



Show: Slide 1

Say: Today we are going to be talking about Factors of Authentication and Multifactor Authentication

AUTHENTICATION

The process or action of verifying the identity of a user or process.

Show: Slide 2 (Slide-Authentication definition slide)

Ask: What does Authentication mean?

Say: Authentication is the process or action of verifying the identity of a user or process.

WHAT TYPES OF
AUTHENTICATION
HAVE YOU SEEN
IN YOUR LIFE?



Show: Slide 3 - Class Discussion Warmup

Ask: What types of authentication have you seen in your daily life? Expected Answers

- Passwords, Badges, Locker Combinations Etc.

FACTORS OF AUTHENTICATION

Something You Know

Something You Have

Something You Are

Somewhere You Are

Something You Do

Show: Slide 4 - The 5 Types of Authentication

Say: Today we are going to learn about the 5 different types of authentication.

Something you know, something you know, something you have, something you are, somewhere you are and something you do.

Say: Passwords are just one type of authentication that help to make sure it is really you on an account. There are many different ways that help keep others out of your accounts.



SOMETHING YOU KNOW



Show Slide 5

WHAT IS SOMETHING YOU KNOW?

Information that you have memorized, such as a password or a PIN.

Show: Slide 5 and 6 (Side-Something you know)

Say: The most common type of authentication is something-you-know. Something you know refers to something that you have committed to memory and is something that only you know. An example of something you know is a password, which is the most frequently used something-you-know authentication.

Ask: Have you or someone that you know ever used an ATM? What was needed to use it? (Expected responses: a card and a PIN number, hint as needed. An alternative to an ATM include a checkout at a store)

Say: A PIN is another something-you-know type of authentication. Something you know is the most common form of authentication but is also seen as a weaker form when compared to the other factors. Its strength relies on the complexity and length of the password. PINs are usually less secure than passwords because they are shorter in length. The card is an example of something-you-have.



SOMETHING YOU HAVE



Show: Slide 7



WHAT IS SOMETHING YOU HAVE?

Something you physically carry on you,
such as an ID Card or a Smartphone.

Show: Slide 7 and 8(Slide-Something you have)

Say: The second most common type of authentication is something you have. This is something that is usually physically kept on you. An example of this is the bank cards or credit cards mentioned before.

Ask: What other items could be used as a form of something you have authentication? (Expected responses: An ID Card or Mobile Phone App)

Say: Something you have can be a variety of different things, which are typically more secure than something you know types of authentication. These can include single use passwords from phone apps or text messages and ID badges which can be used to gain access to buildings. While being more secure than passwords because they are physically kept on you, they can be lost or stolen.



SOMETHING YOU ARE



Show: Slide 8



WHAT IS SOMETHING YOU ARE?

A physical trait that relates only to you, such as a fingerprint or your eyes.

Show: Slide 9 and 10 (Slide-Something you are)

Say: Something you are is a type of authentication that is becoming more popular. Something you are is often referred to as biometric security, this is something that is unique to you and won't likely change. Fingerprints are unique and are often the most common type of something you are authenticating.

Ask: Thinking about something that is unique to yourself, what could be used as authentication?

Say: There are several different things that are unique to you that can be used for biometrics. Fingerprints, eye scanners, facial recognition, and voice recognition are each examples of a biometric authentication and fall under something-you-are. This type of authentication is some of the most secure because of the unique differences in biometrics. However, if the information for your biometrics is ever stolen, they can't be changed and this would compromise security.



SOMEWHERE YOU ARE



Show: Slide 11



WHAT IS SOMEWHERE YOU ARE?

When a location is used for authentication, such as unlocking a phone when at home at a certain spot.

Show: Slides 11 and 12 (Slide-Somewhere you are)

Say: Somewhere you are is a type of authentication that uses location for identification purposes. While not commonly noticed, somewhere you are, types of authentication are often used to check for activity that is outside of an approved location. An example of this is allowing your phone to automatically unlock while you are home.

Ask: Where might “somewhere you are” authentication be helpful?

Say: It may not be the most used or noticable type of authentication but it is still a helpful form of security. A great example of this is that banks often use location to check to see if money was stolen.



SOMETHING YOU DO



Show: Slide 13



WHAT IS SOMETHING YOU DO?

A particular behavior that only you do, such as a routine you have.

Show: Slides 13 and 14 (Slide-Something you do)

Say: Something you do is a type of authentication that uses routines or patterns that are unique to you for identification.

Ask: Is there something in your routine that you consider unique? How could it be used for authentication?

Say: This is the least common type of authentication. Technology surrounding it is in the early stages of being developed and may become more prominent in the future. An example of this type of authentication would be detecting a suspicious login at a time you aren't really active on an account. If you normally log into your account between 5p.m. to 10p.m., log in at 3a.m. may be considered suspicious.

MULTIFACTOR AUTHENTICATION

The combination of two or more types of authentication to make something more secure.

Show: Slide 15 (Slide - Multi Factor Authentication definition)

Ask: What could Multifactor Authentication mean?

Say: The combination of two or more types of authentication to make something more secure.



WORDSEARCH

Show: Slide 16 - Word Search

Hand out worksheets to students and have them individually work on the Wordsearch puzzle.

Say: “Now we will do a short wordsearch, please work quietly by yourself and sit quietly when you are finished.”

Collect the Worksheets when the students are finished.

WRAP UP

Something You Know

Something You Have

Something You Are

Somewhere You Are

Something You Do

Show: Slide 17 - Wrap-Up

Have the students break down into individuals or small groups to come up with other examples of authentication they have seen before. Let them work for 3-5 minutes. Once time is up, have them volunteer examples they have come up with. Record the responses for all to see (whiteboard or computer).

Discuss: Go through the responses and identify which ones are single authentication, two-factor authentication, and some ways that additional authentication can be added.

Example-Bank card: PIN-know/Card-have

Example-Online account: Password-know/Phone-have