# STEMpack:
# Cyber Security

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# Teacher Syllabus and Notes
# Day 1

**Introduction to Computer Science and Cyber Security**
**Estimated time: 2 hours, 20 minutes**

## AGENDA

- Intro to classroom management (20 minutes)
  - Have necessary instructions written on the board.
  - More detailed steps are below.
- Female tech role models (30 minutes)
  - Introduce women role models in computer science.
  - Do the Women Wizards role-model matching game: Print the pages in color, cut them in half, and have girls work in teams to match the biography with the photo.
- Basics of computer coding (5 minutes)
  - Watch the "Change the World" video.
  - Ask the students if they recognized anyone in the video.
- Individual activity (30 minutes): Let students explore from the links below. They can begin exploring today and come back to it throughout the week or after.
  - Hour of Code (learn coding through visual apps)
  - Beyond Hour of Code (more challenging activities)
  - Codecademy (learn real HTML or other computer science languages)
- Break (5 minutes)
- Intro to cyber security: Watch "Cyber Security 101" and check for understanding (10 minutes).
  - Why was the internet originally designed?
  - What are some objects besides computers that can be connected to the internet?
  - What can happen if you don't protect your computer?
  - Why haven't people developed a perfectly safe internet?
- Play the Cyber Security Lab game (45 minutes).
  - Have students create an account by using their Gmail and log in to save their progress.
  - Instruct students to complete the game and to take notes on new vocabulary and on other best practices they encounter. For support on this activity, consult the guide for educators. Walk around the classroom and check for individual understanding.
- Intro to research and debate (20 minutes)
  - See detailed steps below.
- Cyber security vocabulary wall (5 minutes)
  - Explain that you and the students will create a vocabulary wall that will grow over the week using Post-it notes. Students will write unfamiliar words on the notes and stick them to the wall.
  - Add any important cyber security vocabulary that does not come up. Repeat the words throughout the week by using them in context.
  - The vocabulary review for each day will build up to a vocabulary Jeopardy game on the last day of class.
- Bonus work: If students finish their work early, direct them to these websites to play around with coding and cyber security exercises.
  - Hour of Code
  - Beyond Hour of Code

- o [Codecademy](#)
- o [Cyber Security Lab](#)

## INTRO TO CLASSROOM MANAGEMENT INSTRUCTIONS

- Discuss various browser usage. We recommend Chrome.
- Make sure everyone has a Gmail account. If not, sign up now.
- Sign into Gmail. Ask students to send you an email answering the following. (Write the questions on a board or have them on a projector.) You can ask any questions, but it's important to ask the second one so that you know the different levels of learners in your classroom. The other questions will give you a clue about the students' personalities, likes, and dislikes.

  1. What is your favorite kind of ice cream?
  2. Are you at a beginner, intermediate, or advanced level in technology? Describe your experiences with technology. What is your favorite thing to do on a computer?
  3. What are you most passionate about?
  4. What's your biggest pet peeve?

- Share the student syllabus via Gmail or printout.
- Discuss the vocabulary wall that will grow over the week with daily group participation. Friday there will be a game of Jeopardy using these words.

  Give an example: Write "URL" on a Post-it note. Ask if anyone knows the definition. (An address for calling a web page, e.g., [www.code.org](http://www.code.org)). Establish where in the room the students should put Post-its up for words they aren't familiar with. At the end of each class, review the vocabulary together.

- Bonus work: If you finish any section ahead of time, please complete the bonus work, which is located on your syllabus.
- Ground rules: When I ask for all eyes on me, no hands or eyes on the computer. No food in the classroom. Water is OK, but the bottle should be on the ground. Go to the bathroom before class and during break.
- At the end of the day, put your computer to sleep.
- Put a piece of tape over your video lens. Hackers can activate your camera without you knowing. This is a way to protect yourself.

## INTRO TO RESEARCH AND DEBATE INSTRUCTIONS

Students will be allowed 10 minutes at the end of each class to work on this project. Debate presentations will be on the last day of class.

- Students will work in groups of 3 or 4 people each.
- Groups will be assigned to argue either pro or con on the following claim: "People have the right to personal privacy and to interact securely when using digital devices."
- Students will research recent news stories throughout the week to find evidence that supports their side of the claim. They will need to present 1 strong argument and cite 2 current events relating to cyber security evidence that supports their side of the claim.
- They can use [Google Presentation](#) to create a visual aid.

- Each group will need to state a summary of current laws and practices regarding people's rights. Review the U.S. Constitution regarding rights of privacy.
- They'll follow this debate format:
  - Pro: opening arguments (5 minutes)
  - Con: questions (2 minutes)
  - Con: opening arguments (5 minutes)
  - Pro: questions (2 minutes)
  - 2-minute break (regrouping ideas)
  - Pro: rebuttal 3–5 minutes
  - Con: rebuttal 3–5 minutes
  - Pro: closes debate (2 minutes, optional)
- Some suggestions for starting their research
  - [Online privacy](#)
  - [Plan to abandon net neutrality and ISP privacy](#)
  - [The Electronic Frontier Foundation](#)
  - [Tactical Tech](#)
  - [Listen to a podcast on internet privacy](#) (1 hour, use headphones)