Supporting Cybersecurity Teachers in the Classroom

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Students demand more **career exploration in high school** to help them turn a passion into a profession, but **many lack access to quality career-focused programs** that lead to in-demand jobs.

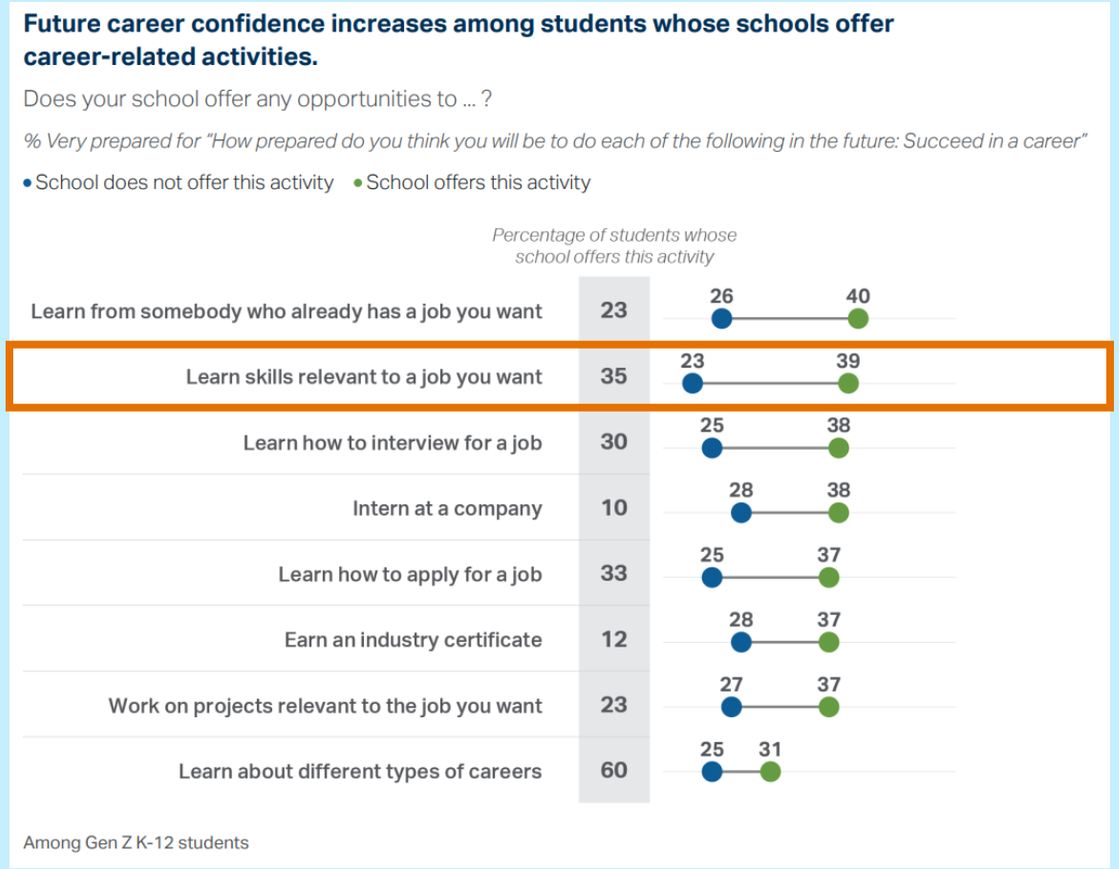
College Board is building **AP Cybersecurity** to provide a pathway for career-aware students.

Career Preparedness is a rising priority in K-12 education

Among students and families surveyed, only 35% of schools offer job-relevant skills education.

Top 10 Purpose of Education Rankings

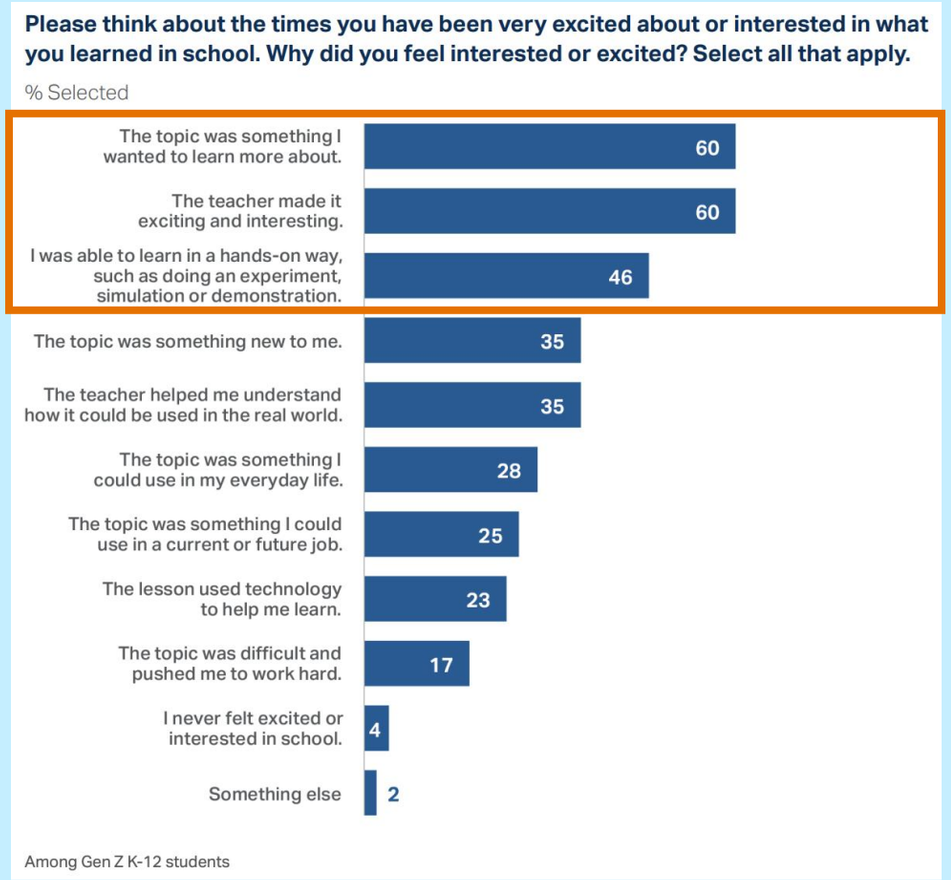
Attributes	2022	2019
Students develop practical skills (e.g. manage personal finances, prepare a meal, make an appointment)	1	1
Students are able to think critically to problem solve and make decisions	2	4
Students demonstrate character (e.g. honesty, kindness, integrity, and ethics)	3	3
Students can demonstrate basic reading, writing, and arithmetic	4	14
All students receive the unique supports that they need throughout their learning	5	19
Students are prepared for a career	6	27



Source: https://nextgeninsights.waltonfamilyfoundation.org/wp-content/uploads/2024/08/Walton_Gallup_Voices-of-Gen-Z_Year-2-2024-Final-Report.pdf

Walton Family Foundation-Gallup Voices of Gen Z Study

Engagement in Gen Z is down. The study found topic, teacher, and applied learning are critical to engaging students.



The study also found **engagement is particularly low among students who don't plan to pursue a 4-year degree**, and high schools today emphasize college a lot **more than other opportunities**.

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Walton Family Foundation-Gallup Voices of Gen Z Study

Why AP Cybersecurity?

500,000

High-paying, job postings, many that don't require a 4-year degree[1]

1.2%

Students have access to cybersecurity pathways[2]

2,300

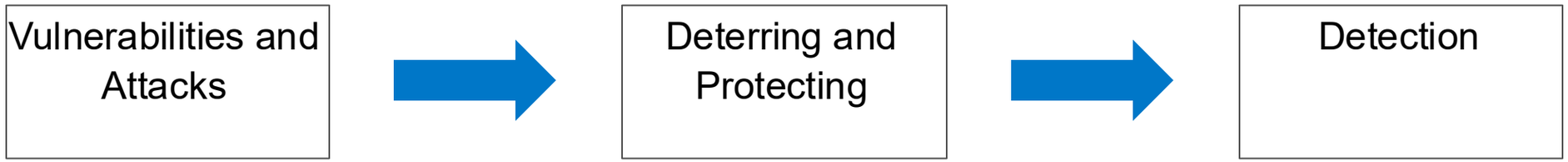
Cyber attacks per day, one attack every 38 seconds[3]

As we attempt to better the lives of our students, Cybersecurity is a field that is here to stay and will help provide our students with upward mobility opportunities, create new opportunities for generational wealth, change their families' lives, and help improve their communities.
— Dr. Diego Tibaquirá, *Professor*, Miami Dade College, and *Advisory Board Member*

Sources: 1. https://www.cyberseek.org/heatmap.html 2. https://cybersupply.org/
3. http://https//www.forbes.com/advisor/education/it-and-tech/cybersecurity-statistics/

AP Cybersecurity Overview

- Unit 1: Introduction to Cybersecurity
- Unit 2: Physical Security
- Unit 3: Network Security
- Unit 4: Device Security
- Unit 5: Data and Application Security



Legal and Professional Standards of Practice

AP Cybersecurity

- The practice of cybersecurity is shaped by laws, regulations, and professional standards.
- The CED will include a page explaining to teachers and students the importance of following the legal and professional norms of practice in cybersecurity.
- This page will also outline some of the key laws and professional norms.

Timeline

1

2024-25

Approximately 125 schools participated in a pilot in target states

2

2025-26

Approximately 450 schools will participate in an expanded pilot across 25-30 states

3

2026-27

AP Cybersecurity launches nationally

4

2027-28

AP Networking launches nationally

Best-in-class cybersecurity curricula built for teachers by teachers

Vision

A future where the nation's cybersecurity needs are met by a knowledgeable, skilled, and passionate workforce

Mission

Ensure that every K-12 student gains foundational and technical cybersecurity knowledge and skills

Approach

Empower teachers with resources and training needed to deliver cyber content to students

- One of the nation's only cybersecurity curriculums trusted by the Cybersecurity & Infrastructure Security Agency
- Built to CompTIA Security+, Network+ and Linux+ standards
- Comprehensive and easy-to-use K-12 Cybersecurity Learning Standards available nationwide to educators at no cost and wholesale to industry
- Immediate access and effortless onboarding
- Self-paced training with expert support

Curricula & Resources

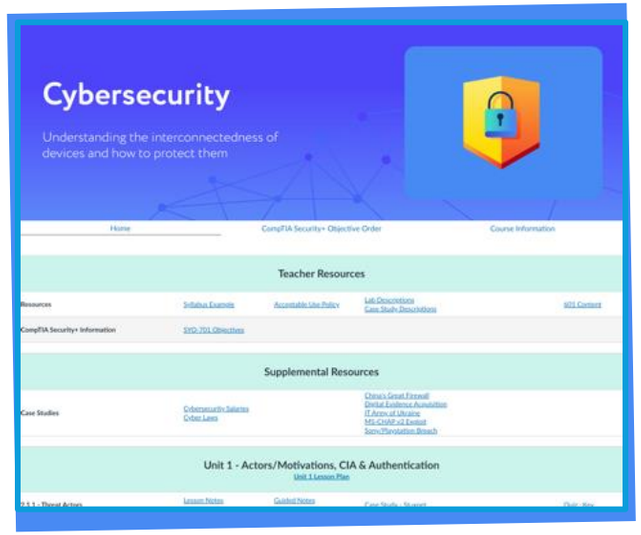
Industry leading curricula for elementary, middle, and high school

Cybersecurity Basics

- Introduces cybersecurity topics that affect everyday life
- Security, digital citizenship, and computing systems

Intro to Cybersecurity

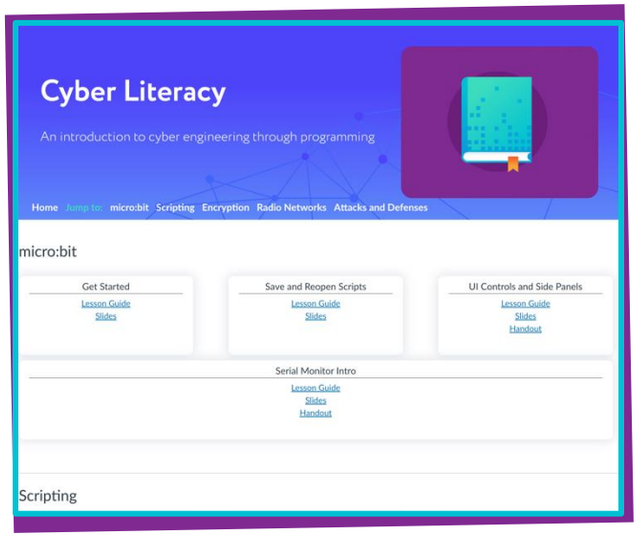
- Intro to basic cybersecurity concepts
- Inspire interest in cybersecurity careers
- No prerequisite knowledge required
- Utilizes the CYBER.ORG Range



Cybersecurity

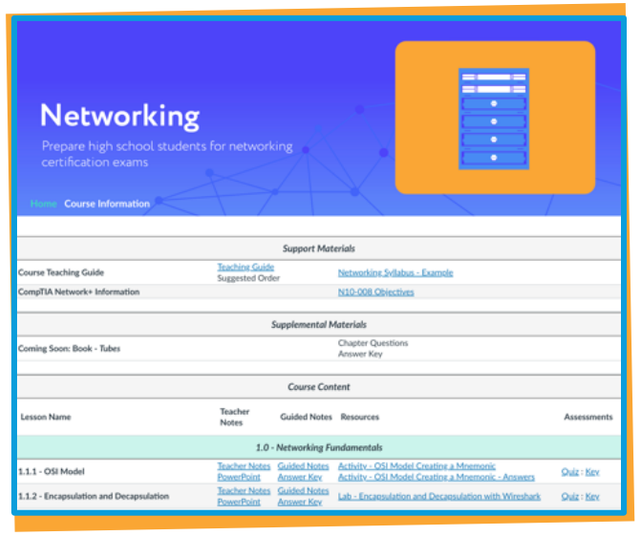
- Comprehensive year-long course
- 150+ lesson topics and activities
- Real-world cybersecurity concepts and skills
- Aligned to CompTIA Security+ objectives

Industry leading curricula for elementary, middle, and high school



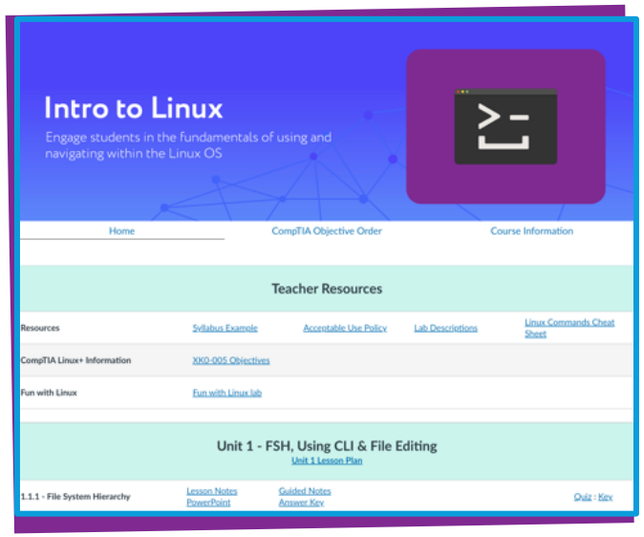
Cyber Literacy

- Blends physical computing and Python programming with cybersecurity
- Provides hands-on opportunities to understand network topologies and how cyber attacks affect them
- Works with the BBC micro:bit and CYBER.ORG cyber:bot.



Networking

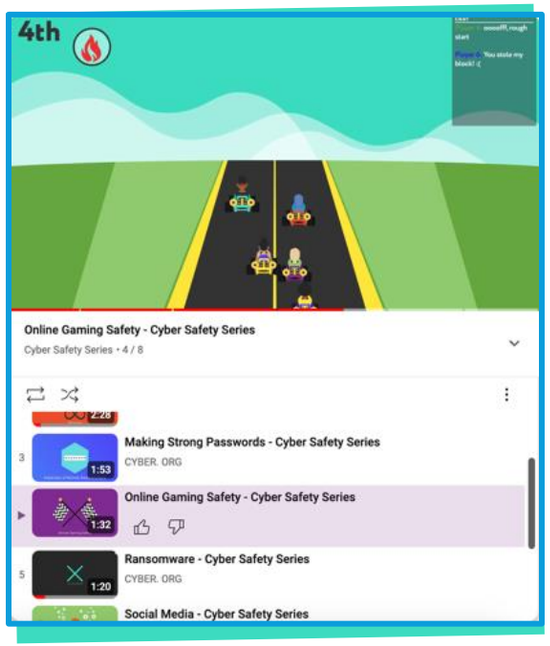
- Comprehensive year-long course
- Foundational knowledge for network administration
- Prepares students for CompTIA Network+ certification



Intro to Linux

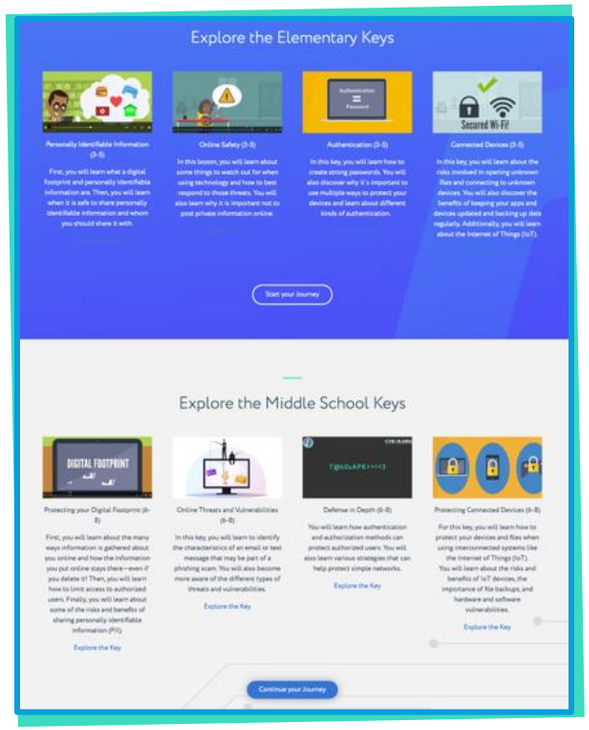
- Comprehensive semester-long course
- Linux administration and management
- Prepares students for CompTIA Linux+ certification

Engaging materials and activities



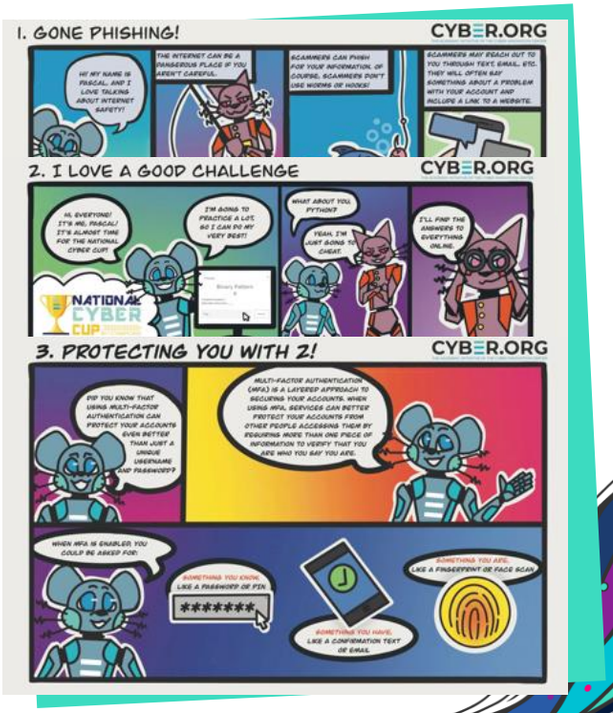
Cyber Safety Video Series

Keys to Cybersecurity



Career Profiles

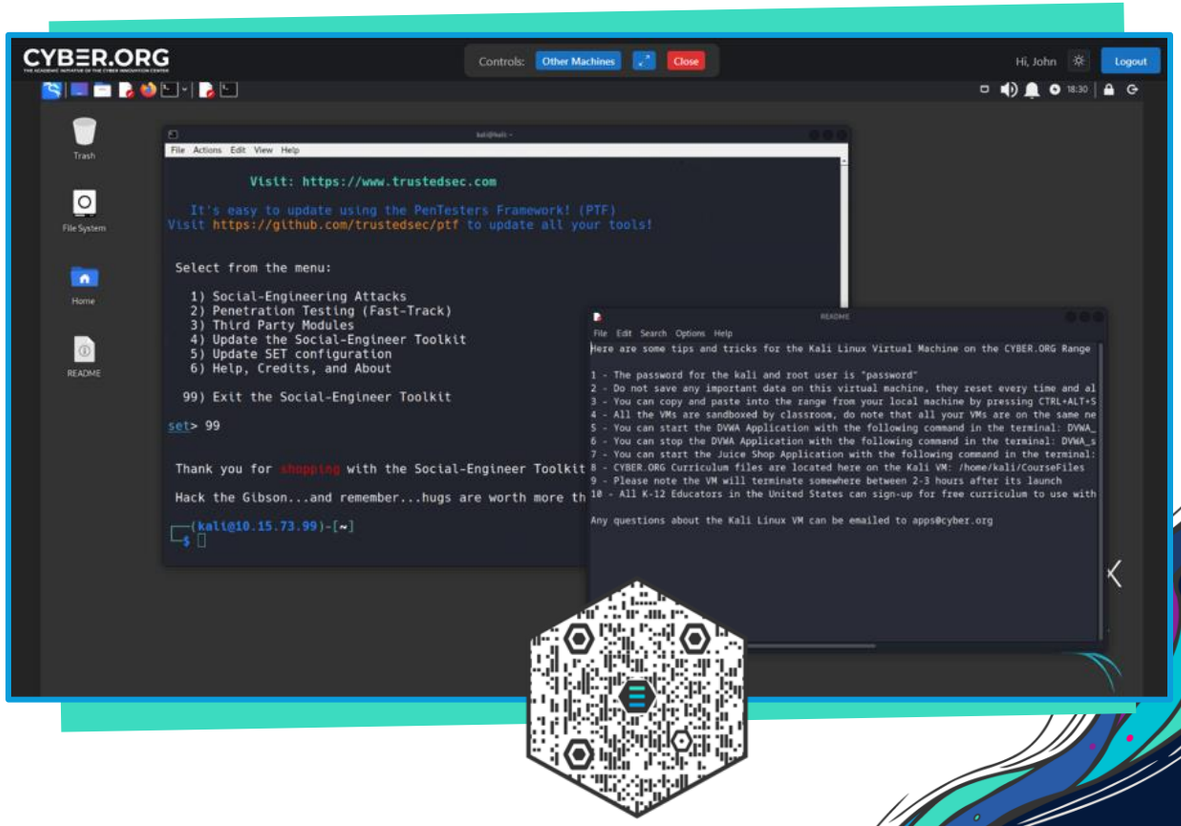
Pascal & Python Comic Series



CYBER.ORG Range

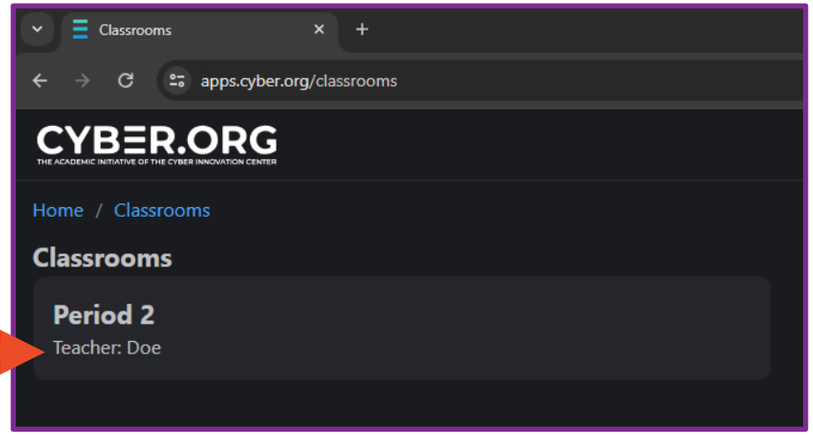
CYBER.ORG RANGE

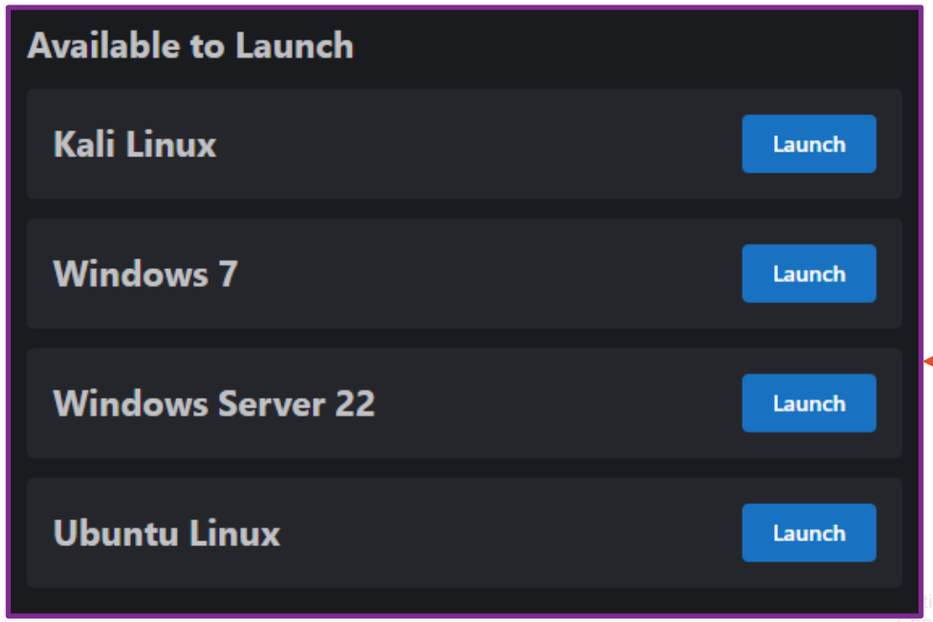
- A secure, virtual environment to practice cybersecurity skills
- Cloud-based and capable of running virtual machines with access to the internet but closed off from any private networks
- No additional hardware or software necessary
- Lead students through labs to experience simulated cyber attacks
- Complete labs in multiple courses within the Range
- Available to all K-12 educators in the U.S.



I’m logged in… Now what?

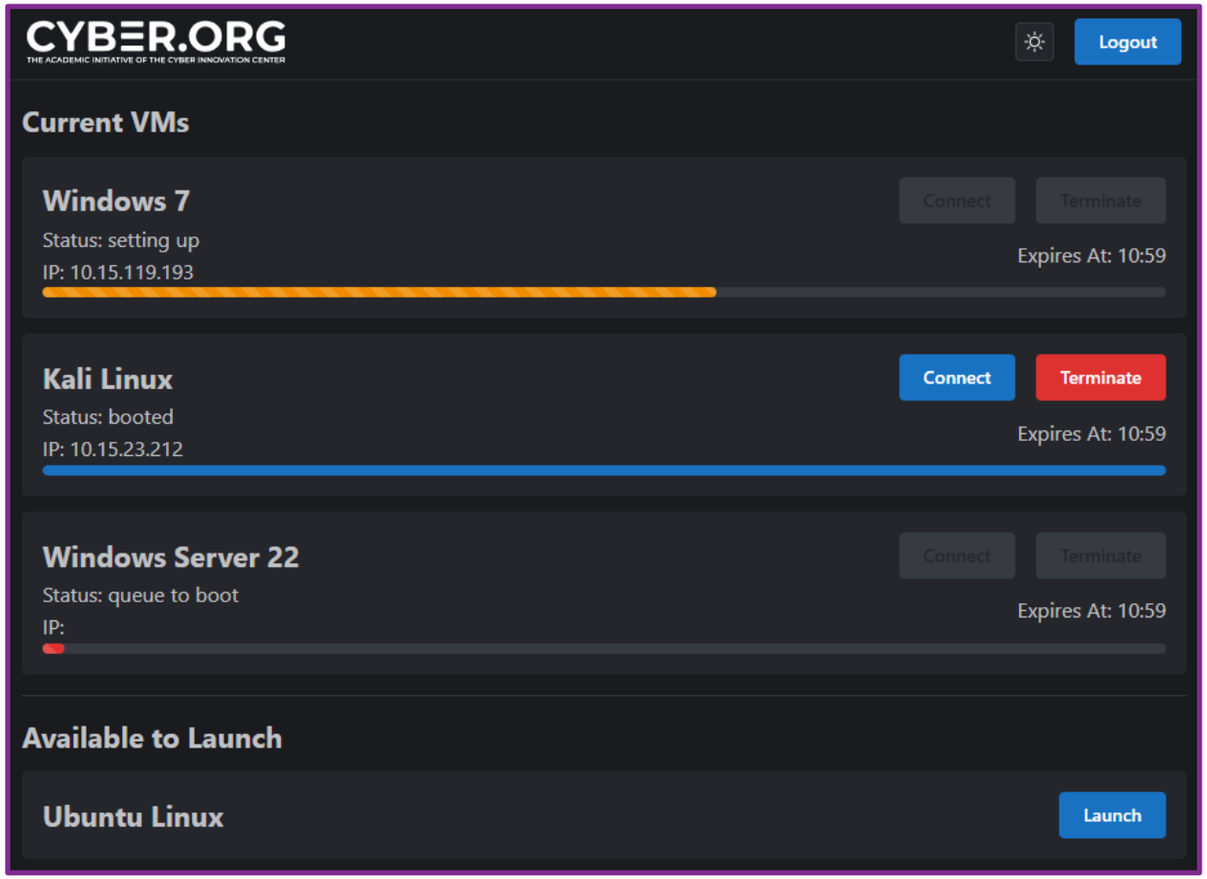
- You should see a classroom listed and your instructor’s name
- Click on it





- Inside the classroom, you will see the virtual machines listed
- Click “Launch” which will start that machine, but remember it is like starting up a real computer so it will take time to boot up

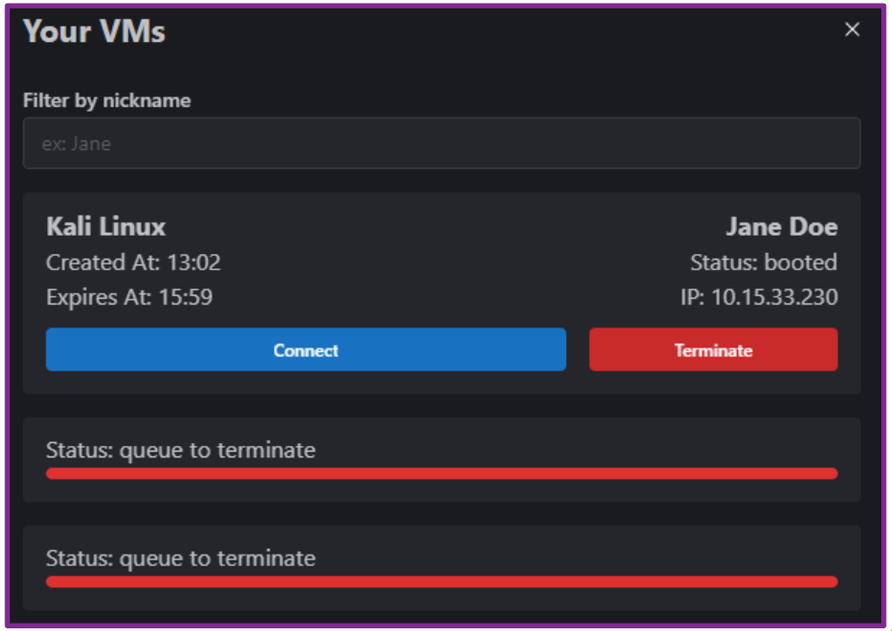
Launching Machines



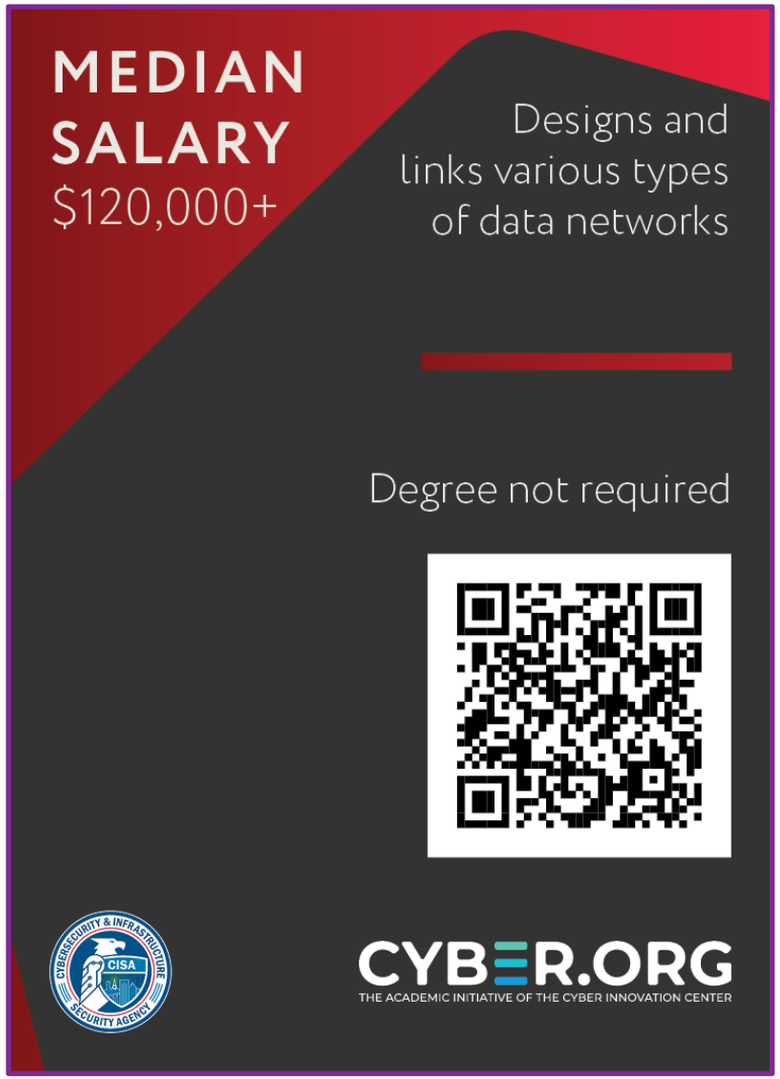
- Launch all the machines if you have not done so
- Clicking “Launch” on a machine will set it to queue to boot – Like hitting the main power button
- Once launched, it has to setup everything to run – Like the loading time before logging in
- Once fully booted, you will have the option to “Connect” and “Terminate”

Non-persistence

- After you hit the “Terminate” button or if your machine times out after the set expiration time, then anything saved to the virtual machine will be lost/ erased
- Launching a new one means the virtual machine will start as if it is a brand-new machine
- This proves useful when we start using stronger tools and programs down the road that could lead to machines failing or crashing



Cyber Career Spotlight



Q&A

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