Summer 2 Year 3 Week 7 Day 4 Computing

To understand how viruses and malware are harmful to computers

If you have access to the internet, click on the link below and scroll down to watch the video.
https://www.bbc.co.uk/bitesize/topics/zd92fg8/articles/zcmbgk7

Read the information below:

Find out what can happen to your device if it gets infected by malware.

Viruses and malware are programs that can **attack** computers, tablets, phones and other digital devices. A **virus** is a small program designed to cause trouble by **gaining access to your device**. It can copy your personal data or slow your device down. A virus spreads by duplicating and attaching itself to other files. By combining the words '**malicious**' (meaning 'harmful') and '**software**' we get the word 'malware'. Viruses are just one type of malware. Other types include spyware, worms and trojans.

What can happen to your device?

Malware is made to stop your device from running properly and sometimes to **steal your information**. Your device can be harmed very quickly if it is infected by malware. It could crash, reboot or slow down. Your internet connection may also slow down as the virus or worm searches for other devices to infect, or transmits your data back to its maker.

Common types of malware

Viruses

A virus is a type of malware that spreads through **normal programs**. Once your device has a virus it may spread easily and quickly. A virus might just slow down your device - or it might be so severe you lose all your applications and documents!

Worms

Worms can spread from **device to device**, but unlike a virus they don't need to attach themselves to other programs. Worms can copy themselves hundreds of times, so they can very quickly harm your device and other devices. A worm might copy itself onto your email account and then send a copy to all of your email contacts!

Trojan horse

A trojan horse (or just a trojan) **pretends** it will be a useful and safe program, when actually it will try to attack your device.

Trojans are named after the story of the Trojan Horse. It is said that many years ago the Greek army wheeled a large wooden horse to the gates of the city of Troy. The people of Troy thought it was a gift and wheeled it inside. They didn't know that inside the horse were Greek soldiers waiting to attack. Can you see why a trojan horse on a device is named after this story?

Spyware

Spyware is software that installs itself onto devices and then **steals personal information** about the user, like passwords, email addresses and other important information. It often does it just by keeping a record of everything the user types, which is called key logging. Some spyware can even use your webcam without your knowledge.

How can you avoid viruses or malware?

You have to be smart when using your device. When using the web or email don't click on anything unless you know what it is. Check if it is an email you're expecting from an address you recognise or it is a site that you're sure you can trust.

Install **anti-virus software* and** run regular scans**. This will highlight any suspicious software.

Did you know?

An email cannot corrupt your device on its own. Viruses can be hidden in attachments and these could corrupt your system when you run them. **Remember not to run a program if you don't know where it has come from and haven't chosen to install it.**

Task 1- Now that you have read the information above, answer the following questions into your Home learning books.

1. The harmful types of malware are known as:
   a) spyware, Romans and worms
   b) trojans, worms and spyware
   c) worms, trojans and software

2. Viruses are **safe/harmful** to computers. If a virus enters your computer, it **can/cannot** access your personal data and it can **speed/slow** the computer down.

3. Why are worms harmful to a computer?
   Worms are harmful to computers because….

4. Where did the name 'Trojan' come from and why is a malware named after this?
   The name 'Trojan' came from……. and it is known as this because…….

5. Is spyware harmful for a computer? If so why?
   *I think spyware **is/isn't** harmful for a computer because….*

6. How can you prevent a malware harming your computer?
   You can stop a malware harming your computer by…….

Task 2- Your task now is to read the following scenarios below and come up with a sensible solution for each scenario. You can write your solutions into your Home learning books. There is an example below to help you.

Problem

I have just got a new computer. My mum says that I need to have an 'anti-virus' software installed before I can use my computer properly. Should I do this?

Solution

Your mum is right and you should install an anti-virus software onto the computer before using it. This will then scan and monitor files on the computer and safely remove any harmful content.

Now try and provide solutions to these problems below:

1)
Problem

I received an email which says I am entitled to a free upgrade on my computer game. I need to click onto the link which says 'download upgrade'. Should I click on this link?

2)
Problem

My friends all told me to download this game 'Beast Quest' onto the computer. You download the game from the internet. Ever since I downloaded this new game onto my computer, it is now being extremely slow and I don't know why?

3)
Problem

A message popped up on my computer screen during a game which said 'You have won £150 for being this month's top player, click here to receive the money!' Dad says I shouldn't click onto this link, but I want the prize money. What should I do?

4)
Problem

My parents told me that I have to regularly upgrade the anti-virus software on the computer. Why is it important I do this?

5)
Problem

I have just put ta USB stick into the computer so I can download the game onto it and play it on other computers. Is this a good idea?

Answers to these problems will vary and dependent on your advice!

Answers to Task 1

Task 1- Now that you have read the information above, answer the following questions into your Home learning books.

1. The harmful types of malware are known as:
   b) trojans, worms and spyware

2. Viruses are **harmful** to computers. If a virus enters your computer, it **can** access your personal data and it can **slow** the computer down.

3. Why are worms harmful to a computer?
   Worms are harmful to computers because they can spread from device to device, and they don't need to attach themselves to other programs. Worms can copy themselves hundreds of times, so they can very quickly harm your device and other devices.

4. Where did the name 'Trojan' come from and why is a malware named after this?
   The name 'Trojan' came from the Greek story of the Trojan Horse. It is known as this because the story was about when the Greek army wheeled a large wooden horse to the gates of the city Troy. The people of Troy thought it was a gift and wheeled it inside and they didn't realise the Greek soldiers were hiding inside to attack.

5. Is spyware harmful for a computer? If so why?
   I think spyware is harmful for a computer because it is able to install itself onto a device and steal personal information.

6. How can you prevent a malware harming your computer?
   You can stop a malware harming your computer by making sure you install an 'anti-virus software'.