**Lesson Companion: The Art of the Hack** *How Hackers Break In — and What We Can Learn From Them* 📝 Use this guide to take notes, answer key questions, and reflect as you follow today’s presentation and lab.

### **🎯 What I Will Learn Today**

* The six stages of a real-world cyberattack
* How hackers think and what tools they use
* The difference between ethical and malicious hacking
* How to analyze websites for common security weaknesses
* Why it’s important to defend systems before they are attacked

### **📓 Notes by Topic**

#### **🧠 What Is Hacking?**

Hacking originally meant:
 🖊 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Today, it often refers to:
 🖊 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Types of hackers:

| **Type** | **Description** |
| --- | --- |
| Whit Hat |  |
| Black Hat |  |
| Gray Hat |  |

#### **🔎 The Hacker’s Mindset**

Hackers don’t try to break what’s strong — they look for what’s:
 🖊 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

They rely on:

* Logic and observation
* Weak security or human mistakes
* Tools that are easy to find online

#### **🔗 The 6-Stage Attack Chain**

| **Stage** | **What Happens** |
| --- | --- |
| 1. Reconnaissance |  |
| 2. Scanning |  |
| 3. Access |  |
| 4. Payload |  |
| 5. Escalation |  |
| 6. Exfiltration |  |

#### **🧰 Hacker Toolkit**

Tools often used by attackers:

* Port scanners (e.g. Nmap)
* Password crackers (e.g. Hydra)
* Keyloggers
* Malware generators
* Social engineering kits

🖊 Write one tool you learned about and what it does:

#### **🔐 Real-World Examples**

Case 1: A student hacked the school gradebook
 🖊 What was the weak point? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Case 2: Ransomware attack on a hospital
 🖊 How did it start? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 🖊 What was the damage? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### **🔍 Practice: Spot the Flaws**

What are some common flaws hackers look for?
 ☐ Weak passwords
 ☐ Public data online
 ☐ Open ports
 ☐ Users who click links without checking

🖊 Add one more weakness you learned about:

### **🧪 Lab Activity: “Find the Weak Link”**

**Goal:** Use browser tools to inspect a challenge website and simulate a hacker’s early steps.

**During the lab, I will:** ☐ Open Developer Tools (Inspect Element)
 ☐ View HTML and JavaScript
 ☐ Look for hidden fields, weak code, or exposed credentials
 ☐ Try modifying inputs or checking script logic
 ☐ Analyze how a real hacker might exploit this

### **💬 Lab Reflection**

🖊 What was the most interesting thing you found?

🖊 What made the site vulnerable?

🖊 How could a developer fix it?

### **🛡️ Cyber Ethics**

**What makes a hacker ethical?**

* Always has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Works to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Never uses skills to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

✅ Cyber Rangers use knowledge to protect — not to harm.

### **💡 Final Reflection**

1. What did you learn about how real hackers work?
 🖊 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How does knowing this help you be a better defender?
 🖊 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What will you look out for in your own digital life?
 🖊 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_