

Cybersecurity



Facilitator Guide: How to Prepare for This Lesson



Lesson 5 – Physical and Digital Security

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About this Facilitator Guide

This facilitator guide provides the details to help you enable students to complete the lesson on **Physical and Digital Security – What are Physical and Digital Securities?**

Instructions for using the SCORM files in Blackboard and Canvas can be found at this [link](#). Instructions for using Flipgrid can be found in this guide.

While this lesson is designed for online learning, you will find information in this guide about In-Person Learning Adaptations to help you facilitate your students who may be completing this lesson in the classroom instead of online. Call-outs will provide guidance on how to adapt various activities for in-person learning.

Before You Get Started

Before you get started with this lesson, please be sure to:

- Read through the facilitator guide.
- Download SCORM. (You will only need to add SCORM once. After that, you will be set to use SCORM for any remaining lessons.)
- Review the Rise lesson.
- Prepare any resources needed for the lesson.
- Set up Flipgrid.

Flipgrid Instructions – Setting up Flipgrid

Both educators and students will need to set up Flipgrid for use.

Educator Step-by-Step Guide

Set up your free educator account at [Flipgrid.com](https://flipgrid.com) and create a **Topic** for the class. Please copy and paste the heading from the facilitator guide that pairs with the Flipgrid so that the topic aligns with student expectations. A Topic is a discussion prompt for students. Students respond to the Topic with a short video using our fun, social-media-style camera. Students can watch and comment on videos from peers, with the educator in complete control.

1. Create a Topic

Topics start the conversation in Flipgrid. Just write a prompt and include anything for students to review before responding, such as videos and links.

When you create a new Topic or Group, a Join Code is automatically created for it. To share the Join Code to your Topic or Group, login to your educator account and select the blue Share button to access your Join Link and Code, as well as other ways to share your discussion.



The Join Code also creates a link. Copy/paste the link in emails, texts, social media, Google Classroom, or other websites to invite your students to join! You can download/print QR codes for students to scan on the Flipgrid app. The Flipgrid app and flipgrid.com offer a QR scanner on the homepage.

The student receives the Join Code in the form of a link, a code, a QR code or a guest username and password. The student can then enter a student username, or a password.

2. Set Access and Share

After creating the Topic, choose how students will access it. If they have email addresses, add the domain (everything after the @ symbol in their email address). If students do not have email addresses, create usernames for each student. Invite families and guests by adding a guest password.

Share the Topic by using one of the Share buttons or copy and paste the unique Join Code wherever you connect with your community.

3. Students Respond

After entering the Join Code, students gain access by logging in via email or username.

Students can share their voices by recording a short video with Flipgrid's fun, simple, and powerful camera. It's packed with everything they need to tell their story, including text, emoji, inking, boards, screen recording, and the ability to upload clips!

References:

[Educator Step-by-Step Guide](#)

[Educators: A Teacher's Guide to Flipgrid \[YouTube\]](#)

[Educator Guide to Flipgrid](#)

Student Step-by-Step Guide

A student can create a video to submit to the educator in a few easy steps!

1. Locate the Join Information from Your Educator

Your educator would have given you one of these ways to join the discussion:

- A Join Code (e.g., FGrid3567, a591dc5d) or a QR code
- A Join Link (e.g., <https://flipgrid.com/FGrid3567>, <https://flipgrid.com/a591dc5d>)
- If you don't have a school-provided email, then a unique username or guest password

Flipgrid works on most web browsers and mobile devices. Microsoft Edge or Google Chrome is recommended for the best web experience. For easy access to Flipgrid, download the Flipgrid extension. On mobile devices, download the free Flipgrid app for iOS and Android devices.

2. Join the Discussion

Get the educator's discussion by using the link or code provided by your educator in Step 1.

- If you have a Join Link, click on that link.
- If you have a Join Code,
 - Go to your web browser and enter <https://flipgrid.com>. You'll see an area to enter a Join Code. Type the Join Code and press Enter on your keyboard.
 - On a mobile app, enter the code.
- If you have a QR code, scan the QR code with your device camera or the Flipgrid mobile app.

You'll see a prompt to log in. Enter a student username or a password. If your student username or password is not working, be sure to double-check the case and space sensitivity.

Tip: If you're prompted to log in, choose Google if your school uses Google Classroom, Docs, and Drive. Choose Microsoft if your school uses Word, OneDrive, or Microsoft Teams.

3. Record and Submit

Once you've joined, you'll see your educator's Topic, or discussion prompt. Follow the instructions and when you're ready to record, click the red Record a Response button or the Flipgrid logo for the camera to start.

When you're using the Flipgrid camera, you can record a video in these three easy steps:

- Tap to record: Tap the record button on the bottom to start. Add fun stickers, filters, text, and more. Tap the arrow on the bottom-right to advance.



Review your video: Trim, split, rearrange, or add more. Tap the arrow on the bottom-right to advance.



Submit your video: Edit your cover image and name, add a title, or attach a link. Then submit!

The Flipgrid camera offers a lot of fun and creative ways for you to share your ideas and voice! [Check out all the camera features here](#). Learn [how to import a custom video](#) or [how to include a screen recording](#).

References:

[Getting Started: Students](#)

[Getting Started with Flipgrid - Students \[YouTube\]](#)

Using Editable PDFs

Most lessons include the use of an editable PDF for students to capture responses to questions and other activities.

Guiding language is included in the lesson to help students access and use the editable PDFs where they appear.

For students who will be using Chromebooks, students will need to use the Print to PDF function to save their editable PDFs to their device. Here's how to do this:

- 1) Open the editable PDF and select CTRL+P.
- 2) Open the file destination where the file will be saved to.
- 3) Select Save as PDF.
- 4) Select Print. Your document is now "printed" as a PDF file which will save your work.

PDFs cannot be submitted via the Rise activities. If you plan to collect these documents for career planning portfolios or grading, you will need to coordinate that with your students.

To view a video on using Flipgrid and editable PDFs in the lessons, select this [link](#).

Ask an Expert Interviews (Optional)

You may choose to include an "Ask an Expert" interview in this lesson.

An interview provides an opportunity for students to talk with and ask questions of experts who work in various professions to learn about their career journeys, current job roles and responsibilities and glean valuable insights.

Additionally, interviews also provide the following benefits:

- Real-world information about careers.
- An awareness of the workplace habits and interpersonal skills needed to succeed in any job.
- Further encouragement to go to college or post-secondary training, apprenticeship etc. and get ready for the career of their choice.
- An understanding of the fact that each person's career journey is unique and that most people encounter obstacles and challenges that they must overcome to reach their goals.

When selecting experts to participate in the small group interviews, look for “down to earth” people who you think are good speakers and who would be comfortable talking to young students, ages 12 to 14. An ideal ratio is one expert per every five students.

There are two options that can be used if you choose to use an Ask an Expert Interview:

- Schedule a Zoom/Skype call with an expert in the field.
- Find an existing YouTube video of an expert to share with students.

In-person Learning Adaptation: For in-person learning, project/share the Zoom/Skype call with an Expert with your class. YouTube videos may also be projected/shared in-person. You can consider facilitating further discussions on the key takeaways from the session and/or a specific topic discussed in the session.

Review the following resource for additional information:

[Career and College Exploration Experiences: Planning for Success](#)

How to Implement this Unit

For students to get the most value from this unit, please plan on implementing all lessons in this unit, in sequential order.

When it may not be possible to implement the entire unit, we recommend implementing the following lessons to support optimum student learning based on time available:

- Best Practice: All 12 lessons in order
- Mini unit: Lessons 1 through 4 (5 is an optional addition)
- Standalone lessons: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 12
- Trios: Lesson 9, 10 and 11

Alignment of Learning Outcomes

The program learning outcomes for Possible Futures 2.0 are:

- A. Gain awareness of and exposure to a wide array of careers.
- B. Increase self-awareness and begin to form their potential occupational identity.
- C. Develop employability skills.
- D. Develop foundational technical skills as appropriate.
- E. Be positioned to make more informed educational choices.
- F. Transition to high school with an actionable plan for next steps.

The curriculum learning outcomes for the Cybersecurity unit are:

1. Students learn the basics of digital life and cybersecurity.
2. Students explore career options within the cybersecurity industry.
3. Students identify their strengths and interests in the field of cybersecurity.
4. Students connect their strengths and interests in the field of cybersecurity to potential careers.
5. Students explore local labor market data and education opportunities for careers in the field of cybersecurity.

The Arizona Career Literacy Standards for grades 5 through 8 can be found at this [link](#).

The Arizona Computer Science Standards can be found at this [link](#).

This lesson's learning outcomes align with the program learning outcomes (PLOs), curriculum learning outcomes (CLOs), and Arizona Career Literacy Standards (CLSSs) as follows:

CLOs	Lesson Learning Outcomes	PLOs	CLSSs	CSSs
1	Define Digital security.	D	2.0, 5.0	NI.C.2
1	Identify examples of Digital security.	D	2.0, 5.0	NI.C.2
1	Define Physical security.	D	2.0, 5.0	NI.C.2
1	Identify examples of Physical security.	D	2.0, 5.0	NI.C.2
1	Identify the difference between Physical and Digital security.	D	2.0, 5.0	NI.C.2
1	Define the term "firewall."	D	2.0, 5.0	NI.C.2

1	Understand why using a firewall is important.	D	2.0, 5.0	NI.C.2
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Tracking Completion of Lessons

If you are using SCORM Cloud or Canvas with the lessons in this unit, completion tracking options are available. If you are not using either platform, please determine if and/or how you plan to track completion of lessons by students.

Lesson 5 Components

Guiding Question

The guiding question is intended to provide a focal point for each lesson. This lesson's guiding question is:

- **What are Physical and Digital Securities?**

Lesson Overview

In this lesson, students define physical and digital security. Then students read an article which goes further into the definition, so they can understand the difference between physical and digital security. Finally, the students learn about firewalls and apply what they have learned by creating a physical and digital security poster and sharing it on Flipgrid.

Learning Targets

By the end of this lesson, students will be able to:

- Define digital security.
- Identify examples of digital security.
- Define physical security.
- Identify examples of physical security.
- Identify the difference between physical and digital security.
- Define the term "firewall."
- Understand why using a firewall is important.

Vocabulary in this Lesson – Flip Card Activity

Students should use the flip card activity to familiarize themselves with key vocabulary terms and definitions for this lesson.

- **Digital security:** Keeping devices secure with cybersecurity methods.
- **Physical security:** Protecting devices as possessions in the physical world.
- **Tailgating:** Gaining unauthorized access onto the premises of a company.
- **Anti-virus:** Prevention method that scans your device for known viruses in files.
- **Firewall:** Prevention method that monitors incoming and outgoing data (traffic).

What is Physical and Digital Security?

In this section, students learn about physical and digital security measures that will help them protect their physical or digital information. Physical security refers to the protection of personal information against theft, vandalism, and accidental damage. Whereas digital security refers to the protection of one's personal online identity and information stored in

their computers or other digital devices. They also learn the difference between physical and digital security, and why they are both important. The information is presented in a tab block.

In-person Learning Adaptation: For in-person learning, the facilitator can show the video via a projector or a Smart board and ask students to discuss any queries or observations on the video.

The facilitator can do the following:

Divide the class into two groups.

Instruct the first group to write down as many examples of things they own physically that they don't want to be stolen. (for example: their bag, phone, game, etc.)

Instruct the second group to write down as many examples of things digitally that they don't want to be stolen (for example: their online account to a certain site, digital currency, personal information, etc.).

Divide the board into two sections and ask students from

Differences Between Physical and Digital Security

In this section, students review an article titled [Physical and Digital Security Preventive techniques](#) to learn about the different digital and physical security measures. The article covers physical security measures such as, locks, tailgating, securing physical documents, biometric, badges, key fobs, RFID badge, and different types of tokens. The article also includes digital security measures such as antivirus, firewall, antispyware, and directory permission.

Facilitator Note: The article provides a different definition of tailgating. For our purposes, tailgating is an example of a physical security breach. It is when someone who is not authorized to enter a secure or restricted area follows a person who has authorization to enter that area to access information. In other words, the person who does not have an authorization to enter the restricted areas, such as server rooms, uses the authorized person to pass through the locked door once they unlock the door.

After reviewing the article, the students complete the **Differences Between Physical and Digital Security** section of this lesson's editable PDF.

In-person Learning Adaptation: For in-person learning, the facilitator can share the article via a projector or a Smart board and ask students to answer the questions given in the PDF.

The facilitator can also do the following:

Instruct students to create a visual scenario that includes multiple layers of both digital and physical security. They should start by deciding what they are protecting and then put various security factors in place.

Example: For Physical Security, they should brainstorm items that need to be protected, such as their home, computer, phone etc. Then they should consider security factors that can be used to protect these items, such as a lock for your door, locking your computer and phone and having passwords, using 2-factor authentication, etc.

What is a Firewall? – Video

In this section, students learn what a firewall is and why it is important. Firewalls act as a layer of defense against malicious attacks that can compromise one's digital security. They reflect on the following questions:

- What's the first thing that comes to your mind when you hear the word firewall?
- What do you think it is?

The students then watch a video titled [What is a Firewall?](#) to learn more about firewall and how it defends the system from viruses and malware attacks. They also learn how a firewall works and what happens if the firewall is enabled or disabled. The information is presented with text and images in a tab block.

In-person Learning Adaptation: For in-person learning, the facilitator can share the video on enabling firewall via a projector or a Smart board and ask students to discuss their experiences or queries on firewall.

Putting Physical and Digital Security into Action - Flipgrid Share Out

In this section, students use Flipgrid to create a visual poster that includes multiple layers of both digital and physical security.

They start by deciding what two things they are protecting and then put various security factors in place for each. For example:

- For physical security, they can mention their computer as something that needs to be protected. Physical security examples can include their home, a locked door, making sure the computer is either off or locked when they're not using it, etc.
- For digital security, they can mention a social media account they have. Digital security examples can include strong passwords, using a firewall, using an antivirus, etc.

Closing Reflection

In this section, students reflect on what they have learned about physical and digital security and answer the following questions in the Closing Reflection section of this lesson's editable PDF.

1. Write at least one take away you have learned about physical security.
2. Write at least one take away you have learned about digital security.
3. What are some ways you can improve the security where you live?

Thinking About Your Future

At the end of the lesson, students will see the following statement in Rise: "In this lesson you learned about the many aspects of physical and digital security."

Before the next lesson, think about how you might respond to these questions:

- Have you thought much about the topic of security before or has this information been new for you?
- Has anything in this lesson caused you to be more cautious regarding physical and/or digital security?

Career Pathways

Share the following with your students: "It's never too soon to start exploring future career options!"

Students can access the resources at this link, [PipelineAZ Information Technology](#).

Lesson Completion

At the end of the lesson, students will see the following message in Rise:

In future lessons, you will learn more about passwords, hacking, and ciphers.