

Laptops and Proper Battery Care

As technology advances, laptops are becoming more and more popular. People appreciate their portability, ease of setup, and lack of messy wires. However, there is one very large disadvantage to laptops especially when entities use them in large quantities: batteries.



Unfortunately, batteries have a very finite lifespan. They are also very expensive to replace. An average price range is usually \$100 - \$125 each. With an aging fleet of laptops in the district it is imperative that staff members make an effort to ensure maximum usefulness and longevity of their laptop batteries.

“How long do laptop batteries typically last?”

Batteries typically last 300-500 “charge cycles” which is defined as 100 percentage points on your battery gauge. This means if you discharge your battery by 50% and recharge it, doing so twice adds up to one full cycle. Age is also a factor. Chemicals that make up lithium-ion batteries begin to oxidize immediately after the battery is manufactured. It is typical for batteries to last about three years. Note that the warranty on laptop batteries is one year even if the computer itself has a three year warranty.

Several factors can affect whether you will get 300 or 500 cycles. Temperature and charge level are big ones:

Credit: <http://www.batteryuniversity.com/parttwo-34.htm>

Temperature	Capacity loss at half-charge	Capacity loss at full-charge
32°	2% after one year	6% after one year
77°	4% after one year	20% after one year
104°	15% after one year	35% after one year

Lithium-ion batteries last the longest when kept cool at a 40% charge. There is no “memory effect” like the older nickel-cadmium batteries so it is okay to keep them around half charged. Most users keep their laptops plugged in all the time to “save” the battery. Unfortunately, this is a problem as it is actually detrimental to battery life.

“How can I increase the charge cycles of my laptop battery?”

- If you leave your laptop plugged in often for prolonged periods of time, it is recommended that you remove the battery from the laptop with a 40% charge.
- Avoid fully discharging the battery, with the exception of the re-calibration procedure.
- Re-calibrate your battery *once* every three months to maintain accuracy of the gauge. To re-calibrate your battery you must fully charge, then fully discharge the battery.
- Avoid leaving your battery in the heat, i.e. the car, in sunny window sills, etc.

“What can I do to make a single battery charge last longer?”

- Choose power saving options by clicking on your battery icon.
- Run only the applications that you are using. Multitasking consumes power.
- Avoid using your hard drive or optical drive on battery power. iTunes uses the hard drive while running.
- Dim the brightness of your display. The backlight consumes a lot of energy.

Useful Websites for Battery Care:

<http://support.apple.com/kb/HT1446>

<http://www.apple.com/batteries/>

<http://www.apple.com/batteries/notebooks.html>