Activity	Materials	Reasoning	Directions
Monday			
Windmill	Paper Push pin Pencil Scissors	Windmills have been around for centuries and help turn wind into mechanical energy. One of the biggest misconceptions with windmills is that they are not wind turbines. However, this is not the case since windmills and wind turbines are actually very different even though they both use wind to convert energy. Windmills turn the wind into mechanical energy to help with traditional farming techniques such as milling crops or grinding grain. On the other hand, wind turbines turn wind into electricity that is used for commercial use such as electricity for homes, buildings, and much more. Windmills also have a much bulkier appearance than wind turbines since they have heavier and bigger blades that move around a fixated shaft in the middle of the windmill. This shaft allows the blades to move in a circular motion creating different air pressures when the blades move. This different air pressure allows for the wind to be harnessed and turned into mechanical energy.	1. Cut approximately 2" off the end of a piece of paper so that it is a square 2. Fold the paper diagonally to touch the opposite corners together. 3. Unfold the paper, then fold the paper diagonally in the other direction to connect the other two corners. 4. You should have created 4 equal triangles 5. From each of the 4 corners, make a cut with your scissors that goes halfway to the center of the paper 6. Pull one of the corners from each of the triangles slightly over the center of the paper (you must use the same corner from each triangle for this to work). 7. Push the pin through the center of the paper, then into the eraser of your pencil 8. Take your windmill outside in the wind to see it move.
Balloon Car	Cardboard 3" x 6" Balloon BBQ skewer Straw Plastic bottle caps Tape	Energy can be created in a lot of different ways. Energy is the ability to do work, in this case, moving an object. Using the elasticity of a balloon can propel a miniature car. We can see how potential energy increases when the balloon is full, and how that turns into kinetic energy when the air is released. This activity also demonstrates Newton's 3rd law of motion, which states that "for every action, there is an equal and opposite reaction."	1. Cut a piece of cardboard in a rectangle, approximately 3" x 6". 2. Cut the straw in 3 pieces, so that two of the pieces measure 3" to match the width of the cardboard. 3. Attach two of the pieces of straw to the bottom of the cardboard with a piece of tape, approximately 1" from each end. 4. Cut the BBQ skewer in two pieces that are each 4" (this can be difficult to cut, you may want help from an adult). 5. Poke a hole in the center of the plastic bottle caps (you may want help from an adult with this as well as it can be difficult). 6. Put the pieces of BBQ skewer in the straws, and attach the bottle caps to the end to make the wheel and axle. 7. Cut the rim off of the balloon 8. Place the remaining piece of straw in the balloon about 1". Wrap the end of the balloon tightly around the straw and attach with a piece of tape. Make sure there are no gaps for air to escape. This can be tricky, it helps to have someone help hold the balloon. 9. Attach the balloon/straw to the top of the balloon car, allowing enough space so that you can blow through the straw to inflate the balloon. 10. Inflate the balloon and watch your car go!
Solar Sweet Tea	Cup Water Tea bag Sugar Ice	Solar energy can be used for a lot of purposes. The sun transfers heat through a process called radiation. Radiation is the sunlight and energy that comes from the sun. Solar radiation travels to the Earth and brings heat. In this case, we will use the thermal energy (heat) of the sun to heat water. Water needs to be heated in order to make tea. When we add the tea bag, we need to let it "steep" in warm water in order to turn into tea. We will use the heat from the sun to help do that, instead of using a stove top.	1. Fill a cup with water and place a tea bag in the cup. 2. Place the cup in direct sunlight for at least one hour. 3. Then, add sugar and ice to make the sweet tea.