
4. Now on the “ System Screen ” build your own system!!!! Select an Energy Source and observe the energy moving through the system of your choice. Play around with each type of E source, and discover how E is converted along the way!

|  | Input | Transformer | Output | Is there E transformation? If yes, explain. |
| --- | --- | --- | --- | --- |
| 1 | Water | Wheel | Fan | Yes because it just produces electrical energy and mechanical energy. Also it is energy because the water runs the wheel and the wheel runs the fan which produces energy. |
| 2 | Sun | Solar Panel | Fan | Yes because the sun produces light that is absorbed into the solar panel. The solar panel sends the light from the sun to the fan and the fan starts moving which makes energy. |
| 3 | Sun | Wheel | Fan | No because the sun can not turn the wheel and if the wheel cannot turn then the fan won’t start and it won’t produce energy. |
| 4 | Sun | Solar Panel | Beaker of Water | Yes because the sun produces light which is absorbed into the solar panel and it is absorbed into the beaker of water which makes steam and produces energy. |
| 5 | Add some clouds. What happens? Remove all cloud cover? What happens? Why? | | | When you add some clouds the sun is blocked and the light cannot get to the solar panel to produce energy. When you remove the clouds it gives the sun produces light and it is absorbed into the solar panel and makes energy. |
| 6 | Water | Wheel | Old School Light Bulb | Yes because the water turns the wheel which turns on the old school light bulb and makes energy. |
| 7 | Water | Wheel | LED | Yes because the water turns the wheel and then the LED turns on. |
| 8 | Is there a difference between the (#4) "old school light bulb" and the (#3) LED light bulb? Explain. | | | Yes because they are both light bulbs and the only difference is they look different. |
| 9 | Tea Pot | Wheel | Fan | Yes because the teapot creates steam and that turns the wheel which makes the fan go on. |
| 10 | Biker | Wheel | Fan | Yes because the biker turns the wheel and that turns the fan on which produces energy. |
| 11 | Watch the biker ride for approximately 30 seconds…..   1. What happens to the biker? Explain. 2. What type of E does the biker need to continue riding? | | | The biker starts peddling and getting tired and then when he is all out of breath you have to feed him. To continue riding he needs to have chemical energy. |