What is Green Computing

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Defining Green Computing
What Green Computing is NOT!

- Color
- Money
Sustainability

Merriam-Webster definition of Sustainability

“of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged”
What resources are we talking about?
Case - Metal & Plastic
Circuit Boards, Wires & Power Supply
Wires - More Metal & Plastic
Circuit Boards
Printed Circuit Boards (PCBs) have lots of stuff in them

- **40% Metal**
  - Cooper, Aluminum, Lead, Nickel, Iron, Tin, Gold & Silver

- **30% Ceramics**
  - Silicon dioxide & Aluminum oxide

- **30% Plastics**
  - Polyethylene, polypropylene, polyester, epoxy, PVC & polytetra-flouroethane to name a few

- Source: [http://repository.up.ac.za/bitstream/handle/2263/13172/Ogunniyi_Chemical(2009).pdf?sequence=1](http://repository.up.ac.za/bitstream/handle/2263/13172/Ogunniyi_Chemical(2009).pdf?sequence=1)
Power Supply
More of the same

We’ll come back to energy consumption
What makes a computer “green”

- Back to definition -
  method of harvesting or using resources ... not permanently damaging

- Computer’s Life Cycle
Three Stages in the Life of a Computer

1. Manufacturing
2. Usage
3. Disposal
1. Greener Manufacturing

- Recycled content
- Less harmful contents (e.g., RoHS)
- Less energy consumed making it
2. Greener Usage

- **Energy Consumption & Efficiency**
  - Look for the most efficient power supply
  - Only have it powered on when it is being used
    - not as easy as we would want it to be - backups, remote access, system maintenance, et.c
  - Throttle energy consumption based on workload
- Use power management settings effectively to maximize efficiency
- Extend the life of the computer
3. Responsible Disposal

- Two Programs on Campus:
  - Admin Renewal, DITR SLA and IS&T can recycle computers through Intechra Recycling Contract
  - All Departments can Recycle Computer through Facilities’ eWaste Services
Intechra Recycling through IS&T DITR

- Picked up by IT Deployment & Maintenance Services (ITDMS)
- Covers
  - IS&T
  - SLA Clients
  - computers part of desktop renewal program
- Items are deactivated with Property
- Stored securely
- Vendor securely wipes and destroys the drives
- Resell machines if possible, or recycles responsibly
How to request pickup for Intechra Recycling

- email ddm@mit.edu with
  - number of items
  - location
  - date and time
eWaste through Facilities

- [http://web.mit.edu/facilities/environmental/reuse.html#ewaste](http://web.mit.edu/facilities/environmental/reuse.html#ewaste)

- No Charge for items that weigh less than 50 lbs such as:
  - Copiers
  - CRTs
  - CPUs
  - Laptops
  - Fax Machines
  - and more
How to Recycle through eWaste

- Submit a request through SAPweb “Recycling & Trash” on Building Services page

- **Note:** Before recycling electronic material, make sure that you deactivate the Property Office sticker and erase the hard drive to remove sensitive data.

- [http://web.mit.edu/facilities/environmental/reuse.html#ewaste](http://web.mit.edu/facilities/environmental/reuse.html#ewaste)
What happens to the computers

- Goes to a materials recycling facility in North Andover, MA
- MIT receives certificates of destruction stating that the materials are disposed of in an environmentally sensitive & secure manner.
- MIT gets credit back towards a reduction in our monthly electronics recycling bill based on the value of the recycled contents.
Questions?

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