Passwords

- Do students know how to create a secure password?
- Do students understand that email and online banking should have a higher level of security and not use the same passwords as other sites?
- Do students understand safe ways to remember their passwords?

How Hackable Are You?

You are trying to decide which password will be the safest. Check the box for the best password and explain why.

Option A: B!t3

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Option B: 1qaz2wsx

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Option C: Football#98!

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Option D: prince$$

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How Hackable Are You?

Perhaps the best way to answer this question is to refer to two resources:

Check #1: The most commonly used passwords.

Each year, a list of the most commonly used passwords will circulate through the web, (see 2015 Worst Passwords: https://www.teamsid.com/worst-passwords-2015/) but typically they are a combination of:

- 123456
- Password
- 12345678
- Qwerty (this is the top of the keyboard)
- 123456789

When a person picks a password from this list, it will literally be hacked in milliseconds.

Also note that hackers are making substitutions like "$" for "s" and 1 for "l" (See https://open.buffer.com/creating-a-secure-password/)

Check #2: How many types of characters and numbers of characters are you using?

Gibson Resource's "How Big Is Your Haystack"
https://www.grc.com/haystack.htm

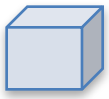
The second indicator of security is how many letters, numbers, symbols and special characters they use in their password. Because if the commonly used passwords don't work, then the hacker will attempt "brute force." This tool will test how long it should take a hacker to find your password using brute force.

Key Vocabulary: **secure password**, **password manager**

How Hackable Are You?

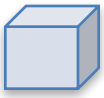
Teaching Tip: After you cover the content on the previous page, ask students to check the passwords again and come up with new recommendations.

Option A: B!t3



Check #1: This is not on any commonly used password lists.
Check #2: Brute Force check says this will take 22.87 hours to crack. Note that if it were just letters, brute force would take approximately 8 minutes. With numbers, it would take only 11 seconds. *(Discuss why… there are less numerals than alphabetic characters.)*

Option B: 1qaz2wsx

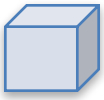


Check #1: This is on a commonly used password list. Why? It is a keyboard pattern, have students type the characters and they'll see it runs straight down the keyboard. People are having trouble remembering **secure passwords** and don't know about **password managers** so they are going for simple patterns on the keyboard. Bad idea.

Option C: Football#98!

Check #1: This is not on any commonly used password lists.
Check #2: Brute Force check says this will take 18 centuries or almost 2 years with a supercomputer
UNLESS You love football and your number is 98 and someone who knows you is trying to hack your account. So, beware. This is **called social engineering** and is often a common way people guess passwords. If this is your number and you play football, the best would be optionA.

Option D: prince$$



Check #1: While this is not on commonly used password lists, the word princess is. Hackers now check common substitutes like $ for "s" and 1 for the lowercase letter "l". This would not be a good password, especially if it is your nickname.

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Each year, a list of the most commonly used passwords will circulate through the web, (see 2015 Worst Passwords) but typically they are a combination of:

- 123456
- Password
- 12345678
- Qwerty (this is the top of the keyboard)
- 123456789
- If they use one of these, they are looking at seconds from being hacked.

When a person picks a password from this list, it will literally be hacked in milliseconds.

Resource 2: Gibson Resource's "How Big Is Your Haystack" https://www.grc.com/haystack.htm

The second indicator of security is how many letters, numbers, symbols and special characters they use in their password. Because if the commonly used passwords don't work, then the hacker will attempt "brute force." This tool will test how long it should take a hacker to find your password using brute force.