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Office of Career, Technical, and Adult Education
Virginia Department of Education

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Course Description

Suggested Grade Level: 10 or 11 or 12
Prerequisites: 8291

Students will continue to examine how cybersecurity impacts work and family life. This course focuses on a more in-depth study of emerging technologies in the home and careers including the understanding of concepts, practices, threats, risks, and responses in cybersecurity.

Task Essentials Table

- Tasks/competencies designated by plus icons (⊕) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (⊙) are optional
- Tasks/competencies designated by minus icons (⊖) are omitted
- Tasks marked with an asterisk (*) are sensitive.
<table>
<thead>
<tr>
<th>8292</th>
<th><strong>Tasks/Competencies</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>Examine cybersecurity concepts.</td>
</tr>
<tr>
<td>☑</td>
<td>Analyze information assurance.</td>
</tr>
<tr>
<td>☑</td>
<td>Examining laws related to cybersecurity.</td>
</tr>
<tr>
<td>*</td>
<td>Analyze ethics in relation to information systems.</td>
</tr>
<tr>
<td>☑</td>
<td>Examine legal and ethical issues surrounding data privacy.</td>
</tr>
<tr>
<td>☑</td>
<td>Analyze threats and vulnerabilities in information systems.</td>
</tr>
<tr>
<td>☑</td>
<td>Assess the motivations of various threat actors.</td>
</tr>
<tr>
<td>☑</td>
<td>Examine types of cyber threats.</td>
</tr>
<tr>
<td>☑</td>
<td>Investigate cybersecurity risk and how it relates to threats and vulnerabilities.</td>
</tr>
<tr>
<td>☑</td>
<td>Examine the consequences of unsecured data.</td>
</tr>
<tr>
<td>☑</td>
<td>Research methods used to secure personal and organizational data.</td>
</tr>
<tr>
<td>☑</td>
<td>Identify a cybersecurity breach.</td>
</tr>
<tr>
<td>☑</td>
<td>Outline the response when personal data is compromised.</td>
</tr>
<tr>
<td>☑</td>
<td>Outline the response to an organizational data breach.</td>
</tr>
<tr>
<td>☑</td>
<td>Research current and future trends in the use of information technology (IT) systems within arts, A/V technology, and communications.</td>
</tr>
<tr>
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<td>Identify types of data and applicable laws in arts, A/V technology, and communications.</td>
</tr>
<tr>
<td>☑</td>
<td>Investigate threats in arts, A/V technology, and communications.</td>
</tr>
<tr>
<td>☑</td>
<td>Explore careers in arts, A/V technology, and communications affected by cybersecurity.</td>
</tr>
<tr>
<td>☑</td>
<td>Research current and future trends in the use of IT systems within training and education.</td>
</tr>
<tr>
<td>☑</td>
<td>Identify types of data and applicable laws in training and education.</td>
</tr>
<tr>
<td>☑</td>
<td>Investigate threats in training and education.</td>
</tr>
<tr>
<td>Task</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>🔹</td>
<td>Explore careers in training and education affected by cybersecurity.</td>
</tr>
<tr>
<td>🔹</td>
<td>Research current and future trends in the use of IT systems within hospitality and tourism.</td>
</tr>
<tr>
<td>🔹</td>
<td>Identify types of data and applicable laws in hospitality and tourism.</td>
</tr>
<tr>
<td>🔹</td>
<td>Investigate threats in hospitality and tourism.</td>
</tr>
<tr>
<td>🔹</td>
<td>Explore careers in hospitality and tourism affected by cybersecurity.</td>
</tr>
<tr>
<td>🔹</td>
<td>Research current and future trends in the use of IT systems within human services.</td>
</tr>
<tr>
<td>🔹</td>
<td>Identify types of data and applicable laws in human services.</td>
</tr>
<tr>
<td>🔹</td>
<td>Investigate threats in human services.</td>
</tr>
<tr>
<td>🔹</td>
<td>Explore careers in human services affected by cybersecurity.</td>
</tr>
<tr>
<td>🔹</td>
<td>Research current and future trends in the use of IT systems within finance.</td>
</tr>
<tr>
<td>🔹</td>
<td>Identify types of data and applicable governing bodies in the financial industry.</td>
</tr>
<tr>
<td>🔹</td>
<td>Investigate threats in the finance industry.</td>
</tr>
<tr>
<td>🔹</td>
<td>Explore careers in finance affected by cybersecurity.</td>
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</tbody>
</table>

Legend: 🔹Essential ☐Non-essential ☐Omitted

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**Curriculum Framework**

**Investigating Cybersecurity Concepts**

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**Task Number 39**

**Examine cybersecurity concepts.**

**Definition**

Examination includes
• data types (e.g., data in transit, data at rest, unstructured data, structured data)
• data classification (e.g., personal data, public data, confidential data)
• information systems (e.g., networks, hardware, software).

Process/Skill Questions

Thinking

• How does the type of data influence how it is managed?
• What are the different types of data?

Communication

• How is electronic data transmitted?
• How can an understanding of cybersecurity concepts assist in communicating with others about issues regarding data?

Leadership

• How can leaders instruct their team members on cybersecurity concepts?
• What consequences may result when people do not understand cybersecurity concepts?

Management

• What are the consequences of not understanding data types?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You

FCCLA: STAR Events (2019)

Check the national FCCLA portal.
Task Number 40

Analyze information assurance.

Definition

Analysis includes techniques for protecting information systems and managing the risks to systems by protecting user data through measures of

- confidentiality
- integrity
- availability
- authenticity
- nonrepudiation.

Process/Skill Questions

Thinking

- What is information assurance?
- Who is affected by organizational goals set around protecting information systems?

Communication

- What are questions to ask to determine the level of information assurance?
- What resources exist to evaluate information assurance?

Leadership

- How does one demonstrate information assurance to clients/others?
- How do leaders audit risk exposure?

Management

- Why is it important to ensure information assurance when dealing with one’s personal information?
- What are the components of a management plan to protect information systems?
Evaluating Ethical Standards and Laws

Task Number 41

Examining laws related to cybersecurity.

Definition

Examination should include major legislative acts related to cybersecurity, including, but not limited to,
• Family Educational Rights and Privacy Act of 1974 (FERPA)
• Counterfeit Access Device and Computer Fraud and Abuse Act of 1984
• Electronic Communications Privacy Act of 1986 (ECPA)
• Computer Security Act of 1987
• Health Insurance Portability and Accountability Act of 1996 (HIPAA)
• Gramm-Leach-Bliley Act (GLB Act or GLBA), also known as the Financial Modernization Act of 1999
• National Cybersecurity Protection Advancement Act of 2015

**Process/Skill Questions**

**Thinking**

- Why are these legislative acts important to cybersecurity?
- What future legislative action may be necessary based on trends in cybersecurity?
- What factors or events may lead to legislation affecting cybersecurity?

**Communication**

- How does one communicate effectively with members of the legislature about cybersecurity issues?
- How does one explain the effect of legislative acts to others?

**Leadership**

- How does understanding legislative acts influence the goal of protecting personal and/or organizational information?
- What can people do to change laws and policies they believe to be detrimental to cybersecurity?

**Management**

- How does one keep current on legislative actions relating to cybersecurity?
- How can one stay informed about the legislative process?
- What knowledge and skills are needed to analyze the effects of cybersecurity legislation on people/organizations?

**FCCLA National Programs**

**Career Connection: My Career**

**Career Connection: My Life**

**Career Connection: My Path**
Task Number 42

Analyze ethics in relation to information systems. (sensitive)

Definition

Analysis should include concepts such as

- cyberbullying
- sexting
- information-system access (including unauthorized access, hacking)
- attempts to subvert information security measures
- copyright laws and guidelines.

Process/Skill Questions

Thinking

- What is meant by ethics?
- What is an information system?
- How can ethics issues affect an information system?
Communication

- How can users of information systems learn about ethics expectations?
- What are some consequences that may result when cybersecurity ethics are violated?

Leadership

- What can leaders do to encourage ethical actions in relation to information systems?
- What procedures should leaders follow when faced with a breach of ethics?

Management

- What knowledge and skills are needed to analyze the effects of ethics in cybersecurity?
- What may be the consequence if a person/organization acts unethically?

FCCLA National Programs

Career Connection: My Career

Career Connection: My Life

Career Connection: My Path

Career Connection: My Skills

Community Service: Lead

Community Service: Learn

Community Service: Serve

Families First: Families Today

Families First: Meet the Challenge

Financial Fitness: Protecting

Power of One: A Better You

FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Interpersonal Communications
Task Number 43

Examine legal and ethical issues surrounding data privacy.

Definition

Examination includes

- personally-identifiable information (PII)
- the value of personal information and the value of privacy to individuals and to organizations
- disclosure of personal and organizational information (i.e., how much information should be given out and when).

Process/Skill Questions

Thinking

- What information should not be disclosed?
- What is PII and how can it be protected?

Communication

- What communication consequences can exist when individuals do not understand legal and ethical aspects of cybersecurity?
- What are some ways to share knowledge of legal and ethical issues related to cybersecurity?

Leadership

- What can leaders do to help others build skills to understand legal language?
- How can a leader be a role model as far as awareness of the legal and ethical issues surrounding cybersecurity?

Management

- How can people determine if they are properly managing their personal/organizational data/information?
- What can happen if an individual/organization acts unethically with electronic data?
FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Community Service: Lead
Community Service: Learn
Community Service: Serve
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You

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Examining Cyber Threats and Vulnerabilities

Task Number 44
Analyze threats and vulnerabilities in information systems.

Definition

Analysis should include concepts such as

- **asset** (as it relates to a secure environment)—a person, structure, facility, information and records, information technology systems and resources, material, process, relationships, or reputation that has value
- **vulnerability**—a characteristic or specific weakness that renders an organization or asset (such as information or an information system) open to exploitation by a given threat or susceptible to a given hazard
- **exploit**—a technique to breach the security of a network or information system in violation of security policy
- **threat**—a circumstance or event that has or indicates the potential to exploit vulnerabilities and to adversely affect (create adverse consequences for) organizational operations, organizational assets (including information and information systems), individuals, other organizations, or society
- **attack vector**—a path or route used by the adversary to gain access to the target (asset)
- **threat agents**—an individual, group, organization, or government that conducts or has the intent to conduct detrimental activities
- **safeguards**—a practice, procedure, or mechanism that reduces risk.

Resources: National Initiative for Cybersecurity Careers and Studies (NICCS), Information System and Audit Control Association (ISACA), United States Computer Emergency Readiness Team (US-CERT)

Process/Skill Questions

**Thinking**

- What is an asset in a secure environment?
- What is an attack vector?

**Communication**

- What information should be communicated to stakeholders (members, public) when a cyber threat has been identified?
- What are communication consequences if individuals do not understand cybersecurity threat and vulnerability issues and terms?

**Leadership**

- How can leaders guide others to identify and analyze threat actors?
- How can leaders support others in learning more about threat actors?
Management

- What consequences may result if a person is not alert to the presence of cyber threats?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Community Service: Lead
Community Service: Learn
Community Service: Serve
FACTS: People
FACTS: Roads
FACTS: Vehicles
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

FCCLA: STAR Events (2019)

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Task Number 45

Assess the motivations of various threat actors.

Definition

Assessment should include

- **script kiddies**—unskilled attackers who do not have the ability to discover new vulnerabilities or write exploit code and are dependent on the research and tools from others; goal is achievement; subgoals are to gain access and deface web pages
- **hacktivists**—attackers with primary goals of bringing attention to a social or political cause or seeking vengeance for what they consider to be a political or societal wrongdoing; skills of hacktivists can range from script kiddies to professional and/or sophisticated hackers
- **malicious insiders**—a disgruntled organization insider is a principal source of computer crime; insiders may not need a great deal of knowledge about computer intrusions because their knowledge of a target system often allows them to gain unrestricted access to cause damage to the system or to steal system data; insider threats also include outsourcing vendors as well as employees who accidentally introduce malware into systems
- **criminal enterprises**—attackers target systems for monetary gain; specifically, organized crime groups use spam, phishing, and spyware/malware to commit identity theft and online fraud; international corporate spies and organized crime organizations also pose a threat to the United States through their ability to conduct industrial espionage and large-scale monetary theft and to hire or develop hacker talent
- **competitors or rogue corporations**—organizations that engage in hacking against competitors with the intention of stealing intellectual property or gaining financial competitive advantages
- **nation-state sponsored**—goal is to weaken, disrupt, or destroy the United States; subgoals include espionage for attack purposes, espionage for technology advancement, disruption of infrastructure to attack the U.S. economy, full-scale attack of the infrastructure when attacked by the United States, to damage the ability of the United States to continue its attacks
- **ideological militants.**

Teacher resource: [Industrial Control System Cyber Emergency Response Team (ICS-CERT)](https://www.icscert.gov)

Process/Skill Questions

Thinking
• What is a threat actor?
• Why is it important to identify the motivation of a threat actor?

Communication

• Who should be informed of identified threat actors?
• What communication skills are helpful in identifying the motivations of threat actors?

Leadership

• How can leaders encourage policies and procedures to protect against threat actors?
• What factors should be considered when a leader determines how to respond to a threat actor?

Management

• What data is used to determine the motivation of a threat actor?
• What lessons have been learned from studying the motivations of past cybersecurity threat actors?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Community Service: Lead
Community Service: Learn
Community Service: Serve
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence
Task Number 46

Examine types of cyber threats.

Definition

Examination should include, but not be limited to

- phishing attacks (e.g., spearphishing, whaling, business email scams [BES])
- malicious email attachments
- attacks on authentication (e.g., password, biometrics)
- hacking, spamming, malvertising (e.g., on the web vs. applications)
- cross-site scripting attack (XSS)
- SQL injection (SQLi)
- denial of service (DoS) and distributed denial of service – (DDoS), botnets
- malware (e.g., viruses, worms, ransomware)
- competitor-sponsored hacking
- nation-state-sponsored hacking
- dark web

Process/Skill Questions

Thinking

- What is a cyber threat? What could be done to minimize cyber threats?
- What are clues to a cyber threat?

Communication

- How can professionals communicate the importance of identifying cyber threats?
- Who should be contacted when a cyber threat has been identified?

Leadership
• What can a leader do to educate others of the dangers of cyber threats?
• How can a leader educate others on appropriate actions to take when faced with a cyber threat?

Management

• What management strategies can be used to help identify cyber threats?
• What management strategies can be used to decrease the chance of a cyberattack?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Community Service: Lead
Community Service: Learn
Community Service: Serve
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

FCCLA: STAR Events (2019)

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National Programs in Action

Professional Presentation
Public Policy Advocate
Task Number 47

Investigate cybersecurity risk and how it relates to threats and vulnerabilities.

Definition

Investigation includes

- cybersecurity risk assessment
- risk management
  - risk mitigation—reducing the likelihood of the risk
  - risk transfer—transferring the risk to another company, such as an insurance firm
  - risk avoidance—avoiding the possibility of the risk (e.g., not using a specific software program would avoid any known risks of that program)
  - risk acceptance—understanding and accepting the risks associated with use of a system or feature.

Process/Skill Questions

Thinking

- How does one know that an online retailer is reputable and safe?
- What is cybersecurity risk?

Communication

- How can professionals communicate the importance of cybersecurity risk management?
- What communication skills are helpful in reporting risks, threats, and vulnerabilities?

Leadership

- How can leaders encourage cybersecurity risk management?
- How can a leader be a good role model for investigating risks and threats?

Management

- What procedures can be put into place to reduce cybersecurity risk?
- How are cybersecurity risks managed?

FCCLA National Programs
Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Community Service: Lead
Community Service: Learn
Community Service: Serve
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

FCCLA: STAR Events (2019)
Check the national FCCLA portal.

Interpersonal Communications
Leadership
National Programs in Action
Professional Presentation
Public Policy Advocate

Securing Personal and Organizational Data
Task Number 48

Examine the consequences of unsecured data.

Definition

Examination includes the consequences of unsecured data to

- individuals
  - identity theft
  - compromised financial information (e.g., credit problems)
  - fraud
  - compromised reputation
- organizations
  - loss
    - reputation
    - financial assets
    - productivity
  - cost of mitigation
  - legal implications.

Process/Skill Questions

Thinking

- What are the consequences of unsecured data?
- How can unauthorized access to online data affect a person’s life?

Communication

- Why is the communication of compromised financial information important to consumers?
- How can effective communication minimize the likelihood of a person having unsecured data?

Leadership

- What role do leaders have in securing online data?
- Why is it the role of the leader to safeguard online data?

Management

- What consequences may result from unauthorized access to unsecured data?
• How can the consequences of unauthorized access to unsecured data be reversed?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Community Service: Lead
Community Service: Learn
Community Service: Serve
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

FCCLA: STAR Events (2019)

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Interpersonal Communications
National Programs in Action
Professional Presentation
Public Policy Advocate

Task Number 49
Research methods used to secure personal and organizational data.

Definition

Research includes methods used by

- individuals
  - use a password manager
  - use strong passwords (i.e., uppercase, lowercase, number, symbol, fourteen characters, passphrases)
  - look for https (or the lock icon) for online transactions
  - activate two-factor authentication for important accounts (e.g., for all email accounts, financial accounts)
  - use biometric authentication
- organizations
  - use network security devices (e.g., firewalls, intrusion detection systems [IDS], intrusion prevention systems [IPS], network proxy)
  - conduct vulnerability analysis
  - apply defense-in-depth measures (e.g., perimeter security, end-point security)
  - conduct penetration testing (i.e., looking for network vulnerabilities from the outside).

Process/Skill Questions

Thinking

- Why must people and organizations employ security measures to safeguard data?
- How is the knowledge of possible breaches in security beneficial in safeguarding data?

Communication

- What communication methods may be used to communicate research findings?
- How can a person or organization communicate the importance of research method results to stakeholders?

Leadership

- What role does a leader have in synthesizing research results to determine the data’s relevance to a particular situation?
- Why is the timeliness of research results relevant to certain situations?

Management
• What goals can be set for using research methods in determining possible solutions to information breaches?
• How can research methods be used to manage past, current, and future information breaches?

**FCCLA National Programs**

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

**FCCLA: STAR Events (2019)**

Check the national [FCCLA portal](http://example.com).

**Interpersonal Communications**

National Programs in Action

**Professional Presentation**

**Public Policy Advocate**

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### Responding to Cybersecurity Compromises and Breaches
Task Number 50

Identify a cybersecurity breach.

Definition

Identification includes

- definition of breach as unauthorized access to an organization’s network
- types of breaches (i.e., type of system and data that was breached)
- indicators of a breach.

Process/Skill Questions

Thinking

- What is the consequence of an information breach?
- How can information breaches be avoided?

Communication

- What effective communication methods can be used to minimize the possibility of an information breach?
- Why is the timeliness of communicating cybersecurity breaches important?

Leadership

- How can effective leadership affect a company’s rebound from a breach?
- What leadership strategies are effective in minimizing the damage caused by a cybersecurity breach?

Management

- How does decision making affect the outcome of a cybersecurity breach?
- What are some consequences of not addressing a breach in a timely manner?

FCCLA National Programs

Families First: Meet the Challenge

Financial Fitness: Protecting
Task Number 51

Outline the response when personal data is compromised.

Definition

Outline includes

- types of personal data that can be compromised (e.g., social security number [SSN], personal identification number [PIN], email, social media account information)
- actions that individuals must take
  - update passwords
  - contact relevant institutions (e.g., credit reporting agencies, financial institution)
  - contact law enforcement
  - review lessons learned from the experience of compromised personal data to minimize the likelihood of future data compromises (e.g., evaluating strength of password, scrutinizing online vendors).

Process/Skill Questions

Thinking

- What analysis techniques can be used to determine the response needed if personal data is compromised?
- How does the response to a situation involving personal data being compromised affect the outcome?

Communication
• Who is responsible for communicating an incident of compromised data to a person or organization?
• How important is timely communication in an instance of personal data being compromised?

Leadership

• What leadership skills are necessary in dealing with a situation where personal data is compromised?

Management

• What management techniques are used in securing online data?
• What can a person learn from experiencing a situation where personal data is compromised?

FCCLA National Programs

Community Service: Lead

Community Service: Learn

Community Service: Serve

Families First: Meet the Challenge

Financial Fitness: Protecting

Power of One: A Better You

STOP the Violence

FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Event Management

Interpersonal Communications

Leadership

National Programs in Action

Professional Presentation
Task Number 52

Outline the response to an organizational data breach.

Definition

Outline includes actions such as

- identifying and deactivating compromised accounts
- identifying compromised systems
- installing a patch or update to eradicate the vulnerability
- contacting affected individuals (e.g., system administrators, employees, clients, patrons)
- contacting law enforcement
- reviewing lessons learned through the breach to prevent future breaches.

Process/Skill Questions

Thinking

- What is the protocol when an organization's data is breached?
- Who would evaluate an organizational data breach?

Communication

- What types of communication methods can be used in outlining a response to an organizational data breach?
- What are effective communication tools to use in the instance of an organizational data breach?

Leadership

- Why is it critical for an organizational leader to evaluate an information breach?
- What leadership skills should be used in communicating the effects of an organizational data breach?

Management

- How can an organization forecast and address the consequences of a data breach?
- When can an organization determine the existence of a data breach?
FCCLA National Programs

Financial Fitness: Protecting

Power of One: A Better You

STOP the Violence

FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Event Management

Interpersonal Communications

Leadership

National Programs in Action

Professional Presentation

Public Policy Advocate

Analyzing Cybersecurity in Arts, A/V Technology, and Communications

Task Number 53

Research current and future trends in the use of information technology (IT) systems within arts, A/V technology, and communications.

Definition
Research includes identifying

- IT systems and trends
- emerging technologies (e.g., designing fashion using software, texting tools for communications, drone use).

Process/Skill Questions

Thinking

- What resources can be used to determine current and future trends?
- What research methods can be used to identify current and future trends in IT?

Communication

- How can current and future trends in IT be communicated to industry personnel?
- How can current and future trends in IT be communicated to consumers?

Leadership

- What role do leaders in the IT profession have in determining the needs of consumers and in doing so, create trends?
- Where can leaders turn to determine the trends of the IT profession?

Management

- How can the needs of consumers be met through the use of current trends in IT?
- What resources can be used to help consumers with limited income access current and future trends in IT?

FCCLA National Programs

Families First: Meet the Challenge

Financial Fitness: Protecting

Power of One: A Better You

STOP the Violence

FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Interpersonal Communications
Task Number 54

Identify types of data and applicable laws in arts, A/V technology, and communications.

Definition

Identification includes data such as intellectual property (e.g., copyrighted, trademarked, or patented) and laws such as copyright law (e.g., Copyright Act of 1976).

Process/Skill Questions

Thinking

- Why do intellectual property laws exist?
- How does the infringement on property rights affect the cybersecurity field?

Communication

- How are intellectual property rights and laws communicated to consumers?
- Who is responsible for communicating the most recent intellectual property rights and laws to business, industry, and consumers?

Leadership

- How does preserving intellectual property rights and laws affect the arts, A/V technology, and communications industry?
- What role do leaders within the arts, A/V technology, and communications industry have in identifying intellectual property rights and laws?

Management

- Why does it make sense to identify the intellectual property rights and laws in the arts, A/V technology, and communications industry?
- How might not understanding intellectual rights and property affect the arts, A/V technology, and communications industry?
FCCLA National Programs

Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

FCCLA: STAR Events (2019)
Check the national FCCLA portal.

Leadership

Professional Presentation

Public Policy Advocate

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Task Number 55

Investigate threats in arts, A/V technology, and communications.

Definition

Investigation includes applying knowledge of past and current threats to the arts, A/V technology, and communications industry to predict future threats and consequences within the industry.

Process/Skill Questions

Thinking

- What are some threats to the arts, A/V technology, and communications industry?
- How might threats to the arts, A/V technology, and communications industry affect the integrity of the industry?

Communication
• What methods of communication would best relay what professionals know about past and current threats to the arts, A/V technology, and communications industry?
• What affect will accurate communication of past and/or current threats have to the arts, A/V technology, and communications industry?

Leadership

• How does investigating threats to the arts, A/V technology, and communications industry affect the integrity of the industry?
• Who do leaders in the arts, A/V technology, and communication industry have to work with in investigating threats?

Management

• How does this task interrelate with other tasks?
• What is the significance of the interrelationship?

FCCLA National Programs

Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
STOP the Violence

FCCLA: STAR Events (2019)
Check the national FCCLA portal.

Leadership

National Programs in Action
Professional Presentation
Public Policy Advocate

Task Number 56
Explore careers in arts, A/V technology, and communications affected by cybersecurity.

Definition

Exploration includes using online job research and job posting sites such as

- Virginia Employment Commission
- CyberSeek
- O*Net OnLine
- Virginia Education Wizard
- USAJobs.gov
- Scholarship for Service.

Teacher resource: Virginia Space Grant Consortium's free video series, Breaking the Code on a Career in Cybersecurity, which features interviews with cyber professionals about their career pathways.

Also, exploration should include

- experiencing sales lost due to theft of intellectual property
- undergoing layoffs due to loss of business
- experiencing damage to the brand
- suffering suppressed creativity
- encountering loss of consumer confidence.

Process/Skill Questions

Thinking

- What careers in cybersecurity are relevant to the arts, A/V technology, and communications industry?
- Where can a prospective employee find careers in the arts, A/V technology, and communications industry?

Communication

- How do careers within this industry use communication?
- What communication skills are needed by future employees in fulfilling various careers in the arts, A/V technology, and communications industry?

Leadership

- What role do leaders within the industry have in identifying the current and future career needs?
• How can leaders educate career professionals about the importance of cybersecurity in the arts, A/V technology, and communications industry?

Management

• What criteria does a professional use in determining career possibilities in cybersecurity?
• What goal-setting strategies would effectively address the needs in cybersecurity?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Families First: Balancing Family and Career
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Protecting
Power of One: A Better You
Power of One: Working on Working

FCCLA: STAR Events (2019)
Career Investigation
Check the national FCCLA portal.

Entrepreneurship

Interpersonal Communications

Job Interview

Professional Presentation
Analyzing Cybersecurity in Training and Education

Task Number 57

Research current and future trends in the use of IT systems within training and education.

Definition

Research includes identifying

- IT systems and trends
- emerging technologies (e.g., online grading systems, G Suite for Education, devices used at school, availability of e-books and online textbooks).

Process/Skill Questions

Thinking

- How are IT systems useful within training and education?
- Why are emerging technology trends critical factors when integrating educational IT systems?

Communication

- What criteria should be used to evaluate current and future trends?
- Why are certain guidelines helpful in selecting IT systems?
- What influence do future trends have on emerging technologies within training and education?

Leadership

- What criteria should be used to assess future trends in IT systems?
- What techniques help distinguish value among IT systems within training and education?

Management
• What management skills are needed to select IT systems within a training and educational setting?
• What consequences may result from not following protocols regarding the use of IT systems in education?

**FCCLA National Programs**

Career Connection: My Career  
Career Connection: My Life  
Career Connection: My Path  
Career Connection: My Skills  
Power of One: A Better You  
Power of One: Working on Working  

**FCCLA: STAR Events (2019)**

Career Investigation  
Check the national [FCCLA portal](#).  

Early Childhood Education  
Entrepreneurship  
National Programs in Action  
Professional Presentation  
Teach and Train  

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**Task Number 58**

**Identify types of data and applicable laws in training and education.**

Definition
Identification includes data such as student data (e.g., student identification [ID] numbers, lunchroom codes) and laws such as FERPA.

**Process/Skill Questions**

**Thinking**

- Why is it important to safeguard student data?
- What laws protect student data?

**Communication**

- When is it appropriate to communicate student data?
- What laws apply when communicating student data within and outside of educational settings?

**Leadership**

- What criteria should be followed when using student data?
- What is the protocol when student data is breached?

**Management**

- What universal procedures apply to data breach management?
- What resources help identify cybersecurity-related laws applicable to training and education?

**FCCLA National Programs**

**Career Connection: My Career**

**Career Connection: My Life**

**Career Connection: My Path**

**Career Connection: My Skills**

**Families First: Families Today**

**Power of One: A Better You**

**Power of One: Working on Working**

**FCCLA: STAR Events (2019)**
Task Number 59

Investigate threats in training and education.

Definition

Investigation includes applying knowledge of past and current threats to the training and education industry to predict future threats and consequences within the industry.

Process/Skill Questions

Thinking

- What is the relationship between past and current threats in the training and education industry?
- How is knowledge of past threats and consequences used to predict future threats and consequences?

Communication

- How can one communicate the importance of cyber threats and consequences within the industry?
• How can management create universal threat prevention methods to minimize consequences?

Leadership

• How can a leader best anticipate future threats and consequences?
• How can one learn of past and current threats to the training and education industry?

Management

• What training and resources are necessary to predict future threats and consequences?
• How do managers evaluate past and current threats within the industry?

FCCLA National Programs

Career Connection: My Career

Career Connection: My Life

Career Connection: My Path

Career Connection: My Skills

Power of One: A Better You

Power of One: Working on Working

STOP the Violence

FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Early Childhood Education

National Programs in Action

Professional Presentation

Task Number 60
Explore careers in training and education affected by cybersecurity.

Definition

Exploration includes using online job research and job posting sites such as

- Virginia Employment Commission
- CyberSeek
- O*Net OnLine
- Virginia Education Wizard
- USAJobs.gov
- Scholarship for Service.

Teacher resource: Virginia Space Grant Consortium's free video series, Breaking the Code on a Career in Cybersecurity, which features interviews with cyber professionals about their career pathways.

Also, exploration should include

- understanding that colleges and universities house innovation research and other intellectual property
- knowing that educational institutions maintain sensitive student information
- knowing that universities sometimes have their own medical centers
- understanding that educational institutions are more vulnerable due to budget limitations
- recognizing that school systems are vulnerable to cyber attacks
- recognizing and valuing acceptable use policies (AUP).

Process/Skill Questions

Thinking

- What is the relationship between emerging technologies and cybersecurity career pathways?
- What careers in training and education are affected by cybersecurity?

Communication

- How does one develop a unique skill set as a cybersecurity professional?
- How does professional development factor into the career development of a cybersecurity professional?

Leadership

- How do professionals stay current in maintaining sensitive institutional data?
Management

- How can employers maintain profitability while using cybersecurity best practices?

FCCLA National Programs

Career Connection: My Career

Career Connection: My Life

Career Connection: My Path

Career Connection: My Skills

Power of One: Working on Working

STOP the Violence

FCCLA: STAR Events (2019)

Career Investigation

Check the national FCCLA portal.

Early Childhood Education

Interpersonal Communications

National Programs in Action

Professional Presentation

Analyzing Cybersecurity in Hospitality and Tourism

Task Number 61
Research current and future trends in the use of IT systems within hospitality and tourism.

Definition

Research includes identifying

- IT systems and trends
- emerging technologies (e.g., e-keys, robotic room service, valet-by-text, online reservations and remote hotel check-in, self-driving cars, mobile pay, table-top ordering at restaurants, rideshare apps).

Process/Skill Questions

Thinking

- How are IT systems useful within hospitality and tourism?
- Why are emerging technology trends critical factors when integrating IT systems within hospitality and tourism?

Communication

- What criteria should be used to evaluate current and future trends?
- Why are guidelines helpful in selecting IT systems?

Leadership

- What criteria should be used to assess future trends in IT systems?
- What techniques are appropriate in distinguishing among IT systems for use within hospitality and tourism?

Management

- What management skills are needed to select IT systems?
- What consequences may result from not following IT system protocols?

FCCLA National Programs

Career Connection: My Career

Career Connection: My Life

Career Connection: My Path

Career Connection: My Skills
Financial Fitness: Protecting

Power of One: A Better You

Power of One: Working on Working

STOP the Violence

FCCLA: STAR Events (2019)

Career Investigation

Entrepreneurship

Hospitality, Tourism, and Recreation

Interpersonal Communications

National Programs in Action

Professional Presentation

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Task Number 62

Identify types of data and applicable laws in hospitality and tourism.

Definition

Identification includes data such as credit card and location data and compliance with standards such as Payment Card Industry Data Security Standard (PCI DSS).

Process/Skill Questions

Thinking

- Why is it important to safeguard student data within training and education?
- What laws protect personal data within hospitality and tourism?

Communication
• When is it appropriate to communicate personal data within hospitality and tourism?
• What laws apply when communicating consumer data?

Leadership

• What rules apply to the use of personal information?
• What is the protocol to follow when consumer data is breached?

Management

• What management procedures help protect consumer data?
• What resources help identify laws applicable to the hospitality and tourism industry?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Financial Fitness: Protecting
Power of One: A Better You
Power of One: Working on Working
STOP the Violence

FCCLA: STAR Events (2019)

Entrepreneurship

Hospitality, Tourism, and Recreation

National Programs in Action

Professional Presentation

Public Policy Advocate
Task Number 63

Investigate threats in hospitality and tourism.

Definition

Investigation includes applying knowledge of past and current threats to the hospitality and tourism industry to predict future threats and consequences within the industry.

Process/Skill Questions

Thinking

- What is the relationship between past and current threats in the hospitality and tourism industry?
- How can knowledge of past threats help predict future threats and consequences within the hospitality and tourism industry?

Communication

- How can professionals communicate the importance of cybersecurity?
- How can management take steps to maintain cybersecurity?

Leadership

- How can professionals anticipate future threats and consequences?
- How can one learn about past and current cybersecurity threats in the hospitality and tourism industry?

Management

- What training and resources help predict future threats and consequences?
- How do cybersecurity professionals evaluate past and current threats?

FCCLA National Programs

Financial Fitness: Protecting

Power of One: A Better You

Power of One: Working on Working

STOP the Violence
FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Entrepreneurship

Hospitality, Tourism, and Recreation

Interpersonal Communications

National Programs in Action

Professional Presentation

Task Number 64

Explore careers in hospitality and tourism affected by cybersecurity.

Definition

Exploration includes using online job research and job posting sites such as

- Virginia Employment Commission
- CyberSeek
- O*Net OnLine
- Virginia Education Wizard
- USAJobs.gov
- Scholarship for Service.

Teacher resource: Virginia Space Grant Consortium's free video series, Breaking the Code on a Career in Cybersecurity, which features interviews with cyber professionals about their career pathways.

Also, exploration may include

- describing the vulnerability of the chip card
- describing the issues found with the Europay-Mastercard-Visa (EMV)-compliant point-of-sale (POS) systems
- describing issues with mobile pay platforms
- identifying the exposure involved in orally relaying information to an agent
- identifying the information (e.g., contact details, travel itinerary, birthdays) that these venues maintain
• describing issues with sharing personal data and travel services
• describing issues with compromise of rewards programs, third-party vendors data, affiliated companies
• understanding varying government identity requirements.

Process/Skill Questions

Thinking

• What is the relationship between emerging technologies and cybersecurity career pathways?
• What careers in hospitality and tourism are affected by cybersecurity?

Communication

• What attributes are needed to become a professional within cybersecurity?
• How can hospitality and tourism professionals learn of cybersecurity factors that affect the industry?

Leadership

• How can professionals stay current in maintaining sensitive institutional data?

Management

• How can employers maintain profitability while addressing critical cybersecurity factors?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Financial Fitness: Protecting
Power of One: A Better You
Power of One: Working on Working

FCCLA: STAR Events (2019)
Analyzing Cybersecurity in Human Services

Task Number 65
Research current and future trends in the use of IT systems within human services.

Definition
Research includes identifying

- IT systems and trends
- emerging technologies (e.g., mobile apps, online human resources systems, Internet of Things [IoT], assistive devices, baby monitor, home security, electronic health records [EHR]).

Process/Skill Questions
Thinking

- How are IT systems useful within human services?
- Why are emerging technology trends critical factors when integrating IT systems?

Communication

- What criteria should be used to evaluate current and future trends?
• Why are guidelines helpful in selecting IT systems?

**Leadership**

• What criteria should be used to assess future trends in IT systems?
• What techniques help distinguish among IT systems?

**Management**

• What management skills are needed to select IT systems within the human services industry?
• What consequences may result from not following IT system protocols?

**FCCLA National Programs**

**Families First: Families Today**

**Families First: Meet the Challenge**

**Financial Fitness: Protecting**

**Power of One: A Better You**

**Power of One: Working on Working**

**FCCLA: STAR Events (2019)**

Check the national [FCCLA portal](#).

**Entrepreneurship**

**Interpersonal Communications**

**National Programs in Action**

**Professional Presentation**

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**Task Number 66**

**Identify types of data and applicable laws in human services.**

**Definition**
Identification includes data such as social security numbers and laws such as HIPAA.

**Process/Skill Questions**

**Thinking**

- Why is it important to safeguard personal data within human services?
- What laws protect personal data within human services?

**Communication**

- When is it appropriate to communicate personal data within human services?
- What laws apply when communicating consumer data within the human services industry?

**Leadership**

- What criteria should be followed when using consumers’ personal information?
- What is the protocol when consumer data is breached?

**Management**

- What management procedures help protect consumer data?
- What resources help identify applicable laws in human services?

**FCCLA National Programs**

**Career Connection: My Career**

**Career Connection: My Life**

**Career Connection: My Path**

**Career Connection: My Skills**

**Families First: Families Today**

**Families First: Meet the Challenge**

**Financial Fitness: Protecting**

**Power of One: A Better You**

**Power of One: Working on Working**
Task Number 67

Investigate threats in human services.

Definition

Investigation includes applying knowledge of past and current threats (e.g., elder or minor abuse and fraud, identity theft) to the human services industry to predict future threats and consequences within the industry.

Process/Skill Questions

Thinking

- What is the relationship between past and current threats in the human services industry?
- How does knowledge of past threats help predict future threats and consequences within the human services industry?

Communication

- How can professionals communicate the importance of cybersecurity?
- How can management create universal threat prevention?

Leadership

- How can professionals anticipate future threats and consequences?
- How can one learn about the past and current threats to the human services industry?

Management

- What training and resources help predict future cybersecurity threats and consequences?
• What criteria should be used to evaluate past and current threats within the industry?

**FCCLA National Programs**

Families First: Families Today

Families First: Meet the Challenge

Families First: You-Me-Us

Financial Fitness: Protecting

Power of One: A Better You

Power of One: Working on Working

STOP the Violence

**FCCLA: STAR Events (2019)**

Check the national [FCCLA portal](#).

**Entrepreneurship**

**Interpersonal Communications**

**Leadership**

**National Programs in Action**

**Professional Presentation**

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**Task Number 68**

**Explore careers in human services affected by cybersecurity.**

**Definition**

Exploration includes using online job research and job posting sites such as

- Virginia Employment Commission
- CyberSeek
• O*Net OnLine
• Virginia Education Wizard
• USAJobs.gov
• Scholarship for Service.

Teacher resource: Virginia Space Grant Consortium's free video series, Breaking the Code on a Career in Cybersecurity, which features interviews with cyber professionals about their career pathways.

Also, exploration includes

• conducting a risk assessment
• continuing education
• monitoring devices
• enforcing strict policies (including third-party policies)
• obtaining advice from legal counsel.

Process/Skill Questions

Thinking

• What resources are available to help seek human services careers related to cybersecurity?
• What human service jobs are available that will need cybersecurity personnel?
• What is the relationship between emerging technologies and cybersecurity career pathways?

Communication

• How should a student explore careers within cybersecurity?
• What communication attributes are required for cybersecurity professionals?

Leadership

• How can counselors and teachers help with identifying human services careers?
• How can participation in a career and technical student organization help build teamwork and cooperation?
• How can professionals stay current in maintaining sensitive institutional data?

Management

• What consequences can result if a career choice does not match the individual?
• How can setting educational goals help one stay on the right path academically?
• How can employers maintain profitability while maintaining cybersecurity?

FCCLA National Programs
Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Families First: Families Today
Families First: Meet the Challenge
Families First: You-Me-Us
Financial Fitness: Protecting
Power of One: A Better You
Power of One: Family Ties
Power of One: Working on Working

FCCLA: STAR Events (2019)
Check the national FCCLA portal.
Entrepreneurship
Focus on Children
Interpersonal Communications
National Programs in Action
Professional Presentation

__________________________________________

Analyzing Cybersecurity in Finance

__________________________________________
Task Number 69

Research current and future trends in the use of IT systems within finance.

Definition

Research includes

- identifying IT systems and trends
- emerging technologies (e.g., banking apps and online banking, text communications between an individual and a bank, voice-recognition software, online investing).

Process/Skill Questions

Thinking

- What are some current trends in the use of IT systems in finance?
- How do emerging technologies help protect financial institutions from cyber threats?

Communication

- What tools do businesses within the finance industry use to communicate with customers?
- How can keeping customers informed improve public relations?

Leadership

- Which Family, Career, and Community Leaders of America (FCCLA) national program can help teens learn about keeping financial and personal interests safe?
- Why is it important for teens to sharpen skills in money management and financial planning?

Management

- What consequences may result if a person does not keep passwords safe?
- How could sharing password information jeopardize a person’s financial standing?

FCCLA National Programs

Career Connection: My Career

Career Connection: My Life
Task Number 70

Identify types of data and applicable governing bodies in the financial industry.

Definition
Identification includes financial data (e.g., account numbers) and regulatory bodies such as Federal Deposit Insurance Corporation (FDIC), National Credit Union Administration (NCUA), U.S. Securities and Exchange Commission (SEC), and standards such as PCI.

**Process/Skill Questions**

**Thinking**
- What are some examples of financial data?
- What are the names of some organizations that maintain or monitor financial data?

**Communication**
- What organization(s) should be contacted if a consumer believes his/her financial data has been compromised?
- How soon after the suspected activity should this contact occur?

**Leadership**
- What is the role of the FDIC in protecting deposited funds?
- What organization(s) can a person contact if they have concerns about a financial institution?

**Management**
- What consequences may result if a financial institute fails to protect customer accounts?
- What is the role of various governing bodies in the financial industry?

**FCCLA National Programs**

- Career Connection: My Career
- Career Connection: My Life
- Career Connection: My Path
- Career Connection: My Skills
- Financial Fitness: Earning
- Financial Fitness: Protecting
- Financial Fitness: Saving
- Financial Fitness: Spending
Task Number 71

Investigate threats in the finance industry.

Definition
Investigation includes applying knowledge of past and current threats to the finance industry (e.g., market manipulation) to predict future threats and consequences within the industry.

Process/Skill Questions

Thinking
- What are some past threats that have affected the finance industry?
- What potential cyber threats exist in the finance industry?

Communication
- What media sources are available to disseminate information?
- What role does active listening play in investigating cybersecurity threats in the finance industry?

Leadership
- Why is it important to predict potential threats to the finance industry?
- How is cooperation helpful in identifying how a breach occurred?
Management

- What are some tactics individuals can use when using debit cards?
- What are some consequences that can result when a person does not exercise caution when using an ATM?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Families First: Families Today
Families First: Meet the Challenge
Financial Fitness: Earning
Financial Fitness: Protecting
Financial Fitness: Saving
Financial Fitness: Spending
Power of One: A Better You
Power of One: Working on Working
STOP the Violence

FCCLA: STAR Events (2019)

Check the national FCCLA portal.

Entrepreneurship
Interpersonal Communications
National Programs in Action
Professional Presentation
Task Number 72

Explore careers in finance affected by cybersecurity.

Definition

Exploration includes using online job research and job posting sites such as

- Virginia Employment Commission
- CyberSeek
- O*Net OnLine
- Virginia Education Wizard
- USAJobs.gov
- Scholarship for Service.

Teacher resource: Virginia Space Grant Consortium's free video series, Breaking the Code on a Career in Cybersecurity, which features interviews with cyber professionals about their career pathways.

Also, exploration includes

- the effect of cybersecurity on the daily lives of workers in the financial industry
- mandatory continuing education to address emerging threats and practices
- cybersecurity scenarios within the financial industry
- incidence-response procedures within the financial industry
- cybersecurity careers embedded within the financial industry.

Teacher resource: Financial Services Information Sharing and Analysis Center (FS-ISAC)

Process/Skill Questions

Thinking

- What are some work-based learning experiences related to cybersecurity?
- What are some Internet sites that post jobs?

Communication

- What role does reading play in locating job search sites?
- Why is a positive attitude helpful when searching for a job?

Leadership
• How can performing a career assessment help one decide to pursue a career in cybersecurity?
• What FCCLA competitive event can help teens research and explore a career?

Management

• Why is it important for a financial institution to have a plan for handling a cybersecurity attack?
• What consequences may result if a financial institution fails to follow breach protocols?

FCCLA National Programs

Career Connection: My Career
Career Connection: My Life
Career Connection: My Path
Career Connection: My Skills
Financial Fitness: Earning
Financial Fitness: Protecting
Financial Fitness: Saving
Financial Fitness: Spending
Power of One: A Better You
Power of One: Working on Working

FCCLA: STAR Events (2019)
Career Investigation
Check the national FCCLA portal.
Entrepreneurship
Interpersonal Communications
Professional Presentation
## SOL Correlation by Task

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Task Description</th>
<th>Subject Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Examine cybersecurity concepts.</td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>40</td>
<td>Analyze information assurance.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>41</td>
<td>Examining laws related to cybersecurity.</td>
<td>English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>42</td>
<td>Analyze ethics in relation to information systems.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>43</td>
<td>Examine legal and ethical issues surrounding data privacy.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>44</td>
<td>Analyze threats and vulnerabilities in information systems.</td>
<td>English: 10.3, 10.5, 11.3, 11.5, 12.3, 12.5</td>
</tr>
<tr>
<td>45</td>
<td>Assess the motivations of various threat actors.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>46</td>
<td>Examine types of cyber threats.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>47</td>
<td>Investigate cybersecurity risk and how it relates to threats and vulnerabilities.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>48</td>
<td>Examine the consequences of unsecured data.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>49</td>
<td>Research methods used to secure personal and organizational data.</td>
<td>English: 10.8, 11.8, 12.8</td>
</tr>
<tr>
<td>50</td>
<td>Identify a cybersecurity breach.</td>
<td>English: 10.3, 10.5, 11.3, 11.5, 12.3, 12.5</td>
</tr>
<tr>
<td>51</td>
<td>Outline the response when personal data is compromised.</td>
<td>English: 10.6, 11.6, 12.6</td>
</tr>
<tr>
<td>52</td>
<td>Outline the response to an organizational data breach.</td>
<td>English: 10.6, 11.6, 12.6</td>
</tr>
<tr>
<td>53</td>
<td>Research current and future trends in the use of information technology (IT)</td>
<td>English: 10.8, 11.8, 12.8</td>
</tr>
<tr>
<td></td>
<td>systems within arts, A/V technology, and communications.</td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td></td>
<td>Identify types of data and applicable laws in arts, A/V technology, and communications.</td>
<td>English: 10.5, 11.5, 12.5</td>
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<tr>
<td>55</td>
<td>Investigate threats in arts, A/V technology, and communications.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>56</td>
<td>Explore careers in arts, A/V technology, and communications affected by cybersecurity.</td>
<td>English: 10.5, 10.8, 11.8, 12.8</td>
</tr>
<tr>
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<td>History and Social Science: VUS.8, VUS.10, VUS.14</td>
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<tr>
<td>57</td>
<td>Research current and future trends in the use of IT systems within training and education.</td>
<td>English: 10.8, 11.8, 12.8</td>
</tr>
<tr>
<td>58</td>
<td>Identify types of data and applicable laws in training and education.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>59</td>
<td>Investigate threats in training and education.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
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<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>60</td>
<td>Explore careers in training and education affected by cybersecurity.</td>
<td>English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
</tr>
<tr>
<td>61</td>
<td>Research current and future trends in the use of IT systems within hospitality and tourism.</td>
<td>English: 10.8, 11.8, 12.8</td>
</tr>
<tr>
<td>62</td>
<td>Identify types of data and applicable laws in hospitality and tourism.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>63</td>
<td>Investigate threats in hospitality and tourism.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>64</td>
<td>Explore careers in hospitality and tourism affected by cybersecurity.</td>
<td>English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>65</td>
<td>Research current and future trends in the use of IT systems within human services.</td>
<td>English: 10.8, 11.8, 12.8</td>
</tr>
<tr>
<td>66</td>
<td>Identify types of data and applicable laws in human services.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>67</td>
<td>Investigate threats in human services.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and Social Science: VUS.14, WHII.14</td>
</tr>
<tr>
<td>68</td>
<td>Explore careers in human services affected by cybersecurity.</td>
<td>English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
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</tbody>
</table>
69 Research current and future trends in the use of IT systems within finance. | English: 10.8, 11.8, 12.8

70 Identify types of data and applicable governing bodies in the financial industry. | English: 10.5, 11.5, 12.5
History and Social Science: VUS.14, WHII.14

71 Investigate threats in the finance industry. | English: 10.5, 11.5, 12.5
History and Social Science: VUS.14, WHII.14

72 Explore careers in finance affected by cybersecurity. | English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8
History and Social Science: VUS.14, WHII.14

**Teacher Resource**

[**AFA CyberPatriot**](https://www.aforcyberpatriot.com) is the National Youth Cyber Education Program created by the Air Force Association to inspire K-12 students toward careers in cybersecurity or other science, technology, engineering, and mathematics (STEM) disciplines critical to our nation's future. At the core of the program is the National Youth Cyber Defense Competition, the nation's largest cyber defense competition that puts high school and middle school students in charge of securing virtual networks.
Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- Cloud Essentials Certification Examination
- IC3 Digital Literacy Certification Examination
- IT Fundamentals+ Certification Examination
- Microsoft Technology Associate (MTA) Examinations
- Security Pro Certification Examination
- Security+ Certification Examination

Concentration sequences: A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.

- Cybersecurity Fundamentals (6302/36 weeks)
- Cybersecurity in Family and Consumer Sciences (8291/36 weeks)

Career Cluster: Arts, Audio/Video Technology and Communications

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio and Video Technology and Film</td>
<td>Audio and Video Equipment Technician</td>
</tr>
<tr>
<td></td>
<td>Audio-Video Designer, Engineer</td>
</tr>
<tr>
<td></td>
<td>Sound Engineering Technician</td>
</tr>
<tr>
<td></td>
<td>Videographer</td>
</tr>
<tr>
<td>Journalism and Broadcasting</td>
<td>Broadcast Technician</td>
</tr>
<tr>
<td>Printing Technology</td>
<td>Desktop Publisher</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>Computer Programmer</td>
</tr>
<tr>
<td></td>
<td>Network Systems and Data Communication Analyst</td>
</tr>
<tr>
<td></td>
<td>Telecommunications Equipment Installer, Repairer</td>
</tr>
<tr>
<td>Visual Arts</td>
<td>Fashion Designer</td>
</tr>
<tr>
<td></td>
<td>Graphic Designer</td>
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</table>
### Career Cluster: Hospitality and Tourism

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurants and Food and Beverage Services</td>
<td>Facilities Manager</td>
</tr>
<tr>
<td></td>
<td>Food Service Manager</td>
</tr>
<tr>
<td></td>
<td>Franchisee</td>
</tr>
<tr>
<td>Travel and Tourism</td>
<td>Human Resources Manager</td>
</tr>
</tbody>
</table>

### Career Cluster: Human Services

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Services</td>
<td>Consumer Advocate</td>
</tr>
<tr>
<td></td>
<td>Debt Counselor</td>
</tr>
<tr>
<td>Family and Community Services</td>
<td>Medical, Public Health Social Worker</td>
</tr>
<tr>
<td></td>
<td>Social and Community Service Manager</td>
</tr>
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</table>