



### Integration Opportunities

**Math 3.MG.4b-d** Design a model of a computing network that incorporates various polygonal shapes to represent different components (e.g., triangles for routers, rectangles for servers). Create a visual layout that demonstrates how devices connect within the network to ensure efficient data transmission.

**English 3.RI.1b, 3.RI.3d** After reading informational texts describing how networks connect computers, have students demonstrate comprehension by summarizing the text using content-specific language and vocabulary.

**History Skills 3.a,e** Students create a graphic organizer to compare and contrast how important information, traditions, and stories were shared in ancient cultures and how they are shared today.

**Music 3.6b** Students discuss how networks and the Internet allow us to share and experience musical compositions and instruments from various times and places.

## 3.NI.1 Networks and the Internet

*The student will describe computing networks. (a) Differentiate between a network and the Internet. (b) Identify the components of a computing network. (c) Describe how a computing device connects to a network. (d) Identify ways networks are used to transmit information.*

### Understanding the Standard

Students will apply their understanding of networks to identify examples of local networks (homes, schools, etc) and worldwide networks (the internet) and compare and contrast the two. A network is a group of computers that can communicate directly with each other. Networks allow devices to share resources like hardware, software, and data, saving time and money. Networks need a physical pathway such as an ethernet cable or a wireless pathway such as wifi in order to send information (often both types of pathways are used). Students will identify various types of electronic communication, such as videos, blogs, email, direct or text messages, or social media posts, and explain how networks are needed in order to send information from one device to another.

| Term     | Definition                                                           |
|----------|----------------------------------------------------------------------|
| Network  | A group of computers that can communicate directly with each other.  |
| Internet | A network, or system, that connects millions of computers worldwide. |
| Transmit | Send information from one device to another.                         |

### Prerequisite Knowledge

Students should have foundational knowledge of how a network functions and be able to identify various types of electronic communication. In order to describe how a computing device connects to a network, they should have some understanding of the parts of a computer including inputs and outputs.

### Summary of a Lesson

In small groups, students will use sticky notes to brainstorm different ways information is shared electronically (e.g. email, blog posts, videos, etc). Groups will then brainstorm different examples of the information that is shared in each format (news, weather, entertainment, work communication). Students will then use the sticky notes to create a poster on chart paper depicting how each type of communication format uses a network to get from one device to another. Posters can take the form of drawings, diagrams, flowcharts, or tables. The whole class will conduct a gallery walk to review each poster and offer feedback.



