

## EPAHS TECH TEAM BOOT CAMP: Day 2 Plan

### Operating Systems:

- [Handout] Installing Win2K Pro (for use in class)  
Includes basic network configuration.

### Review from Day 1:

- [Handout] [Hardware Identification Contest]  
Can be completed while waiting for SW installs ...

### Networking:

- Understand the basic concepts of computer networking, including the idea of packet switching and the variety of protocols
- Punch down a "run" from a CAT5 RJ45 outlet to a CAT5 patch panel. Use Network Test Equipment (Toner, T568B tester) to verify correct operation.
- Create a mini-LAN using patch cables and a switch. Trace the path of Internet data from your computer to the telephone pole. (Tour of school LAN, MDF)
- Understand the key elements of TCP/IP, and configure a Windows 2000 PC both manually and using DHCP.
- Explain the parts of a proper IP setup, including address, subnet mask, gateway, and DNS servers. Solve troubleshooting games where some of these are incorrect.

### Troubleshooting:

#### Systematic Approach to Troubleshooting

Well-defined procedure for troubleshooting, including triage, trying simple explanations first, power-cycling, swapping with a known-good module, and applying the scientific method.

#### The Troubleshooting Game

Student teams are allowed to insert a fault into a computer system, under controlled conditions including instructor permission and prior prediction of the consequences. Then each team prepares a trouble ticket describing the resulting symptoms (but not the cause) from their fault. Teams exchange trouble-tickets and race to resolve each others' problems. Variations include versions where the instructor inserts faults to illustrate specific topics, and versions where winning is based on writing the best trouble ticket. Other variations include a "help desk" scenario where one team describes their problem "over the telephone" and the other team must analyze it and direct the user to gather additional information, without seeing the screen.

#### [Login to Online Work Order System]

- Configure a laptop computer to access the network using 802.11b wireless technology.
- Understand the difference between authentication to the local workstation versus authenticating to a domain controller (server), and solve problems relating to inability to access the server
- Explain the key benefits of saving work on a server
- Explain other reasons for using a computer network

- Use concepts such as "known good" to isolate problems ranging from defective cables to switches needing to be reset (power-cycled) to problems upstream
- Use Command Prompt to investigate networking problems using tools such as ipconfig, ping, and traceroute.