Introduction

About Carnegie Cadets: The MySecureCyberspace Game

Carnegie Cadets: The MySecureCyberspace Game is an interactive Flash game designed for fourth and fifth graders that teaches Internet safety and computer security in a safe, fun setting. Created by Carnegie Mellon's Information Networking Institute and Carnegie Mellon CyLab, the game is part of the university's MySecureCyberspace cyberawareness outreach project and is provided as a free download from www.carnegiecyberacademy.com.

Carnegie Mellon created MySecureCyberspace as a response to the National Strategy to Secure Cyberspace, which calls for every American to help create a safe Internet by securing his or her own corner of cyberspace. The MySecureCyberspace portal, Carnegie Cyber Academy website, and MySecureCyberspace game give everyday citizens the tools and knowledge they need to do this.

About the Teacher's Companion

This Teacher's Companion outlines lessons that a teacher may cover in an upper elementary classroom. It incorporates content and activities from Carnegie Cadets: The MySecureCyberspace Game, as well as the related websites www.carnegiecyberacademy.com and www.mysecurecyberspace.com.

These lesson starters are suggestions for sequencing, tools, and activities that introduce and reinforce the terms, definitions, and subject areas that make up cyber security. Each lesson contains learning objectives and learning outcomes, suggestions for tools and activities, and worksheets for students.

NETS Grid

This grid identifies how the lessons match the National Educational Technology Standards (NETS). For a detailed list of the standards and their subtopics (a through d), go to: http://www.iste.org

Topics		I. Creativity and Innovation	II. Communication and collaboration	III. Research and Information Fluency	IV. Critical Thinking, Problem Solving and Decision Making	V. Digital Citizenship	VI. Technology Operations and Concepts
Lesson 1	The Internet	✓ c				✓ all subtopics	✓ a
Lesson 2	Email	✓ c	✓ a			✓ a & b	✓ all subtopics
Lesson 3	Cyber Threats	✓ c				✓ a	✓ a & b
Lesson 4	Cyber Crime (1)	✓ c			✓ a & c	✓ a & b	✓ b
Lesson 5	Cyber Crime (2)	✓ c				✓ a	✓ a
Lesson 6	Chat rooms and Instant messaging	✓ c	✓ all subtopics			✓ a & b	✓ b
Lesson 7	Netiquette	✓ c	✓ all subtopics			✓ all subtopics	
Lesson 8	Cyberbullying	✓ c			✓ a	✓ a & b	
Lesson 9	Online Data	✓ c				✓ a & b	✓ a & d
Lesson 10	Website threats	✓ c				✓ a	✓ b & d
Lesson 11	Search Engines and Research Tips	✓ c		✓ a & b		✓ a	✓ a & d
Lesson 12	Copyright and Plagiarism	✓ c		✓ a & b		✓ a	✓ a & d
Lesson 13	Cell phones	✓ c			✓ a	✓ all subtopics	
Lesson 14	Online Reputation	✓ c			✓ c	✓ all subtopics	✓ a & d

Game Tips for Teachers

Navigating the Game

Objects that the player can interact with will have an orange highlight when the cursor is held over them and the cursor will change shape to indicate the available interaction. Clicking on a door or on an orange navigation arrow will take the player to another location. Clicking on a character will start a dialogue with them.

By choosing different responses in the dialogue box, the player can interact with characters and make decisions.

Talking to characters can also unlock extra ReQuests and rare items.

An orange exclamation mark means that you can interact with an object.

Some interactive objects have fun animations and some open pages of the Carnegie Cyber Academy Website.

Using the PAL

The PAL is the player's game menu and contains all the information about the progress in the game, such as credits and badges earned and progress in assigned tasks. It also contains maps of all the areas of the game, the player's inventory, biographies of all the characters and an encyclopedia of cyber security terms.

Players can access the PAL at any time except when they are talking to a character or are in a mission.

To access the PAL, click on the orange arrow on the left side of the screen.
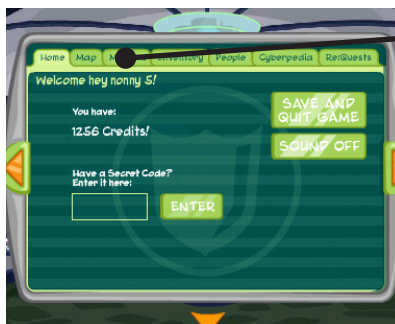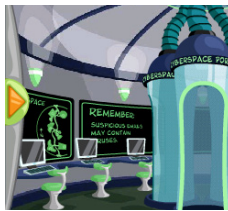
Click on the tabs along the top of the screen to access the different pages of the PAL.

The PAL's map indicates where you are located with a star.

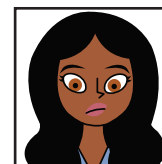## Meet the Characters: Academy Faculty and Cadets
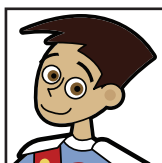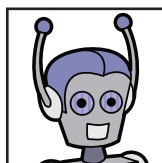
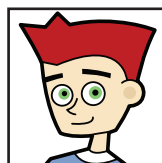| Commander Omni	Captain Wits	Officer Ward	Doctor Keen	Trey	Maya	Betty

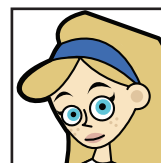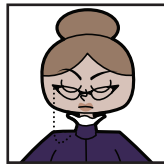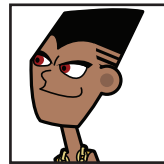| Carlo	Scout	Erika	Alan	Alexi	Dana
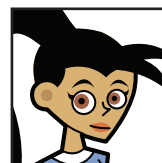
Meet the Characters: Cyber Criminals and Villains

Elvirus

Ms. Information

M.C. Spammer

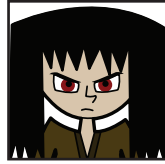**The Dis Guys**

The ID Bandit
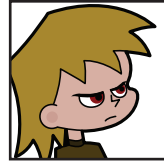
The Master Hacker

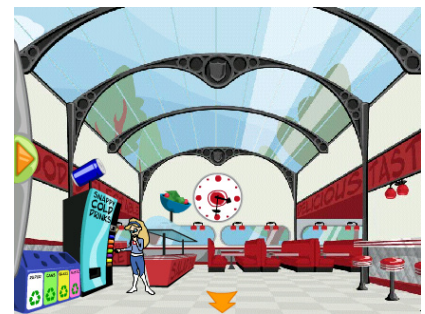**The Phisherman**

Captain Jack Plunder

Jax, Cyber Bully

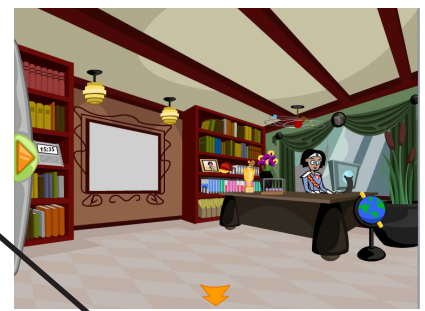**Sparky, Script Kiddie**

Locations: Academy Ground Level

The CyberPort is how you enter Cyberspace, but you will need a Cyberspace Pass from Commander Omni first. Talk to her in her office to get one.

CyberSpace PASS

CyberPort

Cafeteria

Atrium

Omni's Office

Each player has a dorm room that he or she can decorate with items bought from the Academy Store.

Locations: Academy 2nd Floor

Academy Store

Players must play the missions in Cyberspace to earn credits to spend at the Academy Store.
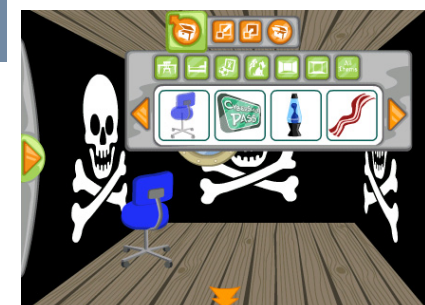
Player's Dorm Room

About Cyberspace

At the Academy, Cyberspace is the world of the Internet, and each building in Cyberspace focuses on a specific Internet-related activity. The Message Center contains missions about email, the Databank has website-related missions, and the Clubhouse has missions about online communications. Also in Cyberspace, there are the information resource centers, Diagnostics and the Detention Center, where the player can go to learn about computer maintenance and cyber crimes.

Every building in Cyberspace has a supervisor who acts as a teacher for each subject and briefs the player before the start of a mission.
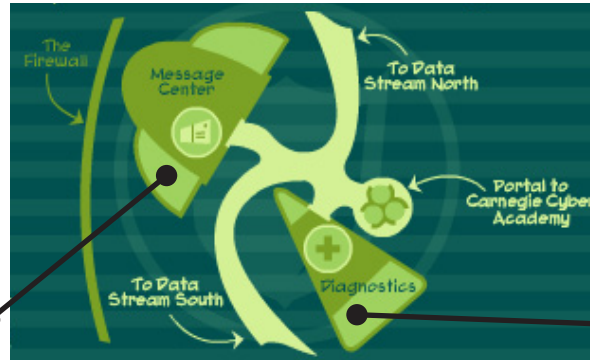
Locations: Cyberspace - Data Stream Central

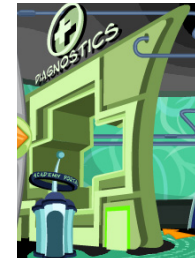The Message Center is where the Email Missions are.
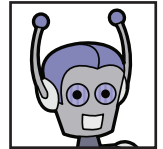
**Trey,
Message Center
Supervisor**

Message Center

At Diagnostics, players can learn about Computer Maintenance and Protecting your Data.

**Dr. Keen,
Diagnostics Lab
Technician**

Diagnostics

**Scout,
Lab Assistant**

Locations: Cyberspace - Data Stream North

The Clubhouse is where the Communications Missions are.

**Betty,
Clubhouse
Supervisor**
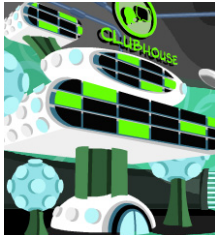
Clubhouse
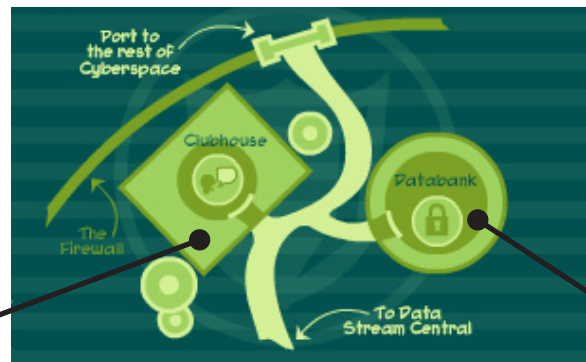
The Databank is where the Website Missions are.

**Maya,
Databank
Supervisor**

Databank

Locations: Cyberspace - Data Stream South

The CyberMall is under construction for future missions about online shopping.

CyberMall

At the Detention Center, players can learn about Cyber Crimes and Cyber Criminals.

**Officer Ward,
Detention
Center Security
Officer**

Detention Center

About the Training Missions

In Carnegie Cadets: The MySecureCyberspace Game, players join the Cyber Defense training program at the Carnegie Cyber Academy, where training missions teach different Internet topics and cover fundamental cyber safety skills. Players earn Gold Badges for completing missions and unlock new features with each success.
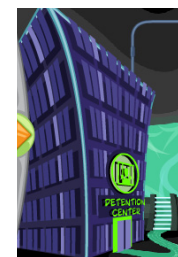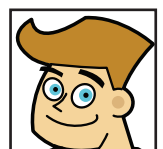
For each training mission, Academy supervisors arm the player with information and advice, and later award the player a Gold Badge for each mission success. Upon completing missions, players unlock ReQuests. ReQuests are bonus tasks, which could involve talking to certain characters or fetching items in order to receive rare items and extra Academy Credits. The points earned can be spent on items for decorating their dorm rooms at the Academy.

Locating the Missions in Cyberspace

Message Center

Email Mission Level 1

Cadets learn about spam and how to deal with it.
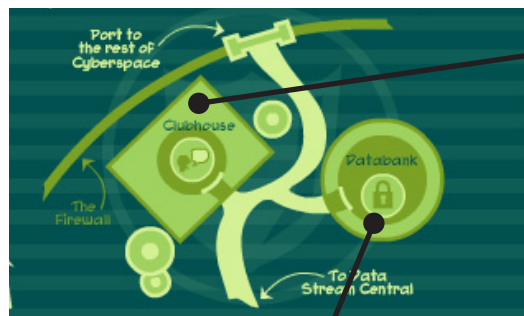
Clubhouse

Communications Missions Level 1

Cadets learn about protecting their personal information.

Databank
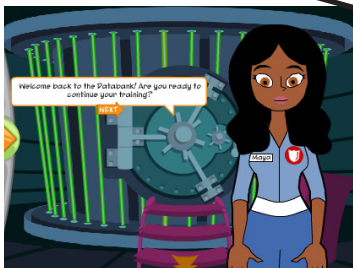
Website Mission Level 1

Cadets learn how to identify and avoid risky web content.

Level 2

Cadets learn how to deal with cyber bullies.

Questions?

We hope you enjoy the game and the Teacher's Companion. Please direct any comments and suggestions to info@CarnegieCyberAcademy.com.

Appendix

After the 13 lesson plans, there are print-friendly templates for classroom activities:

- "Make a Mask" for Lesson 6
- "Flip the Card" for Lesson 12
- "Threat or Safe" for Lesson 12

Overview of Available Activities

Many of the lessons in this companion feature Carnegie Cadets: The MySecureCyberspace Game, but we also provide additional materials on the Carnegie Cyber Academy website that can be used to supplement the lessons: www.carnegiecyberacademy.com.

Lesson	Activities in the Lesson	Additional Materials and Activities
Lesson 1: The Internet	**Offline:** • Complete the Network Activity (described in lesson) **Using Carnegie Cadets:** • Attend the Academy orientation • Obtain a Cyberspace Pass from Commander Omni • Use the Cyberpedia in the PAL	• Learn about the different parts of a computer on the How Computers Work faculty page *(http://www.carnegiecyberacademy.com/facultyPages/computer/computers.html)* • Learn about how information packets travel through the Internet in the Packet the Rabbit game *(http://www.carnegiecyberacademy.com/funStuff/easter/packets.html)*
Lesson 2: Email	**Offline:** • Complete the Email Notecard Activity (described in lesson) **Using Carnegie Cadets:** • Use the Cyberpedia in the PAL	
Lesson 3: Cyber Threats	**Using Carnegie Cadets:** • Learn about Malware in the Hall of Quarantine at Diagnostics • Complete the Email Level 1 training mission about recognizing and deleting spam **Offline:** • Read Hint Sheet 01 on Identifying Spam (printout in the Appendix)	• Learn about Malware in the Dance Dance Malware game *(http://www.carnegiecyberacademy.com/funStuff/danceDanceMalware/ddm.html)* • Learn about how to protect your devices from malware on the Computer and Device Defense faculty page *(http://www.carnegiecyberacademy.com/facultyPages/deviceDefense.html)*
Lesson 4: Cyber Crime (part 1)	**Using Carnegie Cadets:** • Complete the ReQuest: Alan: The Spam Attack • Take the Detention Center Tour, talk to the detainees on the Cell Block and Sparky in Cyber Forensics • Read the character bios in the PAL	• Learn about how cyber criminals operate and how they get caught on the Cyber Crimes and Criminals faculty page *(http://www.carnegiecyberacademy.com/facultyPages/cyberCrime.html)* • Help Dana complete her report on the cyber villains in the Dana's CyberReport game *(http://www.carnegiecyberacademy.com/funStuff/cybervillainsReport/cybervillainsReport.html)*
Lesson 5: Cyber Crime (part 2)	**Offline:** • Read Hint Sheet 02 on Protecting your Personal Information (printout in the Appendix) **Using Carnegie Cadets:** • Complete the Detention Center Tour, talk to Officer Ward and view the Wall of Shame • Read the character bios in the PAL	• Learn about protecting your Personal Information from cyber criminals on the Protecting Your Information faculty page *(http://www.carnegiecyberacademy.com/facultyPages/communication/personalInfo.html)*
Lesson 6: Chat Rooms & Instant Messaging	**Offline:** • Complete the Alias Mask Activity (described in lesson, printout in the Appendix) **Using Carnegie Cadets:** • Complete the Communications Level 1 training mission about Personal Information	• Learn more about communicating safely online on the Communicating Safely faculty page *(http://www.carnegiecyberacademy.com/facultyPages/communication/safely.html)* • Learn how to protect yourself when playing online games in the Online Gamine Safety Challenge *(http://www.carnegiecyberacademy.com/funStuff/onlineGaming/onlineGaming.html)*

Lesson	Activities in the Lesson	Additional Materials and Activities
Lesson 7: Netiquette	**Using Carnegie Cadets:** • Complete the ReQuest: Dana: Personal Info trouble **Offline:** • Read Hint Sheet 06 on Netiquette Tips (printout in the Appendix) **Using the Academy website:** • Complete Betty's Netiquette quiz *(http://www.carnegiecyberacademy.com/funStuff/netiquette/netiquette.html)*	• Learn more guidelines for good netiquette on the Netiquette faculty page *(http://www.carnegiecyberacademy.com/facultyPages/communication/netiquette.html)*
Lesson 8: Cyberbullying	**Offline:** • Read Hint Sheets 04 and 05 on Dealing with and Reporting Cyberbullying **Using Carnegie Cadets:** • Complete the Communications Level 2 training mission about Cyberbullying • Complete the ReQuest: Carlo: Cyberbullying bind	• Learn more about Cyberbullying on the Cyberbullying faculty page *(http://www.carnegiecyberacademy.com/facultyPages/communication/bullying.html)* • Test your Cyberbullying knowledge with the Cyberbullying Quiz in Scout & Stuart's animated short*(http://www.carnegiecyberacademy.com/funStuff/stuartScout/stuartScout_eps1.html)* • Help Carlo put out the raging flame war in the Fight the Flame War game *(http://www.carnegiecyberacademy.com/funStuff/flamewar/fightTheFlameWar.html)*
Lesson 9: Online Data	**Using a web browser:** • Complete the Web Research Activity (described in lesson	• Learn more about evaluating site credibility on the Academy Library page *(http://www.carnegiecyberacademy.com/library.html)*
Lesson 10: Website Dangers	**Using Carnegie Cadets:** • Complete the Websites Level 1 training mission about Website dangers • Complete the ReQuest: Erika: Popup problems	• Learn about how to protect your devices from malware on the Computer and Device Defense faculty page *(http://www.carnegiecyberacademy.com/facultyPages/deviceDefense.html)*
Lesson 11: Search Engines & Research Tips	**Using Carnegie Cadets:** • Complete the ReQuest: Erika: Popup problems **Offline:** • Read Hint Sheet 03 on Recognizing and Avoiding Website Dangers	• Learn more about using web resources and effective web research on the Academy Library page *(http://www.carnegiecyberacademy.com/library.html)*
Lesson 12: Copyright & Plagiarism	**Offline:** • Complete the Flip the Card Activity (described in lesson, printouts in the Appendix) • Complete the Threat or Safe Activity (described in lesson, printouts in the Appendix)	• Learn more about avoiding Plagiarism on the Using Web Resources page *(http://www.carnegiecyberacademy.com/libraryGuides/using.html)*
Lesson 13: Cell Phones		• Learn more about protecting your mobile devices on the Defending Mobile Devices faculty page *(http://www.carnegiecyberacademy.com/facultyPages/computer/mobile.html)*
Lesson 14: Online Reputation	**Offline:** • Read Hint Sheet 05 and 07 on Reporting Cyberbullying and Growing a Positive Online Reputation **Using the Academy website:** • Complete the Growing an Online Reputation game *(http://www.carnegiecyberacademy.com/funStuff/onlineReputation/onlineRep.html)*	• Learn more about managing your Online Reputation on the Managing your Online Identity faculty page *(http://www.carnegiecyberacademy.com/facultyPages/communication/identity.html)*