

Internet Safety and Cybersecurity

Textbook

Internet Safety and Cybersecurity



It's important to stay safe while using a computer. This protects you and your family from possible threats like viruses or thieves. With a tool that connects people from all over the world like the internet, there are steps that should be followed to make sure you stay safe.

Simple Steps to Stay Safe

These easy steps can help you stay safe while using the computer.

1. Password Safety As you grow up, you'll use lots of different passwords. Starting now, it's smart to make strong passwords. Easy ones can be guessed by others. If someone knows your password, they can get into your stuff, which can be bad. That's why your passwords need to be strong. Suggestions for creating a strong password:

- Pick a password with numbers and letters.
- Use lowercase and uppercase letters.
- Make it long, at least 8 characters long.

2. Don't Share Personal Information Whenever you tell stuff about yourself on the internet, strangers might see it. It's really risky to share things like your full name, your family's names, or where you live. To protect your information, don't share too much about yourself online.

3. Log in AND Log out Logging in is important so that you are on your account. It keeps your stuff safe and just for you. Remember to use your strong password to sign in. This also helps you to keep everything organized and easy to find. Signing out is super important too. If you forget to sign out of a school computer, the next person could get into your stuff. They might mess up your work or even do something bad. To stay safe, always remember to sign out when you're done using a computer.

4. Don't Talk to Strangers Online Just like in real life, it's best not to talk to strangers online too. Chatting with people you don't know can be risky. This goes for emails, chatting apps, or leaving comments. You can't always tell who you're talking to online. Remember, people might not be who they say they are! It's safest to stick to talking with people you know in real life, even on the internet.

Keeping Your Devices and Information Safe

- **Physical Security** To keep your personal information safe, you can use physical security. This means things you can touch and see. For example, you can lock your doors to keep people out, or put important things in a safe. You can also cover the camera on your device to stop anyone from watching you without permission.
- **Digital Security** Digital security is about protecting your information on the internet. One way to do this is by using strong passwords that are hard to guess. You can also install virus protection to help keep your computer safe from bad programs. Some devices use things like fingerprints or face scans to make sure only you can unlock them. These tools help keep your information safe online.
- **Parental Digital Monitoring Programs** Sometimes, adults use special programs on computers and phones to help keep kids safe online. These are called **parental digital monitoring programs**. They act like a helpful co-pilot for grown-ups.
 - **What they do:** These programs can help parents see what websites you visit, how long you're online, or what apps you use. Some can even block websites that are not safe for kids.
 - **Why they are used:** Parents use them to make sure you're exploring the internet safely, avoiding bad websites, and not talking to strangers. It's their way of watching out for you, just like they watch out for you in the real world. They help make sure the websites and apps you use are appropriate for kids.

Threats to Safe and Efficient Use of Devices

While computers and the internet are amazing tools, there are things that can cause problems or even be harmful. These are called **threats**. Knowing about them helps you stay safe!

- **Viruses and Malware:** These are like sicknesses for your computer. They are bad programs that can slow down your device, steal your information, or even stop your computer from working. You can get them from clicking on bad links or downloading strange files.
- **Phishing:** This is when tricky people try to trick you into giving away your passwords or other private information. They might send you a fake email that looks real, asking for your password. Always be careful about what you click or what information you type in!
- **Online Strangers:** As we learned, talking to people you don't know online can be risky. They might pretend to be someone they're not and try to get your personal information or convince you to do something unsafe.
- **Cyberbullying/Harassment:** Impolite messages or actions online can make using computers less fun and more difficult. Always report anything that seems wrong or upsetting to a trusted adult.

Threats to Efficient Use: These make your device not work as well.

- **Viruses/Malware:** Besides being unsafe, they can also make your computer very, very slow!

- **Too Many Tabs/Apps:** Having too many programs or web pages open at once can use up all your computer's "thinking power" and make it slow down.
- **Old Software:** If your apps and operating system (like Windows or macOS) aren't updated, they can have problems or run slowly. Updates fix these issues.
- **Full Storage:** If your computer's hard drive is completely full of games, pictures, and videos, it won't have room to work properly and will slow down.

Safety is Important

Using computers can be fun and safe as long as we take steps to ensure our security and are aware of possible threats.

Critical Thinking Questions

1. Why do computers treat numbers differently from words (strings) in programming?
2. How do different cultures use numbers in unique ways, such as in writing, calendars, or games?
3. Why is it important to have a strong password, and how do numbers make passwords more secure?

Questions (5)

1. You are making a new password. Which one is the safest to use?

MULTIPLE CHOICE

Choose the correct answer:

- A. 1234
- B. myname
- C. T!ger5Run
- D. abc

2. What should you do after using a school computer?

MULTIPLE CHOICE

Choose the correct answer:

- A. Leave it open
- B. Turn off the lights
- C. Log out of your account
- D. Move to another desk

3. You get a message from someone you don't know. What should you do?**Choose the correct answer:**

- A. Say "hi" back
- B. Tell a friend
- C. Talk to them a lot
- D. Don't answer and tell an adult

4. Which of these is a good rule for staying safe online?**Choose the correct answer:**

- A. Share your address
- B. Use your pet's name as a password
- C. Tell people your school name
- D. Don't share personal information

5. Which of these is part of physical security?**Choose the correct answer:**

- A. A secret question
- B. A password
- C. A locked door
- D. A username

Games (2)

1. Internet Safety and Cybersecurity Typing


Full Screen

Audio

Instructions

Restart

Pause



0s 100%

It's important to stay sa

2. Internet Safety and Cybersecurity Category

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Order

Attempts: 0

Pick a password with numbers and letters

Talk with people online you don't know

Don't Talk to Strangers Online

Use your first name in your passwords

Stay logged in


Don't Share Personal Information

Post your personal address

Log in AND Log out

Ways to Stay Safe Online

Ways to Not Stay Safe Online



Robotics Challenges (1)

1. Arrow Passwords

Challenge

Textbook

Arrow Passwords

Turn the micro:bit into a digital lock. For this challenge, recreate passwords using buttons. When each button and logo is pressed, an arrow pointing in a different direction will show. Program the following:

- When button A is pressed, show an arrow pointing left.
- When button B is pressed, show an arrow pointing right.
- When buttons A and B are pressed, show an arrow pointing up.
- When the logo is pressed, show an arrow pointing down.

You will need to use the [show LEDs](#) blocks to design your arrows.

For example, if the arrow password was, $\leftarrow \uparrow \rightarrow \downarrow$

you would press button A, buttons A and B, button B, and then the logo. This sequence of pressing buttons would recreate the arrow password above.

Program the following passwords:

Step 1

Code the micro:bit to show an arrow pointing left when you press button A.

Arrow Passwords Step 1 of 4



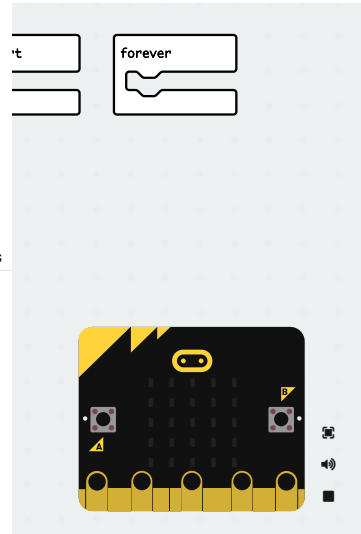
1

Next

Toolbox

Search...

- Basic
- Input
- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced



Download



Answer Keys & Solutions

Questions

1. You are making a new password. Which one is the safest to use?

MULTIPLE CHOICE

Correct Answer:

- | | |
|--------------|-------------|
| A. 1234 | ✗ Incorrect |
| B. myname | ✗ Incorrect |
| C. T!ger5Run | ✓ Correct |
| D. abc | ✗ Incorrect |

Explanation:

A good password has letters, numbers, and symbols.

2. What should you do after using a school computer?

MULTIPLE CHOICE

Correct Answer:

- | | |
|----------------------------|-------------|
| A. Leave it open | ✗ Incorrect |
| B. Turn off the lights | ✗ Incorrect |
| C. Log out of your account | ✓ Correct |
| D. Move to another desk | ✗ Incorrect |

Explanation:

Logging out keeps your work safe.

3. You get a message from someone you don't know. What should you do?

MULTIPLE CHOICE

Correct Answer:

A. Say "hi" back

✗ Incorrect

B. Tell a friend

✗ Incorrect

C. Talk to them a lot

✗ Incorrect

D. Don't answer and tell an adult

✓ Correct

Explanation:

Don't talk to strangers online.

4. Which of these is a good rule for staying safe online?

MULTIPLE CHOICE

Correct Answer:

A. Share your address

✗ Incorrect

B. Use your pet's name as a password

✗ Incorrect

C. Tell people your school name

✗ Incorrect

D. Don't share personal information

✓ Correct

Explanation:

Keep things like your name and address private.

5. Which of these is part of physical security?

MULTIPLE CHOICE

Correct Answer:

A. A secret question

✗ Incorrect

B. A password

✗ Incorrect

C. A locked door

✓ Correct

D. A username

✗ Incorrect

Explanation:

Physical security is something you can see and touch.

1. Internet Safety and Cybersecurity Typing

Typing game - no answer key needed. Students practice typing the provided content.

2. Internet Safety and Cybersecurity Category

Category Solutions:

Category 1: Ways to Stay Safe Online

- Pick a password with numbers and letters
- Don't Share Personal Information
- Log in AND Log out
- Don't Talk to Strangers Online

Category 2: Ways to Not Stay Safe Online

- Post your personal address
- Talk with people online you don't know
- Stay logged in
- Use your first name in your passwords

Students must sort items into their correct categories.