Activity 12-1: “Malware Museum” Creation

Big Idea

The overarching concept of this activity is to deepen understanding of cybersecurity by exploring various types of malware. It aims to foster critical thinking about digital security, the mechanisms of malware, and their real-world impacts.

Materials

Computer/Tablet with internet
Creative Supplies: poster board, markers, craft materials for physical models
Presentation Software (PPT, Slides, etc.)

Vocabulary

Malware
Virus
Trojan Horse
Ransomware
Spyware
Adware

Background

In pre-taught lessons, students gained foundational knowledge in computer security, including the use of firewalls, antivirus software, and safe browsing practices. They were introduced to the history of cybersecurity, focusing on significant malware attacks and their consequences. This included a preliminary understanding of various types of malware, such as viruses, trojans, ransomware, spyware, and adware, along with their functionalities and methods of propagation. Additionally, the lesson covered essential strategies for preventing malware infections and effective response measures in case of an infection.

Activity Directions

1. **Step 1: Introduction to the Activity**

a. Begin by explaining the objective of the activity: to understand various types of malware.
b. Discuss the importance of cybersecurity and the impact of malware on individuals and organizations.

2. **Step 2: Research Phase**
   a. Assign each participant or group a specific type of malware to research (e.g., virus, trojan horse, ransomware, spyware, adware).
   b. Provide research tools and set a timeframe for the research phase.
   c. Encourage participants to look for information about how their assigned malware works, its history, and real-world impacts.

3. **Step 3: Preparation of the Exhibit**
   a. Based on their research, participants will prepare their part of the "Malware Museum."
   b. They can choose to create posters, models, or digital presentations.
   c. Provide creative supplies and digital tools for preparing the exhibits.

4. **Step 4: Creating the Exhibits**
   a. Participants work on creating their exhibits, ensuring they clearly explain the mechanism and impact of their assigned malware.
   b. Encourage creativity in how they present the information, making it engaging and educational.

5. **Step 5: Setting Up the Museum**
   a. Once the exhibits are ready, set up a space where all projects can be displayed.
   b. Arrange the exhibits in an order that makes sense (e.g., chronologically by the date the malware first appeared).

6. **Step 6: Museum Tour**
   a. Have participants take turns presenting their malware exhibit to the rest of the group.
   b. Encourage questions and discussions during the presentations to foster a deeper understanding.

7. **Step 7: Reflection and Discussion**
   a. After the presentations, hold a group discussion.
   b. Reflect on what was learned about malware, its impacts, and the importance of cybersecurity.
   c. Discuss the various prevention and response strategies explored in the exhibits.

8. **Step 8: Cleanup and Feedback**
    a. Once the activity is complete, clean up the exhibit space.
    b. Gather feedback from participants on what they learned and how the activity could be improved in the future.

Malware Museum Project Grading Rubric

Criteria	Excellent (4)	Good (3)	Needs Improvement (2)	Poor (1)
Accuracy of Information	Information is completely accurate and well-researched.	Information is mostly accurate with minor inaccuracies.	Some accurate information but with notable errors or omissions.	Many inaccuracies or misleading information.
Creativity and Presentation	Highly creative, visually appealing, and attention-grabbing.	Creative and neat with clear visuals.	Somewhat creative but lacks visual appeal.	Little creativity and poor visual quality.
Depth of Research	Extensive research covering all aspects of the topic.	Good research but missing some depth or detail.	Basic research, lacking depth in some areas.	Minimal research and lack of detailed understanding.
Clarity and Organization	Exceptionally clear, logical, and well-organized.	Clear and mostly well-organized.	Somewhat clear but lacks organization in places.	Unclear, disorganized, and difficult to follow.
Engagement and Discussion	Highly engaging, stimulating in-depth discussion.	Engaging with some discussion.	Somewhat engaging, but limited discussion.	Not engaging, with no real discussion.