

A Classroom Resource Guide for Engaging Students in Cybersecurity

Cybersecurity is a fast-growing field and the next generation of cybersecurity experts is sitting in your classroom today. The Department of Homeland Security (DHS) developed this guide to support cybersecurity education in the classroom. Help your students become the cybersecurity professionals of tomorrow!

Classroom and Professional Development Resources:

Integrate cybersecurity concepts into your classroom

The National Integrated Cyber Education and Research Center (NICERC), with a grant from DHS, developed cybersecurity-integrated middle and high school curricula such as Cyber Literacy, Physics, and Advanced Math.

All courses are embedded with cyber concepts to stimulate students' pursuit of cybersecurity careers and studies. There are over 1,400 hours of content including several lesson plans, activities, and materials. Visit the [NICERC website](#)¹ to access the curricula and use the [Cyber Interstate Framework](#)¹ to help integrate the courses into your classroom.

Also, visit the [K-12 Computer Science Framework](#)² to learn how to adopt a specialized computer science curriculum for school and statewide use.

Start a competition team

Encourage students to pursue their interest in cybersecurity by starting a cybersecurity competition team! There are thousands of competitions available on [CyberCompEx.org](#)³. Spending as little as three hours a week with your students as a coach or mentor will help foster the aptitude needed to be part of the next generation of cybersecurity experts.

Attend professional development workshops

NICERC offers opportunities for middle and high school teachers to get hands-on experience on how to engage students in the classroom – for **free**! Teachers can schedule in-person workshops for their districts and schools, ranging from two to seven days to cover material found in the NICERC curricula. The workshops are available for scheduling throughout the year including in the summer. Visit the [NICERC website](#)⁴ for more information on professional development.

Build your cybersecurity knowledge

The Federal Virtual Training Environment (FedVTE), supported by DHS, offers **free** online cybersecurity training courses to all government employees, including state, local, tribal, and territorial (SLTT) government employees. Many public school teachers are SLTT employees and may be eligible to access FedVTE. There are more than 60+ courses available. Get 24/7 access to [FEDVTE](#)⁵ by creating an account with your government email address.

Frequently Asked Questions by Students:

What is “cybersecurity?”

Cybersecurity focuses on protecting computers, networks, and information from unauthorized access or attacks. Devices connected to the Internet are vulnerable to such attacks and need to be protected.

Why is cybersecurity important?

Cybersecurity professionals protect and defend our computers and networks from threats, such as criminal hackers, who try to illegally obtain personal and national security information.

What can I do with a cybersecurity degree?

Cybersecurity degrees are incredibly useful in many different industries, ranging from law enforcement to medicine to social media. For example, professionals can work with law enforcement to protect the nation against criminal network invasions or they could

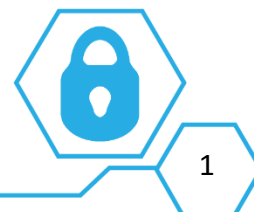
¹ <http://nicerc.org/curricula/>

² <https://k12cs.org/>

³ <https://www.cybercompex.org/>

⁴ <http://nicerc.org/pd/>

⁵ www.fedvte.usalearning.gov



A Classroom Resource Guide for Engaging Students in Cybersecurity

work for a social media company such as Facebook to secure users' account information. Visit the [National Cybersecurity Workforce Framework](#)⁶ to learn more about cybersecurity specializations.

What type of work does a cybersecurity professional do?

Cybersecurity professionals are multitasked and can work in many different roles across all industries. They can use their:

- Technical expertise to build and monitor networks.
- Creativity to design and build new tools to prevent cyberattacks.
- Leadership skills to provide managerial oversight to their teams in protecting sensitive data and systems.

What type of degrees can I pursue to become a cybersecurity professional?

Most colleges and universities offer degree programs related to cybersecurity including:

- Computer Engineering
- Computer Networks and Security
- Cybersecurity Policy and Management
- Information Assurance
- Software Development and Security
- Information Sciences and Technology
- Information Security

Which schools offer cybersecurity degrees?

Hundreds of colleges and universities across the country offer cybersecurity degree programs. Some of these programs are designated as National Centers of Academic Excellence (CAE) by DHS and the National Security Agency (NSA) because they meet the highest standards of cybersecurity education. Visit the [CAE Website](#)⁷ to learn more about the 200+ CAEs.

Are scholarships available to study cybersecurity?

Yes! The CyberCorps®: Scholarship for Service (SFS) is a program that covers the cost of tuition and other related expenses in exchange for a commitment to government service upon graduation. Visit the [SFS site](#)⁸ to learn more.

How can I get more involved in learning about cybersecurity?

- **Start a cyber competition team.** Competitions are a great way to practice cybersecurity skills in a simulated real-world environment. Some even offer internships or scholarships! Visit [Cybercompex](#)⁹ to find a competition today!
- **Attend a cyber camp.** You'll be amazed at how many cyber summer camps there are all over the country! One example is [GenCyber](#)¹⁰, where participants get to learn about what cybersecurity means in everyday life and how to become part of the next generation of cybersecurity experts. These camps are **FREE** – and some camps are even for teachers! Visit [GenCyber](#)¹⁰ to find out about upcoming summer camps in your local area. And the list goes on – in Louisiana, [Cyber Discovery](#)¹¹ camps for teachers and students have been held for years. In the summer of 2016, Virginia held 32 cyber summer camps throughout the state. Don't miss a great opportunity to learn more cybersecurity (and have fun doing so!).
- **Explore the National Cybersecurity Workforce Framework.** Students can read the Workforce Framework to learn more about the required knowledge, skills, and abilities to become a cybersecurity professional.

Have questions? Need more information?

Email the [National Cybersecurity Education and Training Program](#) for answers to all cybersecurity-related questions!

⁶ <https://niccs.us-cert.gov/workforce-development/cyber-security-workforce-framework>

⁷ https://www.iad.gov/NIETP/reports/cae_designated_institutions.cfm

⁸ <https://niccs.us-cert.gov/formal-education/cybercorps-scholarship-service-sfs>

⁹ <https://www.cybercompex.org/>

¹⁰ <https://www.gen-cyber.com/>

¹¹ <http://nicerc.org/events/cyber-discovery/>

