

#### **Lesson Plan**

This lesson plan is designed to help you teach using a Common Craft video. Use the information below to introduce the video and then follow the video with discussion questions and other resources.

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#### commoncraft.com/video/encryption-web

ISTE Standard: Digital Citizen, Indicator 2d

# **Encryption on the Web**

#### **Explained by Common Craft**

We now depend on the Internet for so many sensitive things like bank transactions and private emails. Behind the scenes, encryption is working to make it all secure and this video explains the basics.

#### **Learning Outcomes**

- Explain how encryption keeps confidential information safe
- Compare and contrast Symmetric Key Encryption to Public Key Encryption
- Describe how Public Key Encryption works in a real life setting (e.g. online banking)

#### **Discussion Questions**

#### Q #1

Compare public key encryption with symmetric encryption.

#### Q #2

What criteria would you use to determine what type of information you communicate via the web with symmetric encryption?

#### Q #3

How might a system that uses public key encryption become compromised?

# Knowledge Check Q&A

#### Q

What is encryption?

#### Α

A method to keep communication on the web secure by making messages unreadable to anyone without a key.

# Q

What are the two different types of keys that manage most encryption?

#### Α

1) symmetric key 2) public key

### Q

What are the disadvantages of symmetric encryption?

#### Α

The more people who require identical keys, the likelier the system is compromised.

#### **Resources for Learning More**

#### **NPR Morning Edition**

"E-mail: To encrypt or not to encrypt?" 6/19/2008 (4:32 minutes)

http://www.npr.org/templates/story/ story.php?storyId=91666556

#### **TED Talk**

"Andy Yen: Think your email's private? Think again" 10/2014 (12:09)

https://www.ted.com/talks/ andy\_yen\_think\_your\_email\_s\_private\_t hink\_again

#### Wired

April Glaser "Encryption pioneers win computing's most prestigious awards" 3/2/2016

https://www.wired.com/2016/03/ encryption-pioneers-win-computingsprestigious-award/

#### **MIT News**

Larry Hardesty "How to Stay anonymous online" 7/11/2016

http://news.mit.edu/2016/stayanonymous-online-0711

#### Wired

Klint Finley "We've just encrypted all of Wired.com" 9/16/2016

https://www.wired.com/2016/09/nowencrypting-wired-com/