



UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

Online Safety

Cycle 2 – Grade 5



Computing, Creative Design and Innovation

Student book

Grade 5

Volume 3



1445 - 1446 A.H./2024 - 2025 A.D



UNIT 3



Networks and The Internet



Overview

In this unit, you will learn the various ways that you can be **vulnerable online** and how different types of **personal information** can be used in bad ways. You will also learn how to identify the different ways that people can try and steal personal information from someone. As well as this, you will learn ways that you can protect yourself from online security issues (e.g., anti-virus, firewalls etc). You will learn the best way to put information back together in a **network** after being broken up and transmitted.

Keywords

Term	Definition	Image
cyber security	physical and digital methods used to protect electronic devices and information from harm, theft, and unauthorised use	
antivirus software	antivirus software is a computer program used to prevent, detect, and remove malware/viruses	

Learning objectives

- 3.1. Describe different ways you can be vulnerable online.
- 3.2. Explain the different ways that people can try and steal personal information from people.
- 3.3. Explain different ways that you can protect yourself from online security issues.
- 3.4. Identify methods put information back together in a network after being broken up and transmitted..
- 3.5. Explain how information is transmitted over the internet.
- 3.6. Describe potential sources of bias in AI decision making.



Online safety

Personal information

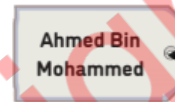
When we use the internet, we can choose to share our **personal information**.

What is personal information?

Name

Your name is what people **call you** by.

It is written on your **passport** and **birth certificate**.



Date of birth

Date of birth is also written as **DOB**.

It is the **day**, **month**, and **year** you were born in.



Photograph

Your photograph is a **picture** of you.



Address

Your **address** can also be called your **location**.

It is where you **live**.



Bank account details

This can be your bank account number or your card number.



Passport details

Your passport contains:

- your passport number
- photograph
- details about where you were born



Activity 3



Personal information being misused

Your **personal information** needs to be kept very safe.



This is because **someone bad** could use it in the **wrong way**.

How can personal information be used in the wrong way?

Stealing money

If someone knows your **banking details**, they can **steal your money**.



Some of the ways this can happen is by:

- Using **weak passwords** e.g., '12345' or 'password'.
- Using an **unsecured WiFi** network.
- Making purchases from websites without '**s**' after '**http**'.
The '**S**' means the website is **secure**.

Identity theft

This is when someone **steals** your **identity** and **pretends** to be you.



They can do **crimes** while **being pretending to be you**.

These crimes can include:

- **Stealing** your **money** or other people's money.
- Using your **medical insurance**.
- Applying for **loans** using your name.

Home robbery

If someone knows where you **live** and **details** about you, they can try to **rob** your **home**.

Things you should not share online include:

- Your full **home** address.
- What **time** you go to **work**.
- **When** you are on **holiday**



Activity 4

Theory



How personal information be taken

There are many ways **personal information** can be **taken** by bad people.



Here are some of the **common** ways:

Stealing your mail or garbage for personal information

Most people **throw out** their **mail** when they no longer need it. But most mail contains **personal information**.



A bad person can go through the **rubbish** in your bin. They can get hold of your **personal information**.

Tricking you into sending them personal information

A bad person can **pretend** to be someone else, for example, a **bank**.



You can get a **fake email** from your **bank** asking for **account information**.

Fake emails can be **difficult to recognise**.

Stealing your wallet or purse

Your **wallet or purse** contains your **bank cards** and **ID cards**.



Not taking care of wallets and purses means they can easily be **stolen**. This puts your **personal information** at **risk**.

Losing them means a bad person can find them and use your **personal information**.



Activity 5



Online security issues

The **internet** may not be a **safe** place all the time.



Below are some **common** online **security issues**.

Phishing scams

Phishing is when someone **tries to get** hold of some of your **private information**.

This can include:

- **Names.**
- **Passwords.**
- **Credit card details.**



Bad people can contact you by **email**, **telephone** or **text** pretending to be someone else.

They may say things like **"Send us your card details quickly! Your account will get closed if you don't!"**

Malware

Malware is a **harmful software**. It can get installed on your computer **without** your **permission**.



The main reason people create malware is to **hurt others** and **make money**.



The most common way for **malware** to get **installed** is through **email**. 

There are different types of **malware**:

- **Viruses**
- **Worms**
- **Adware**
- **Spyware**

Protecting yourself on the internet

There are many ways you can **protect** yourself on the **internet**.



Here are some of the **common ways**:

Use strong passwords

Strong passwords are the easiest way to **protect** yourself online.

Avoid using:

- ⦿ **First, middle, or last name**
- ⦿ **Birthday**
- ⦿ **Phone numbers**
- ⦿ Something that can **easily** be **guessed**



Use **symbols**, **numbers**, and a combination of **upper** and **lowercase** letters.

Password strength: Weak



Password strength: Fair



Password strength: Good



Password strength: Strong



Look for encryption

Encryption is turning **information** into a **code** to keep it **protected**.

You will know a website is encrypted with two things:

- A lock symbol

- An '**s**' after '**http**' to make it '**https**'. The '**s**' stands for secure.

https://www.hsbc.ae



Install security software

Security software stops bad people and programs from **affecting your computer**.



They **block harmful software** like **spyware**, **viruses**, and **phishing scams**.

Some **popular security software** include:

- ⦿ Norton Antivirus
- ⦿ McAfee Virus Protection
- ⦿ AVG Internet Security

Avoid phishing scams

To **avoid phishing scams**, you need to learn what out for. You should:

- ⦿ **Never open emails** or attachments from **unknown sender**
- ⦿ Do not **click** on **unsecured links** from emails
- ⦿ Avoid messages about **unfamiliar opportunities**



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Activity 6



Computer security

Computer **security** can come in **two forms**:

- **Software security**
- **Hardware security**

Software security

Software security is a barrier for **programs, files,** and the **information flow** to and from a computer.

Some examples of **software security** include:

Anti-virus software

As you learned before, these softwares protect you from **spyware, viruses,** and **phishing scams.**



Secure passwords

As you learned before, creating **strong password** will make it **difficult** for someone to **guess your password.**



Encryption

As you learned before, using websites that are **encrypted** means your **information** will be sent in **code.**



Firewall

Firewalls **block unexpected connections** coming into the network.



Hardware security

Hardware security protects the **machine and other hardware** from theft and damage.

Some examples of **hardware security** include:

Fingerprint reader

Many **laptops** contain a built-in **fingerprint reader** for security.

Only you have your fingerprint so no one else can **access** your laptop.



Locks

Using locks will **protect** your **laptop**. These include:

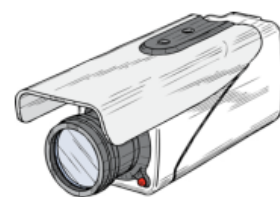
- ⦿ Laptop locker
- ⦿ Office locks
- ⦿ Cabinet locks



Security systems

Having security systems will create a barrier for theft. Common security systems include:

- ⦿ Burglar alarms
- ⦿ CCTV cameras



Activity 7





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MOE Copyright



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Online safety

Personal information



Activity 3



Mariam and Ahmed are learning about **personal information**.

Help them to identify which on the following is **personal information**. ✓

Statement	Personal information?
My name is Mariam Bin Mohammed.	
My favourite food is Pizza.	
I live in an apartment.	
I was born on 10th November 2011	
My passport number is 1234567	
My favourite subject is DT	
My credit card number is: 1234 5678 9101 1213	



Personal information being misused



Activity 4

Theory



Mariam and Ahmed are learning about how their **personal details** can be used in the wrong way.

Help them to complete the activity below by answering the questions.

1. Is the password strong or weak? Mariam12345

A. Strong

B. Weak

2. Suggest a strong password:

3. Making purchases from websites that start with 'http' is okay.

A. True

B. False

4. An identity thief pretends to be:

A. Your friend

B. You

C. Your mom

5. Never share the dates you are going on holiday on social media

A. True

B. False

How personal information be taken



Activity 5

Theory



Mariam and Ahmed are learning about ways **personal information** can be **taken** by bad people.

Create a **poster** for your **classmates** about things you should do to **protect your personal information**.

You can create the poster by hand or using a design software.



Protecting yourself on the internet



Activity 6

Lab



Mariam and Ahmed are checking the **strength** of their **password**.

Use the **link below** to check the **strength** of some of your **passwords**.



S

T

What was the **strength** of your password?

R

E

If your password was not at **100% full strength**, re-create it.

A

M

Computer security



Activity 7



Mariam and Ahmed are learning about **software** and **hardware** security.

Identify **which** of the following are **software** and **hardware** security features. ✓

Security measure	Software	Hardware
Burglar alarm		
Strong password		
Using a 'https' website		
Laptop locker		
Firewall		
CCTV camera		



