Cybersecurity Basics

FOR GIRL SCOUT DAISIES, BROWNIES, AND JUNIORS

Overview

This guide compiles requirements from the Daisy, Brownie, and Junior Cybersecurity Basics badges. Girls will learn how devices communicate using code and networks. They will also learn about how to stay safe online and take the Internet Safety Pledge.

After completing all activities:
- Daisies will earn the Daisy Cybersecurity Basics badge.
- Brownies will earn the Brownie Cybersecurity Basics badge.
- Juniors will complete requirements 1, 2 and 3 of the Junior Cybersecurity Basics badge.

Material List

- 2-4 sheets of plain paper
- A pencil
- Crayons, markers, or colored pencils
- 3-5 index cards (or smaller pieces of paper)
- A 2-3 foot piece of yarn or string (optional)
- Paper clips (optional)
- The Binary Bracelet template
- The Online Safety Pledge template

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Step 1: Discover how technology is used and how it works.

Ask your Girl Scout what she thinks the word "technology" means. What are examples of technology she sees every day?

Technology are the inventions that come from science and research. Technology solves problems and makes our lives easier. Computers, cell phones, and tablets are examples of technology that help us communicate with others and do tasks like homework.

Brainstorm with her. Both of you can think about the technology you use most often. Take turns giving each other a 'technology tour'—what are the different parts of the device? What do they help you do?

[Ex. A smartphone has a touchscreen—this helps us type and use apps to find information, watch videos, and send messages. A smartphone also has a speaker—this means we can use it to listen to music. A camera lets us take photos and videos with a smartphone. The charging port at the bottom helps keep the phone powered.]

The parts that make a device work are super important! However, our devices wouldn't be able to work if they weren't programmed to help us. A **program** is a set of directions that a device uses to perform a task. Programs are written in **code** that devices can understand.

One of the kinds of code that devices use is binary code. **Binary code** is like our alphabet—if our alphabet had only two letters! **Use the Binary Bracelet activity template to explore binary code with your Girl Scout. Start by helping her write her name in binary code.** What else can she write in binary?

Step 2: Discover networks and how we use computers to connect and send information.

Brainstorm with your Girl Scout— have her think about how many communities she is a part of. She can visualize these groups by drawing herself, then drawing her different communities in bubbles that connect back to her. *[Examples of communities to help you start: her family, her Girl Scout troop, her Girl Scout council, her town, her school, her teams, her faith / service organizations—the list can go on!]*

These are all groups of individuals that she is connected to. Devices connect to each other in the same way! When a device is connected to other devices, they are sharing a **network.** Individuals in your Girl Scout's communities are all part of her network—and she is a part of theirs. **When devices are connected on a network, they are able to share information with each other, just like people do.**

Ask your Girl Scout: Does she know every single person who is a member of all of her networks? For some of her networks, the answer may be yes. For others—the answer is **no.**

For age-level specific requirements and activities, check out the Cybersecurity Basics: Meetings 1 & 2 for your Girl Scout's level on the **Volunteer Toolkit**—or grab a copy from your local service center or the online Girl Scout shop.

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Step 2, continued.

Did you know that when we send messages online, our devices break them up into pieces so that they can travel more quickly? It's a little like taking bites instead of trying to eat a whole sandwich at once. The recipient device takes all the message pieces and puts them back together again so it can be read. This game will show your Girl Scout how messages are broken down, sent, and reassembled.

Internet Relay (2 people)
Write out a sentence on index cards or other small pieces of paper. Break the message up into 3-5 small chunks. Scramble the message up, then have your Girl Scout put it back together again. How long did it take? Isn't it pretty cool that our devices can do this process so quickly?

Internet Relay (3 or more people)
If you have more people around, (and some yarn and paper clips!) you can include them in your relay game! One person will be the message sender and another person will be the message recipient. Everyone else will be a device connected to the network.

The sender will write out their message in chunks on the index cards, or pieces of paper. Everyone will hold sections of yarn that connect them to at least one other person in the game (some people may have multiple connections). The yarn represents the network connections.

The sender will attach the message cards to the yarn using the paper clips (the paper clips can be threaded onto the yarn like beads). The devices in the network will work together to slide messages down the network paths created by the yarn, trying to get their message chunks to the sender., who will take them off to be put back in order. Only one message card can be on a network path (a yarn link between devices) at a time.

What did playing this game show your Girl Scout about online messaging? If our messages are taken apart and passed around by multiple devices, what does this mean for our online safety? Do we always know who might be able to see what we send?

Step 3: Explore online safety and take the Internet Safety Pledge.

Palo Alto Networks offers an online <u>Kids in Cybersecurity Hub</u>. **Visit the Kids in Cybersecurity Hub with your Girl Scout. Check out the videos and tips as you scroll down the page.**

> **On this site, your girl will learn:**
> -How to create strong passwords
> -How to protect devices in real life
> -How to be careful when clicking on links

After watching the videos together, **team up to take the Cybersecurity Quiz** at the bottom of the page. Talk through your answers to see what your Girl Scout learned. After testing her knowledge, your girl is ready to take the **Internet Safety pledge!** Read it out loud together, and keep it where your girl can see it regularly. Refer back to it when your girl has questions or needs guidance when it comes to being safe online.