

Ladies and Gentlemen...  
**The Beetles!**



As the name suggests, the Japanese beetle is native to Japan. The insect was first found in the United States in 1916 in a nursery near Riverton, New Jersey. It is thought the beetle larvae entered the United States in a shipment of iris bulbs prior to 1912, when inspections of commodities entering the country began. "The first Japanese beetle found in Canada was in a tourist's car at Yarmouth, arriving in Nova Scotia by ferry from Maine in 1939. During the same year, three additional adults were captured at Yarmouth and three at Lacolle in southern Quebec."

*"A perfect summer day is when the sun is shining, the breeze is blowing, the birds are singing, and the lawn mower is broken."*

~ James Dent

**Ketchup!**

In the 1690s the Chinese mixed together a concoction of pickled fish and spices and called it kôe-chiap or kê-chiap meaning the brine of pickled fish. By the early 18th century, the table sauce had made it to the Malay states (present day Malaysia), where it was discovered by British explorers, and by 1740, it had become an English staple. The Malay word for the sauce was kěchap. That word evolved into the English word "ketchup." Many variations of ketchup were created, but the tomato-based version did not appear until about a century after other types. By 1801, a recipe for tomato ketchup was created by Sandy Addison and was later printed in an American cookbook, the Sugar House Book.

**Let There Be (Solar) Light!**  
**How Solar Lights Work**

Solar landscape lights are becoming very popular not only for energy saving but ease of installation as well. How do solar lights work?

In a nutshell, solar lights work by absorbing and storing solar energy from sunlight during the day and then using that energy to power LED bulbs at night.

Solar lights consist of four main parts:

**Solar Panel**

A solar panel is used to convert solar energy from natural Sunlight into electrical energy. Trying to have solar panels absorb indoor lighting from light bulbs in your house is inefficient and you won't convert as much energy as you could by placing your solar panels outdoors in the natural sunlight.

**Power Storage (battery)**

Once the solar panel absorbs solar energy, it converts it into electrical energy. That electrical energy needs to be stored somewhere, and typically a type of rechargeable battery is used to store that electrical energy.

**Photoresistor (darkness sensor) or Motion activated**

When the sun goes down and it gets dark, your solar light's power storage should be fully charged and ready to brighten up the night. It would be a pain to have to go to every solar light and turn the solar lights on. Therefore, most solar lights use a photoresistor that detects when it is dark (nighttime) and allows the power storage to let energy flow into a lighting device. Some solar lights use a motion detection device to only turn on the solar light when motion is detected. This saves more power by only consuming energy for light when turned on by motion.

**Lamp type**

Solar lights are most likely using small LEDs. They need very little power and can operate up to 15 hours on a full charge. More expensive solar lights use multiple LEDs and sometimes a small halogen light to provide stronger lighting.

**Getting the Most Out of a Solar Light**

Placement of a solar light is all-important. For maximum solar gain, the solar cell should face due south and be positioned on an angle so it is perpendicular to the sun. The surface of the solar cell should not be shaded by foliage or structures at any time during the day. If the light has an automatic on-off sensor, it should not be placed near any other bright light source, such as a street lamp, because it may cause the light to shut off prematurely.



The modern photovoltaic cell was developed in 1954 at Bell Laboratories. The highly efficient solar cell was first developed by Daryl Chapin, Calvin Souther Fuller and Gerald Pearson in 1954 using a diffused silicon p-n junction. At first, cells were developed for toys and other minor uses, as the cost of the electricity they produced was very high - in relative terms, a cell that produced 1 watt of electrical power in bright sunlight cost about \$250, comparing to \$2 to \$3 for a coal plant. Way back in 1931, Thomas Edison wrote the following in a letter to Henry Ford: "I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that."