

Computer Networks

WebQuest Description: This WebQuest allows the user to understand the basic terms associated with computer networks.

Grade Level: 9-12

Curriculum: Technology

Keywords: Networks, LAN, MAN, WAN, simplex, duplex, half-duplex, and network topologies.

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Introduction

Technology is on the rise today. As a result there are a variety of jobs in the area of technology. Two such jobs are computer network specialists and computer systems administrators. Some Facts About Computer Network Specialists and Computer Systems Administrators Computer network specialists and computer systems administrators are responsible for the daily operations of an organization's computer networks. They organize, install, and manage an organization's computer systems, including local area networks (LANs), wide area networks (WANs), network segments, intranets, and other data communication systems. Network and computer systems administrators work with the physical computer networks of various organizations and therefore are employed in many industries. Network and computer systems administrators must often have a bachelor's degree, along with related work experience. The average annual wage of a computer network and computer systems administrators was \$69,160 (U.S. dollars) in May 2010. So, what are some basic facts that a computer network specialist and a computer system administrator would need to know?

Tasks

By the end of this WebQuest you should be able to: Define the term computer network. Describe the main types of networks: LAN, MAN, and WAN. Explain the differences between simplex, duplex and half duplex lines. Classify commonly used technological devices as either simplex, duplex, or half duplex.

Process

Students, please form groups of three. Below are a series of tasks that each group needs to complete. Start with the first one and then continue with the rest. You will need your Computer Networks Journal to complete your tasks. Don't forget it, and have fun!

Task 1: Data Communications and the types of Networks In your first task you will watch a video to learn the purpose of a computer network. The three types of computer networks. At least one feature of each type of network. Click on the Link Computer Networks Video. The video will help you to answer the questions in section ONE of your Computer Networks Journal.

Task 2: Types of Network Layout (Topology) In the next task you will watch a series of short videos to help you learn the types of layouts of computer networks. The physical appearance of the various network layouts. Click on the Link Network Topology Video. The video will help you to answer the questions in section Two of your Computer Networks Journal.

Task 3: Direction of Data Flow in a Network (Transmission Lines) In the next task you will learn the three ways in which data can flow in a network. Click on the Link Data Communication. This will help you to answer the questions in section Three of your Computer Networks Journal. Click on the Link What is simplex, duplex and half duplex transmission? This will further assist you in understanding the three ways in which data can flow in a computer network.

Task 4: A Short Quiz In the next task you will take a short quiz to see if understand what you have been doing so far. Have fun! Click on the link Computer Networks Quiz.

Task 5: A PowerPoint Presentation In your final task you will create a PowerPoint presentation that will provide an overview of the information learned in today's class (You may find the information written in your Computer Networks Journal useful in preparing your presentation) Your PowerPoint presentation must answer the following questions: What is a computer network? What is at least ONE advantage of networking computers? What is at least ONE resource that can be shared between computers in a network? (a) What are the THREE types of computer networks? (b) How do they differ from each other? (a) What are the THREE types of network topologies? (b) How do they differ from each other? (a) Explain simplex, duplex, and half duplex transmission? (b) Give at least one example of each (the examples should NOT be ones discovered during the WebQuest). Please note that your PowerPoint presentation should not contain more than ten slides. All presentations made should be at most 10 minutes.

Evaluation

Your PowerPoint presentation will be evaluated by the criteria below. Please make every effort to obtain maximum scores in each category. Hope you have fun while preparing your presentation.

