



14: Cybersecurity

Learning Objectives

Students will be able to practice strategies for cybersecurity.

CSTA Standards (6)

- 1A-AP-14: Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.
- 1A-AP-11: Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.
- 1A-AP-10: Develop programs with sequences and simple loops, to express ideas or address a problem.
- 1A-AP-08: Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.
- 1A-NI-04: Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized access.
- 1A-IC-18: Keep login information private and log off of devices appropriately.

Materials Needed

- Skill Struck platform
- Student computing device
- Supplemental materials

Supplemental Materials

- [Cybersecurity Slideshow](#)
- [Warm-Up Activity Cards](#)
- [Cybersecurity Poster](#)
- [Example Passing Codes Lesson 14](#)

Professional Development

View resources in Community Plus

Activities

Time Estimate: 40 min

- Warm-up/Wrap-up
- Demo
- Platform
- Class Activity
- Extra Activity



Name	Description
Warm-Up 5 min	Help students review identifying public vs. private information through physical movement. (Or if you like, you can use the cards in the supplemental materials and have students hold up the cards in response.) 1. Establish the movements: Private Info → Students curl into a ball or crouch down (like hiding to keep a secret!) Public Info → Students stand tall and stretch their arms out wide (like they're sharing with the world!) 2. Read a statement aloud. Some possible statements include: • "My favorite color" → Public • "My home address" → Private • "What I like to eat for lunch" → Public • "My last name" → Private • "The name of my school" → Private • "A picture I drew" → Public • "My phone number" → Private • "The sport I play" → Public • "My birthday" → Private 3. Students decide if it's public or private and do the matching movement. 4. After each one, pause to briefly discuss why the answer is public or private.
Teacher Demonstration: Cybersecurity Slideshow 15 min	Open the slideshow to discuss cybersecurity.

Name	Description
Platform: Cybersecurity Lesson 15 min	Students complete the Cybersecurity lesson on the platform. There are example passing codes found in supplemental materials. *Note: If the task does not require a specific background, the example codes just show the sprite code. If your students are ready for more content, or you need to cover this topic in greater depth, consider using this extended lesson: "The Password Puzzle" It was the day of the Computer Lab Challenge, and Keira and Michael were excited. "Today's theme is cybersecurity," said Mr. Adams. "That means we're learning how to stay safe online. Let's start with passwords!" Michael raised his hand. "My password at home is my name and birthday. Is that okay?" Mr. Adams smiled kindly. "Hmm. That's a password, but let's ask everyone—do you think that's a strong password?" Keira shook her head. "I think it's easy to guess!" "Exactly!" said Mr. Adams. "A strong password should be hard for someone else to guess. Think about it like a secret code—use a mix of letters, numbers, and symbols. And never use your name or birthday." Keira shared hers: "Like 'Pinel77cake.' It's my favorite food, with a symbol and numbers." "Now <i>that's</i> a strong one!" said Mr. Adams. "And remember—keep your password private. Only share it with a trusted adult, like a parent or teacher." "What else should we do to stay safe?" Michael asked. Mr. Adams wrote on the board: • Use strong passwords • Log out when you're done • Don't share personal info • Don't click on strange messages or pop-ups "These are all parts of <i>cybersecurity</i>, or how we protect our devices and information." "Cybersecurity is like having a lock on your secret fort," Keira said. Michael nodded. "And your password is the key!" Let's learn from Keira and Michael! Cybersecurity means keeping your computer and information safe from danger. Just like we lock our doors at home, we need to lock our devices with good passwords and smart habits. Here are some ways to be cybersafe, just like Keira and Michael: • Make strong passwords that are hard to guess. Use at least 8 characters and mix in numbers and symbols. • Don't share your password with friends, even your best friend. It's a secret just for you and your grown-ups. • Always log out when you're done using a device—especially if you're at school or in a public place. • Watch out for strange links, messages, or pop-ups. If something looks weird or too good to be true—don't click it

Name	Description
	Remember: Even kids need to help keep computers and tablets safe. When you learn good habits now, you'll be ready to use technology safely as you grow!
Wrap-Up 5 min	Review the 4 things students should do to “BULK” up their cybersecurity. 1. B – Be careful of what they download 2. U – Use strong passwords 3. L – Log out of computers 4. K – Keep personal information private Encourage students to practice this often so they stay safe when using the computer. Here are critical thinking questions for students also found in the platform textbook. 1. What could happen if someone guesses your password? 2. Why do you think we should log out when we finish using a computer? 3. If you get a strange message online, what is the best thing to do?
Life and Culture Connections	Here are some examples of how computer science impacts daily life, both in the United States and internationally: Life Connection Every time you use a tablet, computer, or phone, you leave behind information. That's why it's important to protect your digital world, just like you protect your backpack or lunchbox. If you don't want someone going through your stuff, you lock it up—and it's the same online! Using smart passwords and logging out helps keep your information safe. Cultural Connection In Canada, schools teach students about cybersecurity early, just like you! Kids learn how to make strong passwords and how to spot online tricks like fake websites. There are even special events like "Safer Internet Day", where students across the country learn about staying safe online—together!

Activities for Further Learning

Name	Description
Extension and Remedial Ideas	• Extension Opportunity: Students can draw a "Cyber Shield" and list protective habits inside it, or act as a "Cybersecurity Detective" by voting with their thumbs on whether a presented scenario is safe or unsafe. A pattern decoding activity can also show how encryption protects messages. • Remedial Resources: Teachers can use full-body movements to help students categorize information, having them curl into a ball for "Private" info and stretch their arms wide for "Public" info. Discussing the "BULK" acronym provides a simple memory aid for daily safety habits.

Name	Description
Extra Activities	Below are additional activities you can do with the class. *Note these activities currently do not have materials in the supplemental materials 1. Cyber shield • Students draw their own “Cyber Shield” – a colorful shield that protects them from online dangers. • Inside the shield, they draw or write 3–4 things that help keep them safe online (e.g., strong passwords, asking a trusted adult, not sharing private info, antivirus software). • Discuss as a class: What’s one thing on your shield that’s really important? 2. Cybersecurity Detective • Read or show simple real-world kid-friendly scenarios, like: ◦ “Liam gets a message from someone he doesn’t know asking for his address.” ◦ “Maya asks her teacher before downloading a game.” ◦ “Ty posts a photo of himself in front of his school.” • Ask: Is this safe or unsafe? Why? Let students vote by thumbs up/down or walking to a side of the room. 3. Pattern Postcards: you will need a pattern code key (example: blue circle = Hello), “postcards”, coloring utensils, optional envelopes. • Explain that students are going to send a secrete message using a pattern. Explain that patterns help people and computers without using words. ◦ Show an example on the board. For example:  = “Hello Let’s play Let’s play Hello Let’s play Let’s play” ◦ Ask: ▪ “What do you think this pattern might mean?” ▪ “What helps you figure it out?” ▪ Tell students they’ll get to make their own pattern postcard to send a message. • Show students a pattern code key and model choosing a message to build the pattern. Emphasize that the patterns must repeat and follow the code! • Students create their pattern using symbols and the key. • Students pair up and trade postcards, partners read and decode the message. • Lead a discussion about patterns and cybersecurity. 1. How did the pattern help you understand the message? 2. What would happen if we didn’t all use the same pattern key? 3. Why might people or computers use patterns to share information? 4. How might using patterns like this protect our information?

