Internet Safety

Networks, Legal and Ethical Behaviors

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http://www.cs.bsu.edu/cs4ms/docs/InternetSafetyLessonPlan.pdf
http://www.cs.bsu.edu/cs4ms/docs/InternetSafetySlides.pptx

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Objective: Understand the difference between the world wide web and the internet. Gain awareness about the dark web and learn how to avoid it.

Standards: 6-8.IC.1, 6-8.IC.2

Background: The purpose of this lesson is to help students stay safe when they are online and teach them how to protect themselves from online predators. Every minute, online accounts get hacked because users fail to securely logout of their online session or don't have enough security measures in place. Posting pictures and videos on the internet is good for showing family and friends, but when you do, it becomes available to more people than you might intend.

Disclaimer: This plan goes into minor details about the dark web that may or may not be school appropriate.

Procedure:

Slide 1: Talk with students about how much time they spend on the Internet. Ask them how many hours they spend on it. What do they do?

To start off, ask them if they know the difference between the internet and the world wide web (WWW). The Internet is a massive network of networks interconnected to all computers across the world.

The best way to think about the internet is to refer to it as the hardware of our online world. There are thousands of data centers all across the world that are home to websites such as Facebook, Twitter, Instagram and Snapchat. These data centers hold petabytes of data. A petabyte is a million times bigger than a gigabyte.

Slide 2: Now that we know what the internet is, it's also good to understand what the world wide web is. In the 1990's, technology advanced to the point where we were starting to see some major innovations. Among them was the world wide web. Computer scientist Tim Berners-Lee invented the world wide web to display information across different computers in real time.

This is the same world wide web we know today as the web. Fast forward 25 years and the web as evolved to heights never thought possible. Its best to think of the web as the software of our online world. Today we have millions of websites that serve a number of purposes.

Slide 3: To dive deeper and better understand what the web contains, you have to split it into three separate categories. Since anyone can put things on the internet, we have to understand what each category means. The three categories are the surface web, the deep web, and the dark web.

These different classifications of the web are best compared to an iceberg. Your surface layer is above there surface: the surface web. The area below the surface is the deep web and the dark web.

Slide 4: Starting from the top we have the surface web. It is home to all websites that anyone can access freely. These websites generally accessed by the public. Some of the most popular websites that people visit here are Facebook, Google, Twitter, Instagram, Snapchat and YouTube. The surface web also is home to online gaming servers such as Xbox Live and PlayStation Network.

Even with so many big sites, the surface web is only 4% of the entire web.

Slide 5: Moving down the line we have the deep web. It contains classified and confidential information. Most of these sites are secured to protect the contents from outside predators. The deep web holds data such as legal documentation, medical records, criminal records, driving records, financial records, scientific reports, government documentation, and academic records. All of this information is accessed by government officials, educational experts, and medical professionals.

To sum up the deep web, it forms about 90% of the whole world wide web. It is the largest portion of the web and holds records of each person on the planet.

Slide 6: Here is where we get to the dark web. As the name suggests, the dark web is the least frequently visited portion of the web. It is where largely illegal activities take place. These events include drug deals, black-market purchases, as well as circulation of pornography, criminal evidence, and human body parts.

Most people on the dark web do not want any information traced back to them, so most dark websites are encrypted so no data leaves the site without permission. This encryption is why most search engines don't pull up pages from the dark web. The dark web is also home to predators and hackers attempting to gain access to individual personal data. This comprises 6% of the web.

Talk about what websites your students visited last. Then ask what category those sites fall under. Now that the students have a better understanding of what comprises the world wide web, let's talk about things they can do to stay safe online.

Slide 7: Go over seven safety measures to protect students online. Social media platforms such as Snapchat and Instagram are two of the most used apps on smartphones. They hold personal photos and information. One way to protect yourself is by using different passwords across different services.

When posting things on social media, it is a good practice to think twice before clicking on the share button. Once a post is sent, there could be thousands of eyes that see it. People that know you look at these posts and affect their opinions about you, either positively or negatively.

Review: The internet is a great resource of knowledge and entertainment. It's great for sharing information with friends and family. It can also be a dangerous place. Predators lurk all over the internet. It's always good to practice safety measures that protect you in our online world.