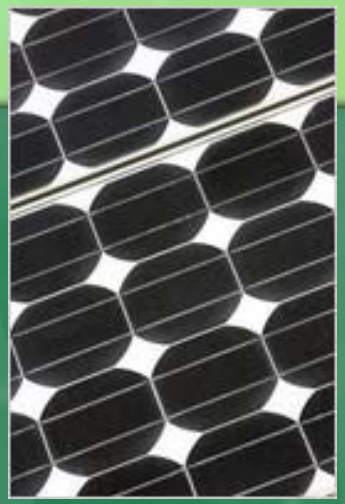
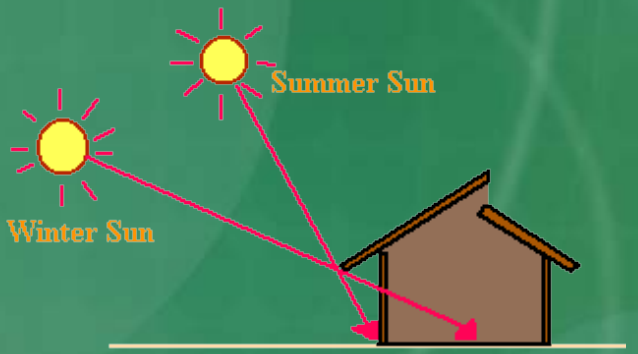
Lets Design a…

Net-Zero Energy Classroom!

Create Power on Site

- Active Solar – PV (Photovoltaic) Panels convert sunlight into electricity.
- Wind Power – When the wind blows, the blades spin a turbine which generates electricity.
- Passive Solar Heating –Light shines through south facing windows and warms the inside space.
- Daylighting – Use outside light instead of turning on lights.



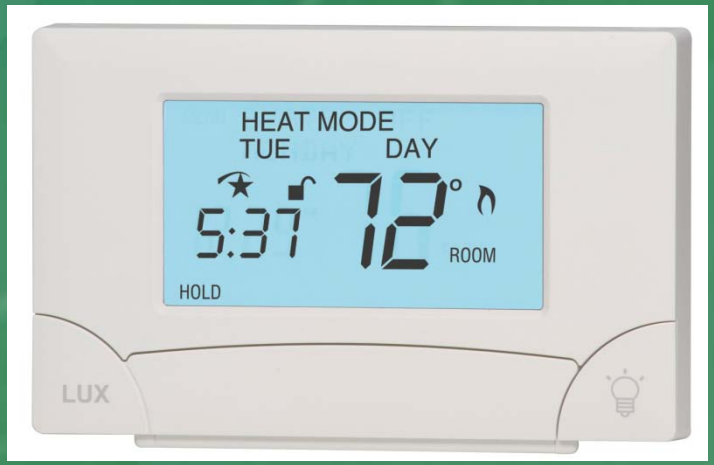


Efficient Use of Power

- Lights – CFLs (spiral bulbs) use ¼ the energy of incandescent lights (regular bulbs).
- Computers – putting computers, speakers and monitors on a power strip that you can turn off saves energy when you are not using it.
- Air Conditioning and Heating – power is needed to run a fan that blows air into the space and to power the heating and cooling device. Very efficient models are available.

Monitor and Controls

- **Smart Meter –**
  - **Tracks the total amount of power being used and communicates with the utility.**
  - **Allows extra energy to flow into the grid. The utility will use your extra power and pay you $$$ for it.**
- **Programmable thermostat –**
  - **Allows temperature to adjust when occupants are not in room. Saves heating and cooling energy.**



Water Conservation

- Water storage tank – rain water that hits the roof is collected and stored to water plants or even to flush toilets
- Xeriscape – Using native plants or lawn features that do not require much or any watering.

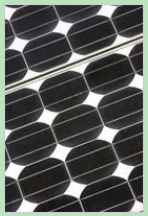
Reducing Waste

- Recycle – paper, bottles, cans and other items can be recycled instead of being put in the trash can and ending up buried in the ground.
- Compost – Food scraps can be put in a compost pile where they will decompose. Compost makes nutritious soil for plants.

Have fun!

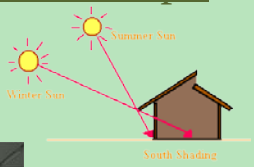
References

http://www.america.gov/st/env-english/2008/February/20080228144750lcnirellep0.1695825.html



https://www.eere-pmc.energy.gov/PMC_News/EERE_Program_News_7-08.aspx

http://dnr.louisiana.gov/sec/execdiv/techasmt/ecep/drafting/c/c.htm



http://windows.lbl.gov/comm_perf/newyorktimes.htm

http://www.deq.mt.gov/Energy/conservation/homes/ExistingHomes/lighting.asp

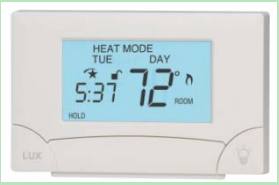
http://www.roanokecountyva.gov/Departments/Library/ComputerClassSchedule/Default.htm

http://www.cpsc.gov/cpscpub/prerel/prhtml04/04569.html

References (cont'd)

http://www.cpuc.ca.gov/cleanenergy/design/2008conferences.html

http://www.energystar.gov/index.cfm?c=cool_change.coolyourworld_product_images



http://www.cstx.gov/home/index.asp?page=1049

http://www.fws.gov/Pollinators/PollinatorPages/PollinatorWeek08.html

http://www.durhamcountync.gov/departments/gnsv/recycle/Recycling_Bin.html

http://www.flagstaff.az.gov/index.asp?NID=963

http://www.aci.az.gov/images/parks_rec/low_bike_rack.jpg