MEDIA AWARENESS NETWORK

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Level: Grades 2-5

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Lesson Plan

Introducing the Internet: Telephones and Networks

Overview

This lesson provides students with an understanding of the basic structure of electronic network communications and how Internet communications are different from telephone conversations. In a hands-on classroom activity, children create and use paper cup telephones and compare this to sending messages over a computer "web" created with photocopies of computers linked by yarn.

Preparation and Materials

- Photocopy the following:
  - *The Internet: Cyberhistory 101* teaching backgrounder
  - Pictures of a computer (enough for half the class)
- Have on hand paper cups and yarn, a deck of cards, envelopes

Learning Outcomes

At the end of this lesson, students should be able to:

- describe how messages travel over an open electronic communications network
- understand how electronic communication is different from telephone conversations

Procedure

Divide the class into small groups. Ask half the group of children to create "cup and string" phones, by inserting the ends of a long string into a hole in the bottom of 2 paper cups. Have the other half create a large "spider's web" using different colours of yarn tied to chairs, desks, etc. in a designated section of the room.
Bring the class back together, but keep the children divided into the half which made the "phones" and the half which made the "web."
The purpose of this introductory activity is to underline how ordinary telephone conversations are private because the technology connects two people over a single cable.

- Ask the "phone" children to come to the front of the classroom while the "web" children watch.
- Divide the group of "phone" children into pairs. Each pair of children will use a cup and string phone to send a message. Each group quietly 'sends' the message between partners at the same time.
- The "web" children will watch and then be asked if they heard the message. If

all goes well, they will not have heard it.
- Take a deck of cards and give one card to each of the "phone" message senders.
- Have the children tell their partners, by "phone," what card they have, while the ''web" children listen in.
- Then ask the "web" children to guess who has which card.
- Reinforce the privacy associated with telephone communications.
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(An alternative to this exercise is to put the card in an envelope, hook it onto string between the two people holding the "phone" and send it over the string to the other end.)

Next, give each of the "web" children a photocopy of a computer and ask them to stand at various points on the web (i.e. the chairs or desk legs where a piece of yarn was tied). The "phone" children can now sit and watch.

- Reinforce how the Internet is like a web which lets computers all around the world talk to each other.
- Each "web" child can then say where in the world his or her "computer" is located.
- Identify pairs of "web" children who will "communicate" over the web. Give each of the "web" children a card, and have their partner ask them what card it is by calling to them over the web.
- They then call back their answer and hold it up for the partner to see. (Be prepared for noise!)
- Finally, have the "phone" children guess who has which card.
- Reinforce the open nature of the Internet and the complete lack of privacy in Internet communication.

Summarize how Internet communications are different from telephone communications.

- The Internet is completely open
- There is no privacy
- There is a lot of "noise," or activity, all at the same time

Evaluation

- Journal or verbal reflection on what they learned in each of the activities.
- Participation in the classroom activities.

Where to go from here

The following activity can be used to reinforce the skills learned in this lesson. Older children can play the game *Who Stole My E-Mail?-- A Unit on Electronic Privacy* on the Media Awareness Network Web site.

Related MNet Lesson Plans:

- *Introducing the Internet: Messages, Envelopes, Addresses*
- *Introducing the Internet: Exploring the Internet*

Student Handout #1

The Internet: Cyberhistory 101

In essence, the Internet is a system of cabling and routers which lets computers talk to each other, share files and exchange information. To truly understand how to best use the Internet as a tool for life-long learning, it is important to understand its history.

In the 1960's, the United States Department of Defence appointed the Advanced Research Project Agency ("ARPA") to create an internal communications system that would survive a nuclear holocaust. The system was required to meet four objectives:

- The system had to make use of existing technology, such as contemporary modems and communications software
- The system had to be decentralized, to limit its vulnerability to attack
- The costs of the system were to be distributed among the various users
- The system had to have the potential for unlimited growth

The resulting network, called the ARPANET, created a method of communication called "dynamic re-routing" which allowed defence computers located all over the United States to communicate with each other electronically. Essentially, an electronic message was divided into packets and each packet was sent to its destination through an ordinary modem and over conventional communications lines. If a packet could not reach its destination because the line was down, it was simply re-routed over other lines until it reached its destination. The packets would then be reconstructed by the computer on the other end where the message would be read.

Throughout the 1970's, universities with defence contracts joined ARPANET, to better communicate with the government departments to which they reported. Once they had access to the Net, academics began to use the system extensively for research and communications with other academics. Non-military use of the network continued to grow; and in 1984, ARPA relinquished responsibility for the network to the National Science Foundation (NSF) whose new mandate was to encourage the development of a national, and then international, network of universities and research institutions. By 1988, the NSFNET had grown from several hundred systems to 100,000. The network reached well beyond the borders of the United States to Canada, Europe, Japan and Australia.

Given the NSF mandate, the NSFNET *Acceptable Use Policy* prohibited commercial use of the network. By 1992, however, interest in exploring the commercial possibilities of the Net grew, and the NSF began to divest itself of responsibility for the network. At the same time, the network, now known as the Internet, continued to grow at an exponential rate. The introduction of the World Wide Web made the Net much more accessible to a broader range of people. The World Wide Web allows people to browse through pages of information posted on any computer on the Internet in an easy-to-read graphical environment. Moreover, Web pages are hypertext linked; in other words you can jump from page to page or computer to computer by simply clicking on text or a graphical button.

By 1994, commercial service-providers began to sell access to the network to the public at large and Free-Nets appeared in urban centres to provide access free of charge. Persons with accounts on an Internet Service Provider (''ISP") or a Free-Net can now simply dial into the Net from home, using an ordinary personal computer and modem. Today, it is estimated that 100 million users in over 130 countries are connected to the Internet.

The roots of the Internet have left a strong mark. Users are accustomed to free speech and the free exchange of information and ideas. Because each packet sent over the Internet has a return address attached, there is no real anonymity among users. However, users can easily misrepresent who or what they are. In addition, it is easy for children to link to a site with information that may be offensive or inappropriate. Therefore, it is important to provide children using the Internet with the appropriate tools to ensure that their cyber-journeys are safe and productive.