All Systems Go!

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Theme: Systems

Big Idea: Understanding a system allows you to achieve the full potential of that system

Standards:
Microsoft Certified Professional
VET

Need to Know Questions:

1. What is the purpose of a system?
2. What are the components that make up a system?
3. How do you setup system?
4. How do you troubleshoot a system?
5. What makes one system better than another?

Mission:
You have just arrived, with your computer, at the Bendigo Computer Game. It's early Friday evening, and no one can get their computer to communicate with anyone else's computer. No LAN games are happening! The others are asking whether anyone has any thoughts on what's going wrong. They're looking to you. You need to solve the problem and get the games going. [The classroom would be setup with the switch disconnected and a number of computers set up with static IP addresses.]

1. Examine your TCP/IP address using the ipconfig command at the command prompt.
2. What does the ipconfig command tell you?
3. Collect the different responses from the ipconfig command from all other students in your classroom.
4. As a class Discuss what the possible causes of the apparent problem are.
5. Suggest possible troubleshooting steps.
6. Implement the agreed troubleshooting steps
7. Write down what was found to be wrong and what was the eventual solution was.

Multiple Intelligences

Verbal/Linguistic

- Create a dictionary of terms from the units covered.
- Guest Speaker – have network manager from organization within BSSC come and visit

Logical

- Detail the steps involved in diagnosing problems with TCP/IP network connectivity.
- Follow logical, methodical steps in troubleshooting a network problem.

Visual/Spatial

- Design the layout of a network, including subnets, routers, servers and peripherals.
- Redesign a server closet to make the most of the space provided.

Musical

- Describe the process you go through when troubleshooting networking connectivity.
- Similarities and differences between notebook and desktop requirements.

Kinesthetic

- Connect and disconnect network cables.
- Install and remove hardware items.

Interpersonal

- Bring in outside expert
- Short test created from groups within the class

Intrapersonal

- Which operating systems do you think is the best? [This would need to be discussed to become Intrapersonal. Having their own opinion and a forum to defend their opinion.]
- What do you think about a world with one OS?

Naturalist

- Work out a file structure with permissions for a given organization. Explain Why?
- Rank and sort components of network as part of the troubleshooting process.

Existential

- Demonstrate an understanding of how the network impacts on lives within the school community.
- Apply the concept of systems to people in their different roles on campus.

Culminating Event
Set up an Operating System with IIS and SQL. You need to develop a web site which allows a classroom to be booked online. The database will also need to allow teachers the ability to check whether a classroom is booked. Document how this was achieved.

Resources

Books

CCNA Cisco Certified Network Associate Study Guide, 4th Edition (640-801) by Todd Lammle

Computer Networking: A Top-Down Approach Featuring the Internet by James F. Kurose

Computer Networks, Fourth Edition by Andrew S. Tanenbaum

Computer Networks: A Systems Approach, 3rd Edition by Larry Peterson

How Networks Work (6th Edition**)** by Frank Derfler

Microsoft Windows XP Networking Inside Out by Curt Simmons

Network+ Certification All-in-One Exam Guide, Second Edition by Michael Meyers

Network+ Exam Cram 2 (Exam Cram N10-002) by Mike Harwood

Network Analysis and Troubleshooting by J. Scott Haugdahl

Networking for Dummies, Sixth Edition by Doug Lowe

The Practice of System and Network Administration by Thomas A. Limoncelli

Sams Teach Yourself Network Troubleshooting in 24 Hours (2nd Edition) by Jonathan Feldman

TCP/IP Network Administration (3rd Edition; O'Reilly Networking) by Craig Hunt

Troubleshooting Campus Networks: Practical Analysis of Cisco and LAN Protocols by Priscilla Oppenheimer

Troubleshooting, Maintaining & Repairing Networks by Stephen J. Bigelow, et al

Upgrading and Repairing Networks, Fourth Edition by Scott Mueller

Songs

Building the Perfect Beast – Don Henley

Communication – Pete Townshend

Games without Frontiers - Peter Gabriel

My Computer - Prince

OK Computer (album) – Radiohead

Trans (album) – Neil Young

Web Resources

3Com Network Troubleshooting Overview
http://support.3com.com/infodeli/tools/netmgt/tncsunix/product/091500/c1ovrvw.htm

Interactive Ethernet Network Troubleshooting
http://www.networkcomputing.com/netdesign/troubleintro.html

Microsoft
http://www.microsoft.com

Network Architecture
http://teachers.work.co.nz/network_arch.htm

Network Systems Design Using Network Processors
http://www.npbook.cs.purdue.edu/

Network Troubleshooting
http://www.networktroubleshooting.com/

Principles of Network System Design
http://www.acm.org/crossroads/columns/connector/may2001.html

Songs of Science and Technology
http://www.unik.no/~terjew/songsof.html

TCP/IP Gaming in a Mixed Network
http://www.atpm.com/6.07/networking.shtml

The 10 Truths of Network Troubleshooting
http://www.packet-level.com/archives/archives10.htm

Troubleshooting Network Games
http://compnetworking.about.com/library/weekly/aa011401a.htm

Troubleshooting Windows 95/98 Network Connection Problems
http://support.microsoft.com/default.aspx?scid=http://support.microsoft.com:80/support/kb/articles/q192/5/34.asp&NoWebContent=1

UC Santa Cruz - Network Troubleshooting
http://www2.ucsc.edu/cats/sc/tools/network-troubleshoot/index.shtml

Assessment

Participation	Needs Improvement 1	Satisfactory 2	Exemplary 3
Participates in class activities.	Occasionally when interested in the task.	Regularly whenever prompted to join.	Consistently with interest and enthusiasm.
Cooperates with peers.	Depends on whom he or she is working with.	Shares and works cooperatively.	Serves as a role model for sharing and cooperating.
Is a collaborative partner.	Does not share ideas or does not listen to others.	Collaborates to successfully complete tasks.	Is a class leader in forming collaborative partnerships.
Demonstrates an understanding of the dynamic of systems.	Does not demonstrate an understanding of systems.	Demonstrates a working understanding systems.	Demonstrates a working understanding of systems and applies it to new and different situations.
Demonstrated mastery of skills specified in state standards.	Did not meet the minimum requirements for state standards targeted in this unit.	Met the minimum requirements for state standards targeted in this unit.	Exceeded the minimum requirements for state standards targeted in this unit.

Project	Needs Improvement 1	Satisfactory 2	Exemplary 3
Is done neatly with attention to detail.	Project is incomplete or lacks sufficient depth.	Project is neat and shows attention to detail.	Project is neat, shows attention to detail and exhibits craftsmanship that goes beyond grade level expectations.
Is based in an identified content area of the unit.	Is not related to any content area being studied under the theme of systems.	Is based in one identified content area.	Is based in two or more identified content areas.
Applies skills and concepts in a new or different way.	Project imitates objects or examples studied in class.	Project demonstrates mastery of skills and concepts in a unique way.	Project demonstrates mastery of skills and concepts in a unique way at the highest levels of thinking.
Adds to the class study of systems.	Does not add to the class experience or understanding of systems.	Adds to the class understanding of systems.	Adds to the class understanding of systems by elevating the level of discussion or activity.
Demonstrates high personal standards for work.	Does not demonstrate high personal standards in the completion of the project.	Demonstrates high standards for work as outlined by the teacher and/or class.	Demonstrates high personal standards for work that exceeds teacher expectations.