Exercise 1: Match the words with the pictures and find them in the word search.

( ) USB  ( ) Folder  ( ) Wi-Fi  ( ) Bluetooth  ( ) Cursor
( ) Router  ( ) Headset  ( ) Memory Card  ( ) Software  ( ) Hard drive
( ) Excel  ( ) Processor  ( ) E-mail  ( ) Monitor  ( ) Printer
( ) CD-ROM  ( ) Speakers  ( ) Recycle Bin  ( ) Word  ( ) Keyboard
( ) Webcam  ( ) Download  ( ) Modem  ( ) Desktop PC  ( ) Laptop
( ) Browser  ( ) Windows  ( ) Mouse  ( ) Internet

M N P E W B D E S K T O P P C M E R K
O F I O X R I V R S M P G H M D A R E E
N R R B O C I F R J S E R T P F C A T Y
I D O W E R E E I W I N D O W S B W N B
T E S S D L K L A P T O P O C P E T I O
O E U D R A C Y R O M E M T M E W F R A
R O R H E U N Y T E S D A E H K S O P R
M A N P V H C K C B R E T U O R B S U D
H X S R E D L O F E D A O L N W O D O K
I N T E R N E T M O R D C B E M A I L R
Exercise 2: Choose five words from the list on the previous page and write down what these things are or what they are used for.

Example: A modem is a device we use to connect to the Internet.

1) ________________________________
2) ________________________________
3) ________________________________
4) ________________________________
5) ________________________________
6) ________________________________

Exercise 3: Match the words with their descriptions.

Data  A system of words or letters
Processing  Handling something.
Computer  Pieces of information.
Input  An electronic machine or device used for solving problems.
Programmer  A person who writes software.
Output  Instructions or information given to a computer.
Code  The result given by a computer.
Exercise 4: Complete the text, pictures of the missing words are shown below.

The first personal computers were built around the 1980’s. The only way to give the PC orders was with a _____________. Much later, graphical interfaces slowly and gradually came along, and it became more important to interact with objects. The most common way to do this was with a _____________. People who like playing games may also have a _____________ to give orders to the character or a vehicle in the game.

Ten years later, computers became much more powerful. It became possible to give voice commands over the computer with a _____________. We can also communicate with other people over the Internet. With a _____________ it is possible to virtually see people behind another computer as well.

___________ networks have become very important recently. People do not need a computer anymore to communicate with other people or play video games. Other devices, such as a _____________, can do the same thing.

Exercise 5: Unscramble the words. Hints are given below.

1) TTLHOEOBU — — — — — — — — A wireless technology.
2) XCLEE — — — — A spreadsheet application.
3) OERTW — — — — The base unit of a computer.
4) UILSNTNLA — — — — — — To remove an application from a computer.
5) WRRSOBE — — — — — — A program used to surf the Internet.
6) ETTRNEI — — — — — — A global system of connected computers.
7) PRRSEEOOC — — — — — — Hardware that carries out instructions of a computer program.
History

The computer was invented by Charles Babbage in 1822. He was an English mathematician who built a calculating machine that was powered by steam. His computer was going to be as big as a room and was called the Difference Machine. Nonetheless, Babbage's machine was never built as it was too costly and difficult to build. Even though the Difference Machine was never built, it laid the foundation for constructing the computers that we see and know today.

One of the first modern computers was built by IBM in 1944. This computer was called the Mark 1. It was a massive machine that continuously operated for 15 years. The first 'computer bug' was found in the Mark 1. It was not exactly a bug when compared to the bugs that we have in modern computers now. It was a real bug! A moth had fallen into IBM's computer and stopped the computer from working properly.

In the 1980's, the computer industry changed a lot. The first personal computers hit the market. Computers became faster, smaller and a lot cheaper. Today, nearly every household has a desktop or laptop computer. Many people cannot even imagine how life would be without computers.

Exercise 6: Are the statements true or false?

1) The first computer was built in 1822.  (   )

2) The Apple 1 was the first modern computer.  (   )

3) The Mark 1 was a very popular computer in many households.  (   )

4) Charles Babbage invented the first modern computer.  (   )

5) The first computers were built to perform calculations.  (   )

6) The Difference Machine was built by IBM.  (   )

7) The Acorn was the first computer with Microsoft Windows.  (   )

8) Personal computers became popular in the 80s.  (   )
Hardware

RAM
Random Access Memory (RAM), or internal memory, is the 'working memory' of a computer. It processes information and commands given by the user. Computers with high RAM memory can perform a lot of tasks and run smoothly.

Router
A router is a device that is connected to a modem. It receives the Internet signal from a modem and spreads it to several computers with a serial cable or with Wi-Fi.

Hard Drive
A hard drive stores files on a computer. All software on a PC is stored on a hard disk. The capacity of a hard disk depends on the amount of gigabytes or terabytes.

Modem
A modem is a small device that allows users to access the Internet. The device has two connections. One cable is connected to an outlet in a wall while the other is connected to a PC or router.

Motherboard
A motherboard is a piece of hardware that connects all hardware components together. Memory, hard drives, video cards, CPU and all other hardware is linked to a motherboard. You think of the motherboard as the 'back bone' of the computer.

Processor
A processor, or CPU, interprets and executes the commands from the computer's hardware or software. A CPU is considered to be the 'brain' of the computer.

Sound Card
A sound card allows computers to send audio information to speakers or headphones. Without a sound card, computer users cannot listen to audio files.

Graphic Card
A graphic card is a piece of hardware that sends graphical information to the screen. It processes images that are showed on a display. Video cards are important when lots of images need to be generated, like a computer game. The better the graphic card, the higher the quality of the images.
Exercise 7: Read the descriptions of the hardware components and answer the questions.

1) What is the difference between RAM and a hard disk?

3) Why is the CPU considered to be the 'brains' of the computer?

2) What is the difference between a router and a modem?

4) Which hardware component is important for playing demanding computer games?

Exercise 8: The words below are chopped into pieces. Find the pieces that fit together.

1) __________________  5) __________________  9) __________________
2) __________________  6) __________________  10) __________________
3) __________________  7) __________________
4) __________________  8) __________________
Exercise 9: Read the descriptions of the hardware components and answer the questions.

- Atari 2600
- GameCube
- NES
- PlayStation
- Dreamcast
- PlayStation 4
- Xbox
- Sega
- Gameboy
- Nintendo DS
- Nintendo Switch
- PSP
- Wii

M P L A Y S T A T I O N U N N T B H
N I N T E N D O S W I T C H I S E E
4 N O I T A T S Y A L P E N N A 2 Q
J B 0 0 6 2 I R A T A B E F T C 6 B
G A M E B O Y X Z Q U S I J E M L K
U I P S P W K F B C P C G J N A C W
E Z I H J P 4 K E O B S V A D E S 4
K B U W R A V M W K X E F I O R L U
C 4 D X J O A A T Q P G T I D D U P
K O Y Y G G P H N Y O A M Y S Y E D
Exercise 10: Complete the text with the words below.

programmers         quarantine         duplicating         frequently         unaware
downloads           corrupted           innocent           damage           operating

A virus is a computer file that is created to _____________ someone’s computer. Viruses spread by _____________ and attaching itself to other files. There are thousands of viruses, some of which are _____________ while others can cause serious damage to a computer.

Viruses are created by _____________ who want to cause problems for people who own a computer. Most computers become infected by viruses through email attachments or _____________ from the Internet. A virus scanner can detect when such a situation occurs and issues a warning to the user of the computer. But if an anti-virus software is not installed, the user will be _____________ that his/her computer is infected.

The following things can be done by computer users to prevent the computer from getting infected by a virus.

- Downloading anti-virus software and keeping it up-to-date.
- Updating the _____________ system (Windows, Linux, OS X).
- Avoid opening email attachments from unknown email addresses.
- Avoid downloading files from ‘questionable’ websites.

Anti-virus programs search for files and email attachments that are _____________. In case something is found, it will immediately ____________ or delete the file. Some viruses may cause damage to a user’s data, so it is always a good practice to ____________ make backups.

**INTERESTING FACTS**

- 70% of the programmers of viruses work for organized crime syndicates.
- Every month, more than 6,000 new viruses are created.
- Stuxnet is a powerful virus that is sophisticated enough to take down a nuclear power plant.
- ‘Brain’ is the name of the world’s first computer virus and was designed in Pakistan.
Exercise 11: Answer the questions about computer viruses.

1) A computer virus …
   a. is designed by programmers.
   b. copies itself.
   c. attaches itself to other files.
   d. all of the above.

2) Stuxnet is a famous virus that…
   a. was created to disable nuclear facilities.
   b. is so powerful that it can take down important facilities.
   c. was created by a crime syndicate.
   d. is designed to damage ordinary people’s computers.

3) In order to prevent your computer from being infected, you should …
   a. make frequent backups.
   b. install a virus scanner.
   c. not download questionable files.
   d. all of the above.

4) How many different viruses exist?
   a. 70 million  
   b. 6,000  
   c. 1  
   d. not given

5) Which statement about viruses is not true?
   a. Computer viruses can spread through emails.
   b. A virus cannot infect a computer with a virus scanner.
   c. Some people download a virus without realizing it.
   d. It is important to frequently update a virus scanner.

6) Some viruses do not cause any inconvenience for computer users.
   a. true  
   b. false

7) An e-mail address can be infected with a virus.
   a. true  
   b. false

Exercise 12: Have you ever had a virus on your computer? How did it affect your PC and how did you get rid of it? Explain.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Computer Games

Exercise 13: Unscramble the words, match them with the pictures, and complete the crossword puzzle.

( ) tfrfaalocrdWWr
( ) GAT
( ) Meclntria
( ) Pn-aMac
( ) AgydrsnirB
( ) etisrT
( ) fsdeoperdeNe
( ) eScntteiroruk
( ) TSmeish
( ) prorMaeSiu

Exercise 14: Match the words with the descriptions.

Noob • A game in which each participant assumes the role of a character.
Demo • A game where several gamers play the same game at the same time.
Cheat • A free and incomplete game.
First-Person Shooter • A shooting game in which the player looks through the character's eyes.
Role Playing Game • A game slows down due to a poor internet connection.
Arcade • A term for an unskilled player.
Lag • A game machine in public spaces.
Multiplier • A code that enhances the player's abilities in a game.
Cyber Crime

Cyber-crime is one of the fastest growing crimes in the world. Frequent users of the internet buy things from online shopping platforms, perform online banking and store their files on a ‘cloud’. These events provide endless opportunities for cyber criminals who take advantage of the weaknesses of others.

More than 70% of all Americans have experienced some form of cyber-crime in their lives. Most of these illegal online activities are hard to detect and solve. In many cases, victims of cyber-crime do not even realize that something illegal or illegitimate has taken place.

Basically, there are three types of cyber-crime.

- **Harassment** – Some people use the Internet anonymously and are engaged in illegal activities like stalking, harassment and bullying.

- **Hacking** – Hackers break into online networks and try to corrupt or download all kinds of sensitive or valuable information.

- **Phishing** – Phishing is the activity of sending emails to people trying to trick them. The purpose of phishing is to obtain money from the recipients of these emails. Usually, the elderly, who are not very computer savvy are the most vulnerable groups for this kind of crime.

Anonymous

Anonymous is a group of hackers that is famous for their distributed denial-of-service (DDoS) attacks. They target organizations such as governments and large companies. A DDoS attack is a process in which many computer systems attack a single target, such as a website or a server. The enormous number of incoming messages (attacks) slow down the server so that it cannot be used anymore.
Exercise 15: Are the statements below true or false?

1) Cyber-crime is the most common crime in the world. ( )
2) Online bullying is a cyber-crime. ( )
3) More than half of the American population has been affected by cyber-crime. ( )
4) Cyber-crimes are hard to detect and solve. ( )
5) Inexperienced Internet users are more vulnerable to cyber-crime. ( )
6) Hackers try to trick people and harass people online. ( )
7) More than 70% of all Americans are bullied on the Internet. ( )
8) Phishing is an attempt of trying to acquire sensitive information. ( )

Exercise 16: Answer the questions below.

1) Why do you think it is so difficult to catch and prosecute cyber criminals?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2) Have you ever been a victim of an online crime? If so, can you please describe the situation in detail?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3) Have you ever done something that is not allowed on the web? If yes, what is it and why did you do so?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4) Which cyber-crime do you think is the most dangerous? Give reasons to justify your answer.
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5) What is Anonymous?
________________________________________________________________________
________________________________________________________________________

6) What is a DDoS attack and how does it work?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Exercise 17: Match the brand names with their logos and find them in the word search.

( ) eBay
( ) Google
( ) Picasa
( ) YouTube
( ) Skype
( ) Intel
( ) HP
( ) Apple
( ) Safari
( ) Internet Explorer
( ) Asus
( ) Java
( ) Wikipedia
( ) Gmail
( ) Acer
( ) Firefox
( ) Yahoo!
( ) Lenovo
( ) Facebook
( ) Twitter
( ) Microsoft
( ) LG
( ) Chrome
( ) Windows
( ) Bing

SAFARI S Z E 2 U F J
E J O E E F W W A L I T A
L A W Y R O A I O R P S Q
G V I Q O L D C E D A P S
O A O H L E E E F E C N K A
O N A A P T O N I B Y I K
G Y C I X X N P O P O A W
I E K L E T N I E V Q O V
R I R E T T I W T Y O C K
W G N W E G W B B O L H C
C E M A N A D E N U I R C
O M I C R O S O F T A O A
G N I B E X L U I U M M R
G P T A T P O X S B G E S
E B A Y N P X G L E L F V
R P N V I E G N F B L L J
Supercomputers are very expensive and state-of-the-art computers with extremely high processing speeds. They are mostly used for solving scientific and engineering problems. Unlike personal computers, supercomputers are designed to work on many tasks at the same time. There are two main parts in a supercomputer; a processor (CPU) and the memory. The CPU carries out instructions, and the memory stores these instructions as well as the outcomes of these instructions. In fact, they work just like regular computers but with an ability to handle things and store things at a much faster pace when compared to regular computers.

The first supercomputer was called the Colossus. It was used by the British to crack German codes during World War II. The Colossus was able to read 5,000 characters per second. This might sound impressive but is nothing when compared to the fastest supercomputer today which can complete more than 90 quadrillion (90,000 trillion) operations per second! This super machine is called the Sunway TaihuLight and was built in China. Supercomputers are measured by their processing speed in terms of petaflops. One petaflop is one quadrillion operations per second.

Supercomputers are used for many things in our society. They are built for specialized applications that require extreme amounts of calculations. For example, weather forecasting, securing military systems, nuclear energy research, petroleum exploration and other scientific fields.

**TOP 5 SUPERCOMPUTERS**

In November 2017

<table>
<thead>
<tr>
<th>Name</th>
<th>Country</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Sunway TaihuLight</td>
<td>China</td>
<td>93 petaflops</td>
</tr>
<tr>
<td>2) Tianhe-2</td>
<td>China</td>
<td>33.8 petaflops</td>
</tr>
<tr>
<td>3) Piz Daint</td>
<td>Switzerland</td>
<td>19.5 petaflops</td>
</tr>
<tr>
<td>4) Gyoukou</td>
<td>Japan</td>
<td>19.1 petaflops</td>
</tr>
<tr>
<td>5) Titan</td>
<td>United States</td>
<td>17.5 petaflops</td>
</tr>
</tbody>
</table>
Exercise 18: Answers the questions.

1) What is a supercomputer?

3) What is a petaflop?

2) What are supercomputers used for?

4) What was the first supercomputer and why was it built?

Exercise 19: Unscramble the words. Hints are given

1) ROPSCSOR.E ___________ ___________
An important component of a supercomputer.

4) NCAHI ___________
Where is the fastest supercomputer located?

2) APPLEFTO ___________ ___________
A unit of computing speed.

5) EINCESC ___________ ___________
Supercomputers are used in the field of .......

3) OSUCSLOS ___________ ___________
The first supercomputer.

6) ERMMOY ___________
A hardware component that stores data.
Charles Babbage (1791 – 1871)
Charles Babbage was an English mathematician who invented the first mechanical computer that eventually led to more complex designs. Babbage is often called "the father of computing".

Henry Edward Roberts (1941 – 2010)
Henry Edward Roberts invented the world’s first successful personal computer in 1975, called the Altair 8800. He is also known as "the father of the personal computer".

Steve Jobs (1955 – 2011)
Steve Jobs is the founder of Apple Inc. He is credited all over the world for creating innovative products, such as the iPhone and the iMac.

Tim Berners-Lee (1955 – present)
Tim Berners-Lee invented the World Wide Web in 1989. He was a software engineer at CERN, a physics laboratory in Switzerland. In 1980, Berners-Lee first shared his idea of a world-wide system, based on the concept of ‘hypertext’. This system would enable scientists all over the world to share information with each other.

Bill Gates (1955 – present)
Bill Gates founded Microsoft in 1976 and developed an operating system for personal computers. The most famous product of Microsoft is Windows, the most popular operating system in the world.

Exercise 20: Choose the best answers for the questions below.

1) Who invented the Internet?
   a. Steve Jobs  
   b. Tim Berners-Lee  
   c. Bill Gates  
   d. Charles Babbage

2) Who became famous for creating a popular operating system?
   a. Bill Gates  
   b. Henry Edward Roberts  
   c. Steve Jobs  
   d. None of the above

3) The iMac and MacBook are products of .......
   a. Microsoft  
   b. IBM  
   c. Google  
   d. None of the above

4) Who is known as the “Father of the PC”?
   a. Henry E. Roberts  
   b. Steve Jobs  
   c. Bill Gates  
   d. Charles Babbage

5) Who created the first computer that was available for the general public?
   a. Henry Edward Roberts  
   b. Steve Jobs  
   c. Bill Gates  
   d. Charles Babbage

6) Which of the following statements is false?
   a. Charles Babbage was a scientist.  
   b. Tim Berners-Lee invented the Internet for ordinary people.  
   c. Steve Jobs built the Apple 1.  
   d. Charles Babbage invented the computer.
Exercise 21: Write the names of the images and find the hidden word.

1)  
2)  
3)  
4)  
5)  
6)  
7)  
8)  
9)  
10)  
11)  

Answer:  

Exercise 22: The words below are chopped in half. Find the pieces that fit together.

1)  
2)  
3)  
4)  
5)  
6)  

MONI  BLUE  CRAFT  WARE
DOWN  MINE  SOFT  WIN
DOWS  TOOTH  TOR  LOAD
Exercise 23: Unscramble the words. Hints are given below.

1) PPTOLA       ___ ___ ___ ___ ___
A portable computer.

2) CERSNE       ___ ___ ___ ___ ___
Another word for a display.

3) KGIHANC       ___ ___ ___ ___ ___
Using a computer to break into another computer.

4) OECROPSR     ___ ___ ___ ___ ___ ___ ___
Another word for CPU.

5) RORSWBE      ___ ___ ___ ___ ___ ___
A program used to surf the Internet

6) OFRASEWT     ___ ___ ___ ___ ___ ___ ___
Programs that are installed on a computer.

7) TAGQDE       ___ ___ ___ ___ ___ ___
An electronic ‘toy’.

8) STIRET       ___ ___ ___ ___ ___ ___
A video game with blocks.

9) GIPHIPNS     ___ ___ ___ ___ ___ ___ ___
Illegally getting information from Internet users.

10) EDOMM       ___ ___ ___ ___ ___
A device used to connect to the Internet.

11) HAINC        ___ ___ ___ ___ ___ ___
Where is the world’s fastest computer located?

12) WMACEB       ___ ___ ___ ___ ___ ___
A camera that is connected to the Internet.

Exercise 24: Choose the best answers for the questions below.

1) What is a processor?
   a. The ‘brains’ of a computer.
   b. The memory of a computer.
   c. A device to use the Internet.
   d. None of the above.

2) Which of the following is not an example of software?
   a. Microsoft Windows  b. Facebook
   c. Keyboard           d. A virus

3) Who invented the computer?
   a. Steve Jobs       b. Bill Gates
   c. Tim Berners-Lee  d. Charles Babbage

4) Who is Tim Berners-Lee?
   a. The inventor of the Internet.
   b. The CEO of Facebook.
   c. The founder of Microsoft.
   d. The ‘father’ of the Computer.

5) What is a petaflop?
   a. A virus
   b. An operating system
   c. A cyber-crime
   d. None of the above

6) What is Wikipedia?
   a. A website
   b. An encyclopedia
   c. A collection of articles
   d. All of the above

7) What is a hacker?
   a. A programmer
   b. An online stalker
   c. A gamer
   d. An online thief

8) What is Stuxnet?
   a. A virus
   b. A pop-up
   c. A hacker
   d. None of the above