LEGENDS OF LEARNING

Lesson Topic: Cybersecurity - Digital Forensics

Objective: Students will be able to: 1. Understand the world of forensic science 2. Learn About R.A.T. and its capabilities 3. Learn about other malicious software/malware 4. Identify the skills needed for jobs in this field

Time Required: 75 minutes

Materials Needed: ● Chromebook or Laptop ● Worksheet (Attached) ● Pencil and paper/notebook

Teacher Preparation: ● Assign a Legends of Learning Instructional Quick Play playlist for the day(s) you will be teaching the lesson.   ○ Instructional - Middle School - Other Science Topics - Cybersecurity ● Print copies of the worksheet below ● View Cybersecurity 101 before lesson to become familiar with cybersecurity https://mpt.pbslearningmedia.org/resource/nvcy-sci-cyber101/cybersecurity-101/

Engage (15 minutes):
1. When students come in, have the following posted on the board, "There are 3 statements on the board about me, 2 of them are false, and 1 of them is the truth. Can you find the true statement?"
    a. Write down 3 statements making one true and the others false. Make it difficult by choosing things that could be true.
2. Give students 5 minutes to choose and then take answers. Make sure they tell you why they chose the statement.
3. Once they have guessed correctly or by process of elimination tell students that "We are going to play Two Lies and a truth. I will let each student create two lies about themselves, and one truth. Each person I choose will say all three statements and it is our job to determine which is the true statement."
    a. Optional: Give an incentive to those who can fool the class with their statements so students take it seriously and do not make it easy.
4. Give students 2-3 minutes to make them and let students stand in front of the class and play the game.

Explore (20 minutes): 1. Let students know that they will be looking at the world of Forensic Science and Cyber security. They will need to use problem solving skills and deduction in order to succeed in this field.

2. Have your students <u>sign in to Legends of Learning</u>. Instruct students to complete the Instructional playlist.
3. Tell students to complete the Cyber Security worksheet as they complete the game. Students can work in pairs depending on technology availability.

Explain (10 minutes):
1. When students finish with the game or time expires, ask students about the game. Ask questions such as:
   a. "What skills did you need for this game?"
      i. Sample response- Questioning skills, critical thinking, skills in following clues, etc.
   b. "How would you define Cybersecurity?"
      i. Sample response- relate answers to the field and the word. Securing or protecting information online from threats of viruses and hackers.
   c. "How would you define Forensic Science?"
      i. Sample response- relate answers to words. Study of investigation of people, using clues to discover and obtain information.
   d. "What skills/subject will I learn in school to help me in this field?"
      i. Sample response Critical thinking, skills in math, science and reading are acceptable.
   e. "What is a RAT?"
      i. Answer: Remote Access Trojan
   f. "What is malware?"
      i. "malicious software" - computer programs designed to infiltrate and damage computers without the users consent

Elaborate (20 minutes):
1. Have your students <u>sign back in to Legends of Learning</u>. Instruct students to complete the game "Cyborary Quest" in the Instructional playlist.
2. Tell students to continue working on the Cyber Security worksheet as they complete the game. Students can work in pairs depending on technology availability.

Evaluate (10 minutes):
1. Students will finish the worksheet for their evaluation and turn it in.

Additional Lesson Strategies:
- To use Legends for additional instruction, create a <u>custom playlist</u> with an <u>instructional game</u> and pre and post <u>assessment</u>.
- To use Legends for a quick formative assessment, create a 5-question <u>assessment</u> in a <u>playlist</u>.
- To use Legends for a student-directed experience, create a <u>targeted freeplay</u> playlist.
- Encourage students to play on their own at home in <u>Legends of Learning: Awakening</u> for a student-driven experience including avatars, battling, and quests all centered around topics they are covering in class.

Name_____   Date_____

Forensic Science- Cyber Security

Define The following terms

Cybersecurity-

Forensic Science-

R.A.T-

Malware-

What were the challenges that you saw in finding out where the RAT came from in "Digital Forensic Files" : The RAT?

What were the challenges that you saw in the Cyborary Quest?

Fill out the KWL chart with 3 points in each category. List 3 things you learned, 3 things you learned and 3 things you are still wondering about Cybersecurity.

I Know	I Learned	I Wonder

Name_____   Date_____

Forensic Science- Cyber Security
ANSWER KEY

Define The following terms

Cybersecurity - the state of being protected against the criminal or unauthorized use of electronic data, or the measures taken to achieve this or similar response

Forensic Science - relating to or denoting the application of scientific methods and techniques to the investigation of crime.

R.A.T- Remote Access Trojan

Malware- "malicious software" - computer programs designed to infiltrate and damage computers without the users consent

What were the challenges that you saw in finding out where the RAT came from in "Digital Forensic Files" : The RAT?
Sample Answers- The investigation, looking for leads and clues, Talking to the witnesses etc

What were the challenges that you saw in the Cyborary Quest?
- Opinion based answer