**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](http://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](http://www.carnegiecyberacademy.com) and [www.mysecurecyberspace.com](http://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](http://www.iste.org)

<table>
<thead>
<tr>
<th>Topics</th>
<th>I. Creativity and Innovation</th>
<th>II. Communication and collaboration</th>
<th>III. Research and Information Fluency</th>
<th>IV. Critical Thinking, Problem Solving and Decision Making</th>
<th>V. Digital Citizenship</th>
<th>VI. Technology Operations and Concepts</th>
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</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td>The Internet</td>
<td>✓</td>
<td></td>
<td>✓ all subtopics</td>
<td>✓ a</td>
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<td>Email</td>
<td>✓</td>
<td>✓ a</td>
<td>✓ a &amp; b</td>
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<td>✓</td>
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<td>✓ a</td>
<td>✓ a &amp; b</td>
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<td>✓</td>
<td>✓ a &amp; c</td>
<td>✓ a &amp; b</td>
<td>✓ b</td>
<td></td>
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<tr>
<td>Lesson 5</td>
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<td>✓ a</td>
<td>✓ a</td>
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<td>Chat rooms and Instant messaging</td>
<td>✓</td>
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<td>✓ all subtopics</td>
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<td>✓ a</td>
<td>✓ a &amp; b</td>
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<td></td>
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<td>✓ a &amp; b</td>
<td>✓ a &amp; d</td>
<td></td>
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<tr>
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<td></td>
<td>✓ a</td>
<td>✓ b &amp; d</td>
<td></td>
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<td>Lesson 11</td>
<td>Search Engines and Research Tips</td>
<td>✓</td>
<td>✓ a &amp; b</td>
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<td>✓ a &amp; d</td>
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<td>✓ a</td>
<td>✓ a &amp; d</td>
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<td>Lesson 13</td>
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<td>✓ a</td>
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<tr>
<td>Lesson 14</td>
<td>Online Reputation</td>
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<td></td>
<td>✓ c</td>
<td>✓ all subtopics</td>
<td>✓ a &amp; d</td>
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</tbody>
</table>
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.

Locations: Academy 2nd Floor

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

Players must play the missions in Cyberspace to earn credits to spend at the Academy Store.
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.

Locations: Cyberspace - Data Stream North

- The Clubhouse is where the Communications Missions are.

Locations: Cyberspace - Data Stream South

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

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

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

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](http://www.carnegiecyberacademy.com).

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Activities in the Lesson</th>
<th>Additional Materials and Activities</th>
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<tbody>
<tr>
<td><strong>Lesson 1: The Internet</strong>&lt;br&gt;Offline:</td>
<td>• Complete the Network Activity (described in lesson)&lt;br&gt;Using Carnegie Cadets:&lt;br&gt;• Attend the Academy orientation&lt;br&gt;• Obtain a Cyberspace Pass from Commander Omni&lt;br&gt;• Use the Cyberpedia in the PAL</td>
<td>• Learn about the different parts of a computer on the How Computers Work faculty page (<a href="http://www.carnegiecyberacademy.com/facultyPages/computer/computers.html">http://www.carnegiecyberacademy.com/facultyPages/computer/computers.html</a>)&lt;br&gt;• Learn about how information packets travel through the Internet in the Packet the Rabbit game (<a href="http://www.carnegiecyberacademy.com/funStuff/easter/packets.html">http://www.carnegiecyberacademy.com/funStuff/easter/packets.html</a>)</td>
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<tr>
<td><strong>Lesson 2: Email</strong>&lt;br&gt;Offline:</td>
<td>• Complete the Email Notecard Activity (described in lesson)&lt;br&gt;Using Carnegie Cadets:&lt;br&gt;• Use the Cyberpedia in the PAL</td>
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</tr>
<tr>
<td><strong>Lesson 3: Cyber Threats</strong>&lt;br&gt;Using Carnegie Cadets:&lt;br&gt;• Learn about Malware in the Hall of Quarantine at Diagnostics&lt;br&gt;• Complete the Email Level 1 training mission about recognizing and deleting spam&lt;br&gt;Offline:</td>
<td>• Read Hint Sheet 01 on Identifying Spam (printout in the Appendix)</td>
<td>• Learn about Malware in the Dance Dance Malware game (<a href="http://www.carnegiecyberacademy.com/funStuff/danceDanceMalware/ddm.html">http://www.carnegiecyberacademy.com/funStuff/danceDanceMalware/ddm.html</a>)&lt;br&gt;• Learn about how to protect your devices from malware on the Computer and Device Defense faculty page (<a href="http://www.carnegiecyberacademy.com/facultyPages/deviceDefense.html">http://www.carnegiecyberacademy.com/facultyPages/deviceDefense.html</a>)</td>
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<td><strong>Lesson 5: Cyber Crime (part 2)</strong>&lt;br&gt;Offline:</td>
<td>• Read Hint Sheet 02 on Protecting your Personal Information (printout in the Appendix)&lt;br&gt;Using Carnegie Cadets:&lt;br&gt;• Complete the Detention Center Tour, talk to Officer Ward and view the Wall of Shame&lt;br&gt;• Read the character bios in the PAL</td>
<td>• Learn about protecting your Personal Information from cyber criminals on the Protecting Your Information faculty page (<a href="http://www.carnegiecyberacademy.com/facultyPages/communication/personalInfo.html">http://www.carnegiecyberacademy.com/facultyPages/communication/personalInfo.html</a>)</td>
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<tr>
<td><strong>Lesson 6: Chat Rooms &amp; Instant Messaging</strong>&lt;br&gt;Offline:</td>
<td>• Complete the Alias Mask Activity (described in lesson, printout in the Appendix)&lt;br&gt;Using Carnegie Cadets:&lt;br&gt;• Complete the Communications Level 1 training mission about Personal Information</td>
<td>• Learn more about communicating safely online on the Communicating Safely faculty page (<a href="http://www.carnegiecyberacademy.com/facultyPages/communication/safely.html">http://www.carnegiecyberacademy.com/facultyPages/communication/safely.html</a>)&lt;br&gt;• Learn how to protect yourself when playing online games in the Online Game Safety Challenge (<a href="http://www.carnegiecyberacademy.com/funStuff/onlineGaming/onlineGaming.html">http://www.carnegiecyberacademy.com/funStuff/onlineGaming/onlineGaming.html</a>)</td>
</tr>
<tr>
<td>Lesson</td>
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</tbody>
</table>
| 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  
**Using the Academy website:**  
- Complete Betty’s Cyberbullying quiz  
- Learn more guidelines for 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)  
**Offline:** | • 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  
**Using the Academy website:**  
- Complete Betty’s Cyberbullying quiz  
- 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) | • 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  
**Using the Academy website:**  
- Complete Betty’s Cyberbullying quiz  
- 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) | • 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)  
**Using the Academy website:**  
- Complete the Growing an Online Reputation game (http://www.carnegiecyberacademy.com/funStuff/onlineReputation/onlineRep.html) | • Learn more about avoiding Plagiarism on the Using Web Resources page (http://www.carnegiecyberacademy.com/libraryGuides/using.html) |
| Lesson 13: Cell Phones | **Offline:** | • 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) |