

Malware: The Rat

OVERVIEW

Main Goal: The main objective of this activity is to teach students how to recognize and protect against Remote Access Trojan Malware..

Target Grade Level: 5th Grade

Target Subject: Cybersecurity

Target Unit: Networks & The Internet

Estimated Duration: 3 Days (30-45 minutes each day)

Materials:

- Computer with Internet Access
- Google Docs or any writing software
- Post-Its
- Loose-leaf Paper

Background Knowledge: Students need to know there are security threats to software and personal information online and that there are ways to help protect this information.

Activity Overview: With the increase in available technology and connectivity, cyber hackers are looking for vulnerable software to gather personal and secret information. Malware issues are on the rise and one specific type, the Remote Administration Trojan (RAT), proves to be detrimental. In this lesson, students will learn to identify RAT Malware, how RAT Malware is spread, and ways to avoid becoming a victim.

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PRE-TEST

- What is a RAT?
- How is a RAT spread?
- What are ways to protect yourself from a RAT attack?

OBJECTIVES

Objective #1 - Define Remote Administration Trojans.

Ask students about computer malware. Have students discuss what makes a RAT so devastating.

Objective #2 - Discuss Ways to Protect Against RATS.

Ask the class about ways they can protect themselves against RATS.

Objective #3 - Proficiently Communicate in a Short Essay.

Have students communicate what is a RAT, how RAT Malware is spread, and ways to avoid becoming a victim.

CATCH/HOOK

Imagine all of your personal and secret information stolen from you right from under your nose. All you did was open a link in an email that looked legitimate. Unfortunately, you opened a RAT (Remote Administration Trojan) and cyber hackers now have a backdoor into your personal and professional life. Today, we will be learning about how to prevent this security breach to keep you safe online.

ACTIVITY INSTRUCTIONS DAY 1

Cyber Security KWL (10 Minutes)

- As a class, discuss cyber security and malware using a KWL chart.
- Specifically, ask about RATs to learn about previous knowledge.
- Discuss how cyber security is important and that there are many ways a cyber hacker can access your personal and sensitive information.

RAT Introduction (5 Minutes)

- Introduce the RAT and explain that this will be the focus of our cyber security discussion over the next few days.
- Watch this short clip from CISCO introducing the RAT.
 - <https://www.youtube.com/watch?v=d9GWrNh8VWI>
 - Students will have a short discussion about the video in small groups.

Legends of Learning (20 Minutes)

- Students will play “Digital Forensic Files - The RAT” on Legends of Learning
 - <https://app.legendsoflearning.com/teachers/games/learning-objective/4658>
 - The purpose of this activity is to increase buy-in and provide a fun way for students to learn the basics about RATS and cyber security.
 - When students have finished, they need to write down their top A-HA moment on a post-it and place it on the whiteboard.

ACTIVITY INSTRUCTIONS DAY 2

RATS Outline (20 Minutes)

- Using the following link and what they have learned from Legends of Learning, students will help the teacher put together ideas for their short informational essay.
 - <https://resources.infosecinstitute.com/topic/malware-spotlight-what-is-a-remote-access-trojan-rat/>
 - This website could be front-loaded earlier in the day during an independent reading time so students will be familiar with the content.
- The teacher will write three columns on the board titled:
 - What is a RAT?
 - How is a RAT spread?
 - How can we protect from a RAT?
- Have students discuss in small groups before giving answers to the whole class. Once the students have had sufficient time to discuss, come together and write their ideas on the board. **Note: all ideas must come from one of the sources provided.**

RATS Rough Draft (25 Minutes)

- Give students instructions for a 3 paragraph essay.
- Students may use their computer or loose-leaf paper to write their rough draft.
- Each paragraph should be split into these three topics:
 - What is a RAT?
 - How is a RAT spread?
 - How can we protect from a RAT?
- Students do not need to finish their rough draft at this time, however, it is encouraged.

ACTIVITY INSTRUCTIONS DAY 2

RATS Rough Draft (20 Minutes)

- Students may finish their rough draft if they have not done it for homework or worked on it at a later time.
- Once their rough draft is complete, they may begin their final draft.

Assessment (25 Minutes or when complete)

- Students will use MLA format to write a 3 paragraph essay to answer the following questions:
 - What is a RAT?
 - How is a RAT spread?
 - How can we protect ourselves from a RAT attack?
- Turn in when completed.

Legends of Learning

- When the students finish, they may play the Legends of Learning “Digital Forensic Files - The RAT” game again.

REVIEW

The informational essays will be reviewed individually and graded when students complete their final draft. Once all are graded, we will have a discussion and possible student presentation of their essays if time permits.

(KNOWLEDGE) ASSESSMENT

Objective #1 - Define Remote Administration Trojans.

Objective #2 - Discuss Ways to Protect Against RATS.

Objective #3 - Proficiently Communicate in a Short Essay.

All three objectives will be assessed during classroom discussions and the final informational essay.

POST-TEST

- What is a RAT?
- How is a RAT spread?
- How can we protect ourselves from a RAT attack?

STANDARDS

COMPUTER SCIENCE

Networks & The Internet

- **5.NI.C.01** Discuss real-world cybersecurity problems and identify and implement appropriate strategies for how personal information can be protected.

Impacts of Computing

- **5.IC.SI.02** Practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior.

CROSS-DISCIPLINARY

Common Core Language Arts Standard

- **W.5.2.** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- **L.5.1.** Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- **L.5.2.** Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

EXTENSIONS

Guest Speaker

- Cody Jerry from Search Engines MD
 - Talk about Cyber Security and how information can be manipulated online.