

REVIEW LESSON

MTA Course: 98-366 Networking Fundamentals

Lesson name: Understanding Network Infrastructures 1.2_B

Topic: Understand local area networks (LANs)

(Two 50-minute class period – One Part A and One Part B)

File name: NetFund_RL_1.2_B

Lesson Objective

1.2_B: Understand local area networks (LANs). *This objective may include but is not limited to:* perimeter networks; addressing; reserved address ranges for local use (including local loopback IP), VLANs; wired LAN and wireless LAN.

Preparation Details

Prerequisite student experiences and knowledge

This MTA Certification Exam Review lesson is written for students who have learned about networking fundamentals. Students who do not have the prerequisite knowledge and experiences cited in the objective will find additional learning opportunities using resources such as those listed in the Microsoft® resources and Web links at the end of this review lesson.

Instructor preparation activities

- None

Resources, software, and additional files needed for this lesson

- NetFund_PPT_1.2_B
- If possible, have examples of network hardware available for demonstration, as described in *Suggested best practices*.

Teaching Guide

Essential Vocabulary

virtual LAN (VLAN)—a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location.

wired LAN—a network in which all nodes are interconnected with physical media, such as twisted pair cabling and network adapters. Wired LANs require central devices like hubs or switches.

wireless LAN—a LAN designed without the use of interconnecting wires or cables, instead communicating by radio, microwave, or infrared light.

Lesson Sequence

Activating prior knowledge/lesson staging (Anticipatory Set: 5 minutes)

Answer these questions on paper.

1. Explain why wireless networks are so popular, especially in homes.
2. Describe the elements that make up a wireless network.
3. What is the opposite of a wireless network?

Lesson activity (45 minutes)

1. Teacher Instruction (45 minutes)
Use the included PowerPoint® slideshow to review and discuss wired local area network and wireless local area network. Instruct on virtual local area networks (VLANS).
2. Use actual network components to demonstrate or illustrate the concepts of this lesson. Involve students in creating a network proposal for a scenario. See *Suggested best practices*.

Assessment/lesson reflection (10 minutes)**Students prompt from PowerPoint deck**

1. On the same paper they used for the Anticipatory Set, answer the questions from the last slide (reflection). Be sure to give ample time for students to write their answers. If time allows, select a few students to read their answers.

Questions

1. Why is a VLAN referred to as a “logical network”?
2. List the advantages and disadvantages for a wired network and a wireless network. Give examples of a typical use for each.

Microsoft resources and Web links

- **Compnetworking.about.com**
<http://compnetworking.about.com/cs/homenetworking/a/homewiredless.htm>
- **Microsoft.com TechNet Networking and Access Technologies**
<http://technet.microsoft.com/en-us/network/default.aspx>
- **Microsoft.com TechNet: Benefits of Wireless LANs**
<http://technet.microsoft.com/en-us/network/cc917488.aspx#XSLTsection122121120120>
- **Techtarget.com Search Networking**
<http://searchnetworking.techtarget.com/>
- **Virtual Local Area Networks**
http://www.cs.wustl.edu/~jain/cis788-97/ftp/virtual_lans/index.htm
- **Wikipedia.org: Virtual Local Area Network**
http://en.wikipedia.org/wiki/Virtual_Local_Area_Network

Suggested best practices

- Creating a combination wired/wireless LAN or at least seeing the physical components is a worthwhile activity. Have students identify, label, and justify the designation of the various LAN components as wired, wireless, or both. This will lead to more complex thinking and greater understanding.
- Alternative activity: Describe a situation in business or other organization that would require a LAN. Prepare a flow chart of a proposed wired and/or wireless LAN.