

Detailed Unit Descriptions

UNIT 1: LAW AND ETHICS

Estimated Time in Hours: 13-16

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| <p><u>Big Idea(s)</u></p> <p>1 Ethics 4 Data Security 5 System Security 8 Implications</p> | <p><u>Enduring Understandings</u></p> <p>1.1, 1.2, 1.3, 4.1, 4.2, 5.4, 8.1, 8.2, 8.3</p> | <p><u>Projects & Major Assignments</u></p> <ul style="list-style-type: none"> - Create a Country - Silent Debate (Technology & Law) - Harms & Benefits Reflection on Intellectual Property - Privacy Laws Presentation - Privacy vs. Security Debate - Law and Ethics Game |
| <p>Guiding Questions:</p> <ul style="list-style-type: none"> • How do values shape the security considerations of designers? • How do values shape the security considerations of users? • How do core societal values shape the security considerations in what is allowed or encouraged to be created? • Why is privacy essential for individuals, groups, and governments? • How have historical cybersecurity ideas and events impacted society? | | |
| <p>Learning Objectives & Respective Essential Knowledge Statements</p> | <p>Materials</p> | <p>Instructional Activities and Classroom Assessments</p> |
| <p>1.1.1 LO: Students will analyze online and offline behaviors in societies, i.e., themselves, peers, families, communities, and countries, and deduce the values that govern these behaviors. EK: 1.1.1a</p> | <ul style="list-style-type: none"> • KWL Chart (find example KWL chart at https://www.timvandevall.com/templates/kwl-chart-template/) • Jackson, Tom. <i>Activities that Teach</i>. Red Rock Publishing, 1993. | <p>The Connection Between Values, Ethics & Society: (2-day lesson)</p> <p>Students identify values in their lives and the lives of their classmates.</p> <ul style="list-style-type: none"> • This lesson begins with a KWL pre-assessment on values. In order to help students understand their values and the values of their classmates, students complete the Auction Activity from “Activities That Teach”. The auction has |

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| <p>1.1.2 LO: Students will understand how the role of values and ethics affects political structures, laws, and policy decisions as it relates to cybersecurity. EK: 1.1.2e</p> <p>1.3.2 LO: Students will discuss how ethical obligations to society always coexist with ethical obligations to one’s family, friends, employer, local community, and even oneself. EK: 1.3.2a,b</p> | <ul style="list-style-type: none"> • “Ethics”. <i>BrainPOP.com</i>, https://www.brainpop.com/health/personalhealth/ethics/ • Textbook: Stallings, William and Brown, Lawrie. <i>Computer Security: Principles and Practice, Third Edition</i>. Pearson, 2015. • Poster Paper • Markers • Notebook | <p>items that will help students identify what they value. Once the auction is complete, students discuss what they value based on purchases that were made in the class auction. Students then return to the KWL and update it. Then, students gain an understanding of how values relate to ethics.</p> <ul style="list-style-type: none"> • Students are introduced to ethics through a video, then read section 19.4 - Ethical Issues in the textbook (p.596-601). Students respond to review question 19.13 in their notebook. Students then discuss how ethics relate to values. <p>Finally, students understand how values and ethics relate to the creation of societies.</p> <ul style="list-style-type: none"> • Students work in groups to create a country, naming the country, creating the money, flag, government structure & laws. Once students create their country and share-out, they discuss how they created their society and how the society was a group of individuals characterized by common interests/values. • The lesson is wrapped up with students adding vocabulary to their notebook. In the notebook students define their vocabulary word, write the impact - why it is important, and add a picture to represent the word. |
| <p>1.1.1 LO: Students will analyze online and offline behaviors in societies, i.e., themselves, peers, families, communities, and countries, and deduce the values that govern these behaviors.</p> | <ul style="list-style-type: none"> • Notebook • “The Harm Principle – Learn Liberty.” <i>YouTube</i>, uploaded by Learn Liberty, 21 June 2011, | <p>Technology and Law: (1-2-day lesson)</p> <p>In this lesson students learn the difference between a crime and an unethical decision and can evaluate the arguments of the nature of crime and be able to develop their own understanding of the uses of technology that should be criminal.</p> |

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| <p>EK: 1.1.1b,d</p> <p>1.1.2 LO: Students will understand how the role of values and ethics affects political structures, laws, and policy decisions as it relates to cybersecurity. EK: 1.1.2a</p> <p>1.3.2 LO: Students will discuss how ethical obligations to society always coexist with ethical obligations to one’s family, friends, employer, local community, and even oneself. EK: 1.3.2a,b</p> | <p>https://www.youtube.com/watch?v=Z03OXBbLr40&feature=youtu.be</p> <ul style="list-style-type: none"> • “Hackers Remotely Kill a Jeep on the Highway– With Me in It.” Wired Magazine, <i>Wired.com</i>, 21 July 2015, https://www.wired.com/2015/07/hackers-remotely-kill-jeep-highway/ • Silent Debate Materials, e.g., a worksheet or a large piece of paper, colored pens/pencils (for instructions on Silent Debates, visit https://teach.nflc.umd.edu/startalk/classroom-activity/silent-debate-38) • Textbook: Stallings, William and Brown, Lawrie. <i>Computer Security: Principles and Practice, Third Edition</i>. Pearson, 2015. | <ul style="list-style-type: none"> • Students begin by watching the harm principle video and respond to the following questions in their notebook: “Why does Mill think harm is appropriate for criminal punishment? What sorts of harms do we deal with today that did not occur in Mill’s time? Are those harms appropriate for criminal punishment? What about hacking?” The class discusses the responses students wrote in their notebooks. Students then read the article and watch the video on the Jeep Hacking. Students complete a silent debate about the Jeep Hacking incident. Students then read section 19.1 in the textbook - Cybercrime and Computer Crime (p. 579-583). After reading the text, students discuss their arguments from the silent debate and compare their thoughts with what they learn about cybercrime and computer crime. |
| <p>1.1.1 LO: Students will analyze online and offline behaviors in societies, i.e., themselves, peers,</p> | <ul style="list-style-type: none"> • Notebook • Intellectual Property Poll • Textbook: | <p>Intellectual Property: (1-2-day lesson) In this lesson students learn about intellectual property and how society impacts laws around it.</p> |

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| <p>families, communities, and countries, and deduce the values that govern these behaviors. EK: 1.1.1a,d</p> <p>1.1.2 LO: Students will understand how the role of values and ethics affects political structures, laws, and policy decisions as it relates to cybersecurity. EK: 1.1.2b,d</p> <p>4.2.1 LO: Students will compare and contrast data protection legislation, policies, and procedures that have been or are being introduced all over the world to protect personal data. EK: 4.2.1g</p> | <p>Stallings, William and Brown, Lawrie. <i>Computer Security: Principles and Practice, Third Edition</i>. Pearson, 2015.</p> <ul style="list-style-type: none"> • Cornell Notes (for an explanation of the Cornell note-taking system, visit http://lsc.cornell.edu/student-skills/cornell-note-taking-system/) • “SOPA and 3 Ways to think about Intellectual Property.” <i>YouTube</i>, uploaded by Learn Liberty, 18 Mar 2013, https://www.youtube.com/watch?v=fiFDLuhIq7M&feature=youtu.be • “Online Piracy... It’s Different.” <i>YouTube</i>, uploaded by runofkings, https://www.youtube.com/watch?v=7JSrxb85FY&feature=youtu.be • “Piracy it’s a crime.” <i>YouTube</i>, uploaded by haxorcat, 4 Dec 2007, | <ul style="list-style-type: none"> • This lesson begins with students taking a poll about intellectual property. Class discussion about the results of the poll the students took. Students then read section 19.2 - Intellectual Property in the textbook (p. 583-589) and take Cornell notes. Students then watch the video on intellectual property. Students then discuss the values that intellectual property protection is intended to serve and how acceptable use policies play a role in this. Students watch the two videos on piracy and read <i>Automated Crimes - Automated Justice</i> p.195-199 in <i>Blown to Bits</i>. Students then answer questions in their notebook about the benefits and costs of intellectual property. |
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| | <p>https://www.youtube.com/watch?v=HmZm8vNHBSU&feature=youtu.be</p> <ul style="list-style-type: none"> Abelson, Ledeen, and Lewis. <i>Blown to Bits: Your Life, Liberty, and Happiness After the Digital Explosion</i>. Addison-Wesley Professional, 2008. | |
| <p>1.1.1 LO: Students will analyze online and offline behaviors in societies, i.e., themselves, peers, families, communities, and countries, and deduce the values that govern these behaviors. EK: 1.1.1b,d</p> <p>1.1.2 LO: Students will understand how the role of values and ethics affects political structures, laws, and policy decisions as it relates to cybersecurity. EK: 1.1.2a,c,d</p> <p>1.2.1 LO: Students will discuss how cybersecurity can significantly impact the quality</p> | <ul style="list-style-type: none"> Podcast (start at 4 min 45 sec): Schneier, Bruce and Henage, Dan. "Crypto-Gram February 15, 2020." <i>The Crypto-Gram Security Podcast</i>, Libsyn, 15 Feb 2020, https://hwcdn.libsyn.com/p/4/f/f/4ff722d465bd469f/crypto-gram-2020-02.mp3?c_id=66980507&cs_id=66980507&destination_id=19374&expiration=1595259639&hwt=c2fa9cb974afdf7902e22a29f4a7b4df Textbook: | <p>Privacy: (7 -8-day lesson)</p> <p>In this lesson students learn about how society impacts law around privacy and how digital technology plays a role in privacy.</p> <ul style="list-style-type: none"> The lesson begins with students listening to the podcast linked left (listen to the section on Modern Mass Surveillance, beginning at 4 min 45 sec). The class then discusses what they heard in the podcast about technology, law and society. Students then read section 19.3 - Privacy (p.589-595) in the textbook & The European Data Protection Rules, where they learn about privacy and laws around privacy. Students are given a list of privacy laws and broken up into groups. Each group is assigned a law to research and present to the class. Students then learn about their electronic record and the impact technology has on their privacy. They begin by watching the internet privacy prank, followed by the online safety commercial. Students then read "Social Media Raises Privacy and Ethics Issues" from USA Today and articles supplied by the teacher (e.g., on topics such |

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| <p>of people’s lives both positively and negatively. EK: 1.2.1a,b,c</p> <p>1.3.1 LO: Students will explore the tensions that exist between transparency, autonomy, resilience and security. EK: 1.3.1a,b,c,d</p> <p>1.3.2 LO: Students will discuss how ethical obligations to society always coexist with ethical obligations to one’s family, friends, employer, local community, and even oneself. EK: 1.3.2a,b</p> <p>1.3.3 LO: Students will discuss how even when a cybersecurity practice is legal, it may not be ethical. EK: 1.3.3b,c</p> <p>4.1.1 LO: Students will analyze existing data security concerns and assess methods to overcome those concerns. EK: 4.1.1a,b,c,d,e,f,g</p> | <p>Stallings, William and Brown, Lawrie. <i>Computer Security: Principles and Practice, Third Edition</i>. Pearson, 2015.</p> <ul style="list-style-type: none"> • “EU data protection rules.” European Commission, <i>ec.europa.eu</i>, https://ec.europa.eu/info/law/law-topic/data-protection/eu-data-protection-rules_en • “Internet Privacy Prank.” <i>YouTube</i>, uploaded by BuzzFeedVideo, 3 Apr 2014, https://www.youtube.com/watch?v=YLWmjpPoJHk&feature=youtu.be • “Bulletin Board - Online Safety Commercial.” <i>YouTube</i>, uploaded by OhioCommissionDRCM, https://www.youtube.com/watch?v=nOUu1fldBbl&feature=youtu.be • Jayson, Sharon. “Social media raises privacy and ethics issues.” <i>USA Today</i>, | <p>as how colleges use Facebook to research potential students or how employers use social media to research potential employees). The class has a discussion on how what they post online is permanent and can have an impact on their future. Students then research themselves to see what they can find in their electronic record. They report out using a Voki. Students then investigate the World’s Biggest Data Breaches Website and identify data breaches that may have caused them to lose some of their private information. Students reflect in their notebook about the possible data they have lost and how it could impact their future. Students then read the Tanya Rider story in <i>Blown to Bits</i> (p. 1-2). Students discuss the harms and benefits of privacy when it came to the Tanya Rider story using a Community Circle. Students read the Declaration of Independence and the Bill of Rights. Students use the notes that they have taken on their learning throughout this lesson and use them along with the information that they attain from reading the Declaration of Independence and the Bill of Rights. Students write a persuasive argument citing evidence to answer the following question: “When security and liberty come into conflict, which one should take precedence?” The lesson is wrapped up with a debate about security vs. privacy, using the arguments that the students wrote.</p> |
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| <p>4.2.1 LO: Students will compare and contrast data protection legislation, policies, and procedures that have been or are being introduced all over the world to protect personal data. EK: 4.2.1a,b,c,d,e,f</p> <p>5.4.1 LO: Students will identify historical consequences of software and hardware vulnerabilities, e.g., power outages, death, theft of trade secrets from other sovereign nations. EK: 5.4.1a</p> <p>8.2.1 LO: Students will describe how political ideologies, economic structures, social organizations, and cultural perceptions impact cybersecurity. EK: 8.2.1c</p> <p>8.2.2 LO: Students will analyze how privacy concerns vary greatly in regards to societies, age, and socio-economic status. EK: 8.2.2b</p> | <p><i>USAToday.com</i>, 8 Mar 2014, https://www.usatoday.com/story/news/nation/2014/03/08/data-online-behavior-research/5781447/</p> <ul style="list-style-type: none"> • “World’s Biggest Data Breaches & Hacks.” <i>InformationisBeautiful.net</i>, https://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/ • Abelson, Ledeen, and Lewis. <i>Blown to Bits: Your Life, Liberty, and Happiness After the Digital Explosion</i>. Addison-Wesley Professional, 2008. • “America’s Founding Documents Declaration of Independence: A Transcription.” National Archives, <i>Archives.gov</i>, https://www.archives.gov/founding-docs/declaration-transcript | |
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| | <ul style="list-style-type: none"> • “America’s Founding Documents The Bill of Rights: A Transcription.” National Archives, <i>Archives.gov</i>, https://www.archives.gov/founding-docs/bill-of-rights-transcript | |
| <p>1.1.2 LO: Students will understand how the role of values and ethics affects political structures, laws, and policy decisions as it relates to cybersecurity. EK: 1.1.2c</p> <p>1.2.1 LO: Students will discuss how cybersecurity can significantly impact the quality of people’s lives both positively and negatively. EK: 1.2.1a,b,c</p> <p>1.3.3 LO: Students will discuss how even when a cybersecurity practice is legal, it may not be ethical. EK: 1.3.3a,d</p> <p>8.1.1 LO: Students will summarize and interpret the</p> | <ul style="list-style-type: none"> • “How Dangerous are Hackers: Cyber Warfare Documentary 2019.” <i>YouTube</i>, uploaded by Breed Skool, 10 Mar 2019, https://www.youtube.com/watch?v=NY3SpIQHD2I&feature=youtu.be • Note catcher (for an example note catcher, see http://www.cte.iup.edu/p/reinduction/HO_Video%20Note%20Taking%20Worksheet.pdf) | <p>Cybersecurity - Impacts, Laws and Ethics: (3-day lesson) In this lesson students learn about the impacts of cybersecurity and how even when a cybersecurity practice is legal, it may not be ethical.</p> <ul style="list-style-type: none"> • Students watch How Dangerous are Hackers and take notes on the note catcher. There is then a class discussion about the law, ethics and impacts addressed in the video. <p>Assessment: <i>Students create a board game to review everything they learned about the impacts of law and ethics in cybersecurity in a fun and interesting way.</i> Board Game Requirements:</p> <ul style="list-style-type: none"> • <i>Using a file folder, colored pencils, crayons, or markers, create a board game. Put the name of your game on the tab of the folder and decorate the inside so that it is a game board.</i> • <i>Make your game board neat, colorful, interesting and creative.</i> • <i>Create at least 25 questions and answers for your game that relate to the material covered in the Law & Ethics Unit. Be sure to include key vocabulary from the unit.</i> |

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| <p>impact of cybersecurity ideas and events on the evolution of the field. EK: 8.1.1b,c,g</p> <p>8.2.1 LO: Students will describe how political ideologies, economic structures, social organizations, and cultural perceptions impact cybersecurity. EK: 8.2.1f,g</p> <p>8.2.2 LO: Students will analyze how privacy concerns vary greatly in regards to societies, age, and socio-economic status. EK: 8.2.2a,c</p> <p>8.3.3 LO: Students will describe how economics shape the decisions of consumers. EK: 8.3.3b,c</p> | | <p><i>The questions must somehow be incorporated into the playing of the game.</i></p> <ul style="list-style-type: none">• <i>Relate the format and purpose of your game to one of the themes you learned about in the Law & Ethics Unit.</i>• <i>Write directions for your game that would make it perfectly clear how to play the game. The directions need to be typed and glued on the back cover of the file folder.</i>• <i>Make sure you have different difficulty levels in your game in order to help all students review and learn the content from the unit. Be sure to think about 2nd language learners in the class and how you can help them understand the content (examples: translate questions to another language, include images, etc.).</i> |
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