



Technical Skill Focus – Basics of Cybersecurity

SuperCyberKids Lesson Plan

Lesson 2 Game Based Learning

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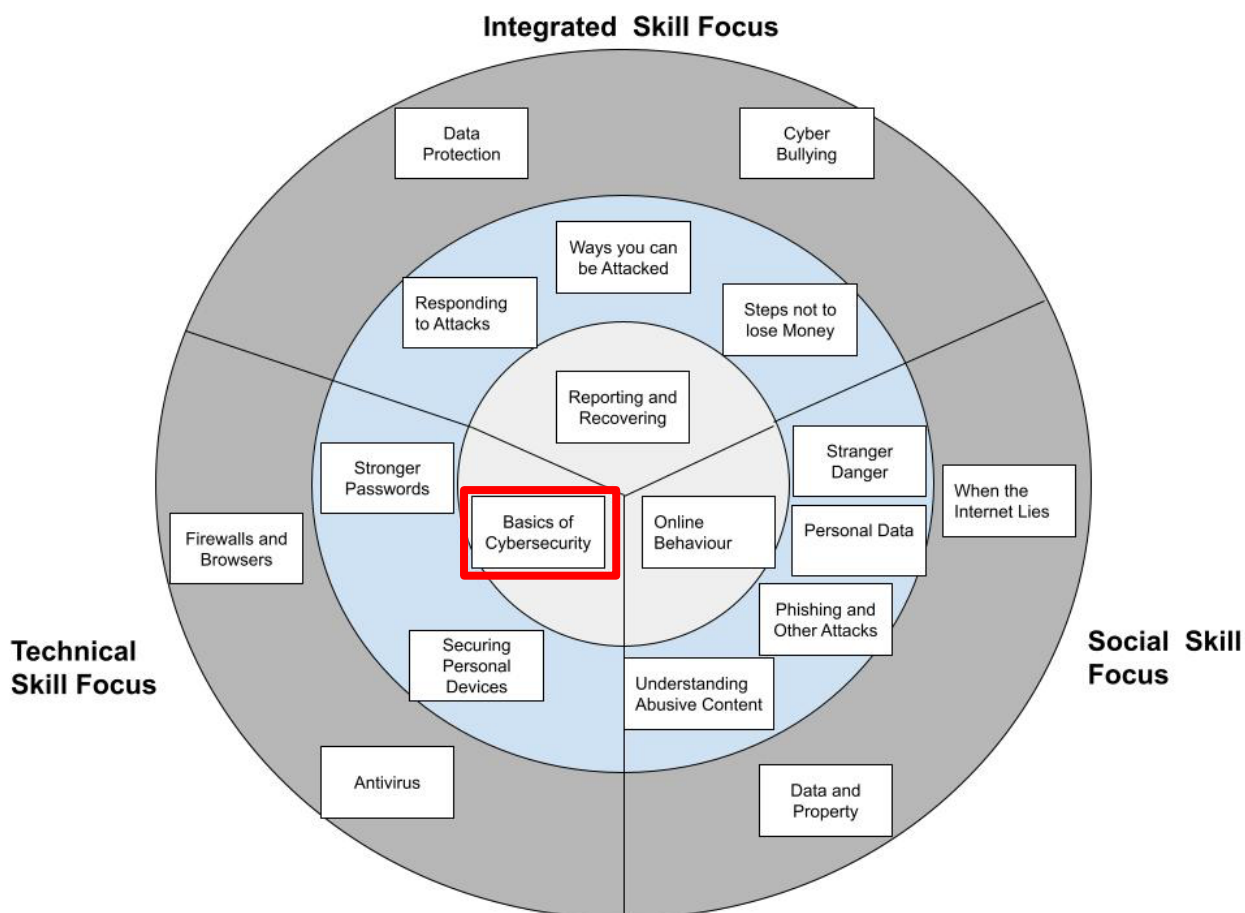
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1 Learning Context



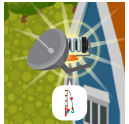
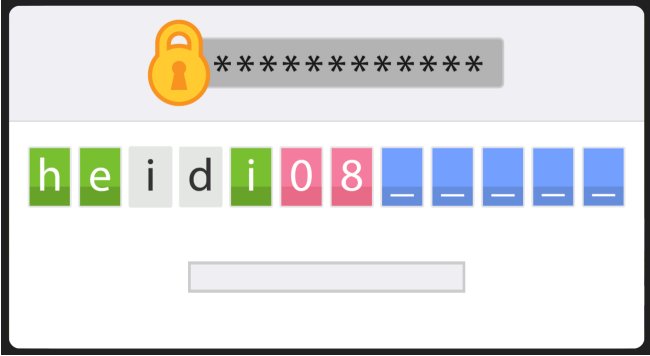

Main tool: Video game “Spoofy”

- Ages 8-13
- 10-25 students
- 50 minutes
- Location: classroom with projector or screen visible to all students
- Resources:
 - Internet-connected computer for instructor
 - *SPOOFY* game with lesson materials
 - Whiteboard
 - Paper and writing instruments for students

2 Objectives



3 Lesson Plan 2 - Game Based Learning

Activity	Time	Details	Learning Goal	Extras
Intro	5 min	<p>A part of this lesson will be game based learning. Control the game yourself to prevent the class from going off track.</p> <p>Introduce the game by starting the program, moving your character to the navigation panel, picking the map icon, and then picking the icon with a house and a tent.</p> <p>Announce to the class that they will be seeing a part of a game. There are not enough options to offer student involvement, so ask that they sit quietly as the teacher navigates to the important spot.</p>	Introduce topic	<p>Map icon:</p>  <p>Level icon:</p>  
Play game	10 min	<p>The closest person needs a lot of things before we can help them, so continue on to the right of the house where you see a girl under a tent that says Heidi.</p> <p>Talk to her to receive our mission:</p> <p>She has a new device, but it's telling her that her password is bad.</p> <p>Continuing shows us her current password</p>  <p>Take a moment to elicit issues with the password:</p> <ul style="list-style-type: none"> - Too short - No capital letters - Uses her name 	Knowledge & Comprehension	

		<ul style="list-style-type: none"> - Uses her age (could also be interpreted as year/month of birth) <p>Elicit reasons why these are bad for passwords.</p> <ul style="list-style-type: none"> - If you know Heidi, you probably already know all the information you need to guess her password. <p>Elicit ways to improve her password:</p> <ul style="list-style-type: none"> - No recognizable words - Mix of upper- and lower-case letters - More characters - Special characters (!@#\$%^&*()_+~=) if the system allows them <p>Now click the highlighted letters to change them. Check with the class: is the resulting password better? (Yes) Is the resulting password strong enough? (No, but the game lets us continue anyway)</p> <p>Upon solving her issue, she drops a party hat (this one is not a wearable item) which you can pick up and continue.</p> <p>(Game interaction ends. You may close the game for the remainder of the class.)</p>		
Activity	15-20 min	<p>Password game!</p> <p>In this game, students make terrible passwords, then let other students guess them. This is similar to the popular online word game Wordle.</p> <p>Materials: pen/pencil, paper for each student</p> <p>Place students in pairs.</p> <p>Task the students with creating a password using the name of someone in class with lower-case letters and two numbers (similar to Heidi’s original password).</p>	Application	

		<p>Ex: jimmy18</p> <p>The student then draws a number of blank lines on a sheet of paper equal to the number of characters in their password like so:</p> <p>Ex: _ _ _ _ _</p> <p>Have the other student in the pair try to guess the password by writing it below</p> <p>Ex: jenny19</p> <p>The student who created the password will mark correct letters as such.</p> <p>Ex: jenny19</p> <p>Then the guessing student will try to guess the password again.</p> <p>Repeat this process until the password is correctly guessed, then switch roles until both passwords have been correctly guessed.</p> <p>This process should be relatively quick if students have followed the rules.</p> <p>Once all students have guessed their partners’ passwords, task the students with creating new passwords that follow the rules for better security and task them with recreating their success from the first round. Note that upper- and lower-case letters should be considered different for this task.</p> <p>The hope is that guessing the new password will be technically impossible within the time constraints of a classroom activity, so allow the students only a limited amount of time to guess before switching roles.</p> <p>If everything goes well, no one will guess their partner’s password before the time is up, so cut off the activity when you’re ready to move on with the lesson.</p>		
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		You can also devote some time to discussion about how the latter password was able to be more secure from guesses.		
Discussion	10 min	<p>Ask the class how many guesses it took for their partner to guess their password.</p> <p>Elicit ideas for what made one password stronger than another.</p> <p>Discuss how each of these could be made even stronger.</p>	Analysis	
Assign Homework	5 min	Task Students with exploring their own real life passwords and altering them if they aren’t strong enough. Ask Students to take notes, but to not include any hints to what their new passwords are. They may share the old ones if they like.		
Wrap-up and review	5 min	<p>Elicit rules for strong passwords</p> <p>Answer any Students questions</p>		