



FUN PALACE 2018 DIY Laptops

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We void warranties and you save money when an expert helps you discover how to replace batteries, add RAM or change a hard drive .

Activity Details

Type

ticketed sit-down activity

Duration

30 min

Deliveries

4

Learning Outcomes

Participants will be guided through simple disassembly of a laptop using tools provided. By removing and replacing battery, RAM and hard drive, they will have an opportunity to overcome fear of damaging the device, and also ask questions of the facilitator to extend their knowledge. Information about sourcing replacement parts can be provided during informal discussions.

Facilitator notes

- What tools do you need to take the back off a laptop?
- How is it possible to do irreparable and expensive damage?
- What tricks and traps exist (seating RAM, mixing up cables etc)
- How do you dispose of damaged parts?
- Where can you buy replacements?

Session Plan

It's time to get started!

Place your laptop upside down on the desk in front of you, so the underside is facing you.

Static

Before you touch anything inside your computer discharge any static electrical charge you might have on your body, as static 'shock' can damage electronic components. This is as simple as touching a large metal object before touching any components.

Inside The Back Casing

By the end of the workshop you'll be able to name and describe the easily replaceable parts in this laptop.

Battery



Let's start by removing the battery, which is a very easy process;

- Slide the battery release latch, which will release the battery from the battery bay.
- Lift the battery out of the bay and place to the side.

Let's look at what information we can find on the battery;



- Manufacturer and model numbers
- Safety information
- Disposal information
- Replacement info sticker

If your laptop battery is no longer working, only powering on when plugged in, then replacing the

battery is one thing you can do easily to continue the life of our portable computer.

Inside The Battery Bay

After we've removed the battery, we can see a lot more information inside including model and serial numbers, regulatory info and possibly a sticker outlining the operating system originally installed.

- Inside the battery bay there is also a slot to insert a SIM card (subscriber identity module), similar to how you insert a SIM card into your mobile phone.
- The SIM slot is for WWAN (mobile broadband). Phones are typically provisioned differently so your phone SIM probably won't work properly in the SIM slot.



Remove Back Case

Now let's remove the back case component and see what more we can get at. While the computer still has the backside facing you, remove the 2 screws from the back casing so we can locate the Hard Drive and other easily replaceable items.

- We'll need a small Phillips head screwdriver to remove the 2 screws holding it in place. Don't lose these screws so put them in a safe spot, they are very small!
- Slide the plastic casing off to detach from the computer.

Let's now take a look inside at what we can easily access.



Hard Drive

The hard drive - also called a is a permanent store of information or *data*. This is where we will install the Operating System later, and where you will store your files like music, movies or documents. The amount of information stored, or *capacity* is measured in gigabytes.

- With the back cover off we can remove the hard drive easily, it should look like a small silver box (pictured).
- Undo the screws holding the HD in place, slide the HD forward then pull out using the plastic tab that should be attached.
- Lift the drive straight up and out.
- The silver bracket enclosing the drive can be removed if you intend to replace the hard drive.

The hard drive label should give you all the info you need to upgrade or replace the drive:

- The capacity in gigabytes
- The form factor (the physical size measured in inches)
- The speed at which it spins
- The manufacturer



Random Access Memory (RAM)

RAM is where your computer stores data it uses to run programs. Unlike your hard drive, the data in RAM is gone when you turn off your computer.

- To remove the RAM, open the silver brackets holding it in place by pulling them out slightly, then the RAM will tilt up and you can slide out by grabbing the edges and pulling it out gently.
- Slide the RAM out
- Once the ram is free don't touch on gold parts. Why? Your skin cells and sweat can cause corrosion
- Also don't touch the memory chips. Why? Static electrical discharge can easily damage or destroy memory chips.
- Examine the label for clues about the replacing or upgrading your RAM. To find your RAM in a shop you will need to match the **module name** which is written on the stick, to the **standard name** which is what the RAM is sold as.



RTC Battery

- The RTC Battery (or CMOS battery) is a battery that powers the Real Time Clock (hence the acronym RTC) to run all the time, even when the computer is turned off.
- These batteries can last up to 10 years, if your computer is powered-on all the time, its battery will last much longer.
- If your computer is losing its time or date settings, or you are receiving a message CMOS Read Error, CMOS Checksum Error, or CMOS Battery Failure, the CMOS battery needs to be replaced.



WLAN Module

- The WLAN module is your wifi.
- Both Wi-Fi (wireless fidelity) and WLAN (wireless local area network) mean the same — they both refer to a wireless network.



Materials Req

1 laptop per facilitator (if done as 1 : 1 activity). Best if all machines used are the same model.

Equipment Req

1 x Small Phillips head screwdriver 1 x Small container to hold screws as they are removed

Files

Reflections Learnings

Gallery