

Computer Networks and the Queer Newark Oral History Project

Overview

In this lesson, students will learn about the ways that technology can facilitate the organization and access of information, using the Queer Newark Oral History Project's website as a case study.

Grade Level

K-2

Time

Total: 45 minutes (10 minutes introduction, 15 minutes network exploration, 15 minutes network mapping, 5 minutes discussion)

Objectives

Students will be able to:

- Define technological terminology.
- Map the network behind the Queer Newark interview website.
- Describe the usefulness of computer networks.

New Jersey Computer Science and Design Thinking Content Standards

8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.

8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks.

N.J.S.A. 18A:35-4.36a: Diversity and inclusion instruction

Common Core Standards

CCSS.ELA-LITERACY.RI.2.4: Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.

CCSS.ELA-LITERACY.W.2.8: Recall information from experiences or gather information from provided sources to answer a question.

CCSS.ELA-LITERACY.SL.2.1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.5: Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.

Resources Needed

- Projector
- Teacher computer with internet access
- Paper and writing utensils

Introduction

Explain to students that today's lesson will involve thinking about the structures and technology behind everyday electronic devices. Explain the following vocabulary and after sharing each definition, ask students about their familiarity with the term using the guiding questions.

From “Computer,” Britannica Kids

The term usually refers to an electronic device that can perform automatically a series of tasks according to a precise set of instructions. The set of instructions is called a program, and the tasks may include making arithmetic calculations, storing, retrieving, and processing data, controlling another device, or interacting with a person.

Guiding questions:

- Are you familiar with the term computer?
- Do you or your family own a computer?
- Have you used a computer?
- What types of tasks have you used computers to complete?
- What instructions might those programs be following to complete those tasks?
- Are there other devices that behave like computers? How are they similar and different?

From “Computer Network,” Britannica Kids

Computers are linked in networks to allow them to exchange information electronically. A computer network connects two or more computers and communication devices. Users can share data, files, or applications on the network as if these resources resided on their respective computers.

A network serves the important function of establishing an architecture, or structure, that allows a variety of equipment types to transfer data in a near-seamless fashion.

To function properly, the network must have a set of established protocols—standardized rules for the format and exchange of messages. These protocols allow the linked computers and devices to interpret the signals they receive and to engage in meaningful “conversations” in order to accomplish tasks on behalf of users.

Two basic network types are local area networks (LANs) and wide area networks (WANs). LANs connect computers and peripheral devices such as printers in a limited physical area, such as a home, business office, laboratory, or college campus. The computers and devices in a LAN may be connected by means of permanent links such as wires, coaxial cables, or optical fibers. LANs in homes and small offices are commonly linked wirelessly through Wi-Fi, technology that uses radio waves to transmit data.

WANs connect computers and smaller networks to larger networks over greater geographic areas, including different continents. They may link the computers by means of cables, optical fibers, or satellites or may be wireless. However, their users commonly access the networks via a modem, a device that allows computers to communicate over telephone or cable lines or a wireless system. The largest WAN is the Internet, a collection of networks and gateways linking millions of computer users worldwide.

Guiding questions:

- Have you ever heard of a computer network?
- Have you heard the term network in other contexts?
- How do these other uses of network connect to the technological definition?

Local Area Network Exploration

Adapted from [“Hiding in Plain Sight,”](#) Hello Ruby

Computer networks often feel invisible, but they are actually very real. Networks are made up of computers and data that travels between them. In this activity, we will go for a walk around the school to look for signs of an LAN (local area network).

Remember the definition of an LAN: networks that connect devices in a limited physical area like our school. What types of devices might be connected to the LAN? What signs for of those connections might we look for?

Go on a short walk around the school, noting every time that students see a computer, phone, printer, or other device that is connected to the internet, internet wires or cables, routers, and anything else that is connected to the internet.

Wide Area Network Mapping

Let students know that next, they’ll be talking about the [Queer Newark Website](#). Explain the general structure of the website, pointing out the “Get Involved,” “Interviews,” and “Resources” pages.

Remind students that the Queer Newark website, like all websites, does not exist independently. It is part of a network. Provide paper and writing utensils, and ask students to draw what they picture when they hear the word network.

Once students have finished drawing representations of networks, ask them to consider what computers and other devices might be connected to the network of the Queer Newark website and add words or symbols to their drawings to represent the computers that they have thought of. Remind them to consider the pages that they have looked at and who might find those useful. Then discuss their answers as a class. Potential answers include:

- Computers at Rutgers University-Newark belonging to people who work on the project
- Computers across the world belonging to researchers, students, and other people who are interested in LGBTQ+ history
- Computers belonging to people in Newark who want to be interviewed

Have the students look at their map and consider whether the Queer Newark network map that they’ve just created is showing a local area network or a wide area network. If students are struggling, ask them to review the computers that they have listed and consider where those computers are located and how they connect to the Queer Newark website to inform their answer.

Discussion

Wrap up the lesson by asking students to consider why networks are important. What would be different about the Queer Newark website if it could only be accessed through a local area network instead of a wide area network? Why is it important to understand networks as people who use computers?