Year 7 IT/Computer Science Knowledge Organiser
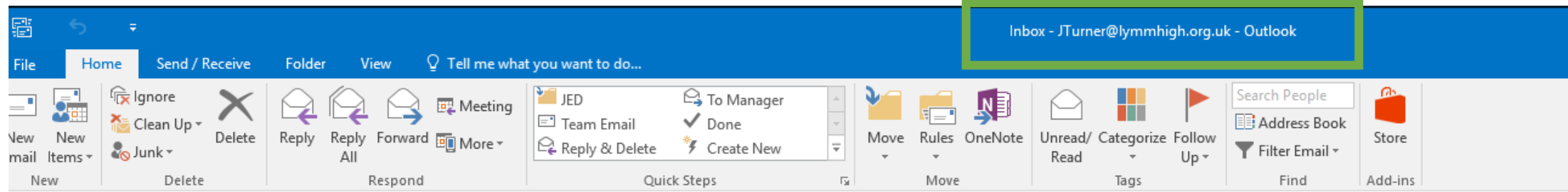
To find your email address it is at the top of the application once it is open:

Inbox - JTurner@lymmhigh.org.uk - Outlook

To access your email from home:

Google   lymm high school

Q All   🗺 Maps   🖼 Images   📰 News   🛒 Shopping   ⋮ More   Settings   Tools

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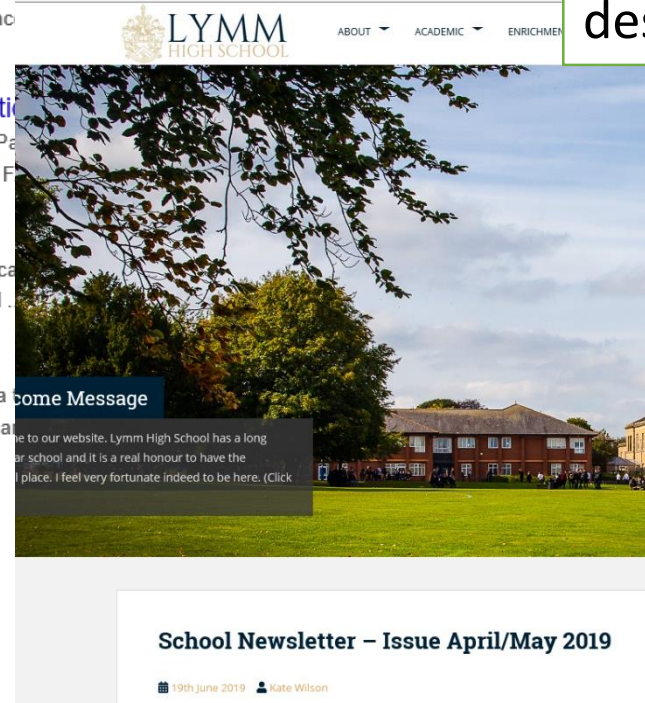
To access remote desktop from Lymm high home page go to the quick links and select remote desktop:

LYMM HIGH SCHOOL
ABOUT ▾ ACADEMIC ▾ ENRICHMEN

ome Message
to our website. Lymm High School has a long
r school and it is a real honour to have the
place. I feel very fortunate indeed to be here. (Click

School Newsletter – Issue April/May 2019
🗓 19th June 2019 👤 Kate Wilson

QUICK LINKS

Parent Communication

News

Show My Homework

Parent Pay

Email

Intranet

Remote Desktop

Governors Portal

Accessing Microsoft Office for free

If you don't have access to Microsoft Office on your computer, laptop, tablet, phone, or any digital device then don't worry!

You have **a free account** which is connected to your **school email address** and this guide tells you how to do it. Select the device that you have and follow hose instructions:

Go to www.office.com and if you're not already signed in, select **Sign in**.
Sign in with the your school email and password.
After signing in, follow the steps that match the type of account you signed in with.
Install it onto your computer.
Once done it will ask you to activate it, select activate and there you have it – Office installed.

You can use office 365 online without actually installing it onto your computer or laptop, all you need is your school email address and password, go to: https://www.office.com/apps
Click sign in, located top right.
Then you should see all you have access to
This actually saves it to the one drive rather than on your computer.
Therefore, you could access the document in school as well as home.

You will need access to the **app store** for this -
You can install the new Office app that combines Word, Excel, and PowerPoint into a single app, and introduces new mobile-centric features to view, edit and share files without the need to switch between multiple apps. Note that Office mobile app is currently available for **Android** and **iPhone only.**
Or you can install the Office apps individually on your **iPhone or iPad**:

	Key vocabulary	Definition
1	E-safety	Internet safety or online safety is trying to be safe on the internet
2	Cyber bullying	Is the use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature.
3	Animated banner	Banner that moves between text and pictures.
4	Social networking	Social networking is the use of internet-based social media programs to make connections with friends, family, classmates, customers and clients.
5	Annotate	Label the diagram or print screens saying what each part is and why you have chose that design.
6	Visualisation diagram	Diagram/plan of the product you are designing.
7	Biased	Holding an opinion that often unfairly supports one argument, eg a football fan thinking that a referee's decision was wrong because it went against their team.
8	Mobile applications	Applications designed to run on mobile devices. These can be used for creating documents, taking pictures, listening to music, playing games or finding directions
9	Unauthorised access	Using a computer system without permission.
10	File	An object on a computer that stores data, information, settings, or commands used with a computer program.
11	Folder	A way to organise computer files. A folder is a storage space that many files can be placed into to group them together and organise the computer.
12	Email	Electronic mail - a method of exchanging messages between people using electronics and email addresses.
13	Security	Protecting yourself when using something that could be harmful or dangerous to you.
14	Report	A written account or an alert of an event or situation that can be used to seek help.
15	Child line	A 24 hour counselling service for children and young people where they can get help and advice on a range of issues
16	CEOP	Child exploitation and online protection centre.
17	Downloading	Transferring data from one device or network to another.
18	Internet	A communications system that connects computers and databases all around the world.

Cyber bullying means to try to hurt someone's feelings by using technology such as the internet, email, chatrooms and texting.

Dealing with cyber bullying:
- **Don't give out personal information** in chatrooms, social websites, blogs, etc.
- **Don't tell anyone, even your best friends, your passwords**. They might be your best friend now, but what if you have an argument. They might log into your account and post really mean things and make it look like it was you.
- **Don't' respond** - If you receive any mean or threatening messages in the chatroom, text or email, don't ever respond. You might be tempted to delete the message but don't. Save it and show an adult - you might need the message to use as evidence against the person who sent it.
- **Contact the website -** If you find mean things have been said about you on a website, for example, Facebook, you can ask to have the comments removed. The same is true if you find out that photographs or videos have been posted without your permission.
- **Tell someone**
- Don't suffer in silence. If you are being bullied then tell your parents. If you don't feel that you can talk to them then tell a teacher or an adult that you trust. You mustn't keep it to yourself because if you do, the bully has got exactly what they want.

E-safety Rules
- Never give out your password – this doesn't matter who asks!
- Don't give out your contact details
- Don't download any software without permissions!
- Respect people's privacy
- Copying and pasting could be breaking the copyright law – make sure you always reference where you got that information from!

Chatrooms: The main reason that your parents and teachers worry about you using chatrooms is because you can't always tell who you are talking to. Most of the time, someone you chat to will be genuine. You can have a conversation with them, have a laugh, tell each other about things and over time build up a real friendship.

But, you do need to be aware that not everyone in a chatroom is really who they say they are.

Saying safe in chatrooms:
- Tell your parents if you are planning to use a chatroom.
- Use a nickname, so your real identity remains protected.
- Never give out personal details!
- Never send your picture to anyone!
- Always stay in the public chatroom
- Don't meet up in real life – if you do really want to arrange to meet someone always take a responsible adult.
- This shouldn't be a problem because you won't give anyone your email address, will you? But, if for some reason you did give it out and you find someone is sending you emails with mean or rude pictures, don't open them and tell your parents immediately

CLICK CEOP
Internet Safety

Key Vocabulary	Description
Worksheet	A worksheet is a single sheet (page) of rows and columns in a workbook. A worksheet consists of all of the cells on that single sheet.
Workbooks	A workbook is a collection of worksheets which are stored together in a single file and given a single name
Row	A row is the range of cells that go across (horizontal) the spreadsheet/worksheet.
Column	A column is a range of cells that go down (vertical) in a spreadsheet/worksheet.
Cell	A cell is an individual box within a worksheet.
Spreadsheet	Software application used to list, analyse, and perform calculations on data
Formula	Mathematical expression, such as adding or averaging, that performs calculations on data in a spreadsheet
Function	Predefined formula in a spreadsheet
Equal sign	Identifies the cell as containing a formula that the computer needs to calculate
Spreadsheet modelling	Computer models of mathematical data, such as budgets, are usually done using a spreadsheet application that processes and performs calculations on the data entered by the user.
Data	Values, typically letters or numbers.
Information	Data that has meaning, not just a number or a letter.
Merging cells	It combines the selected cells together to form one big cell
Active cell	This is the cell you are in when you click on it.

Spreadsheets

Comparison Operator	Description
>	Greater than
<	Less than
=	Equal to
>=	More than or equal to
<=	Less than or equal to
<>	Not equal to

Function	Description
=SUM(A1:A7)	This would add up the cells from A1 to A7
=AVERAGE(A1:A7)	This would work out the average of cells A1 to A7
=MIN(A1:A7)	This would find the lowest value from cells A1 to A7
=MAX(A1:A7)	This would find the highest value from cells A1 to A7

Operator	What does it do?
+	Addition
-	Subtraction
*	Multiply
/	Division
All formula must start with =	

Advantages of using spreadsheets

- Formulae can be used to instantly recalculate totals. For example, if the builder changed his call-out charge, the total cost would be instantly recalculated taking the change into account.
- You can carry out "what if?" investigations. For example, the grocer could increase his prices to see the effect on sales and the builder could increase his hourly charge to see the effect on his daily total.
- The information can be presented in different ways. For example, the grocer could produce a graph of fruit and vegetable sales by choosing the ranges A2:A8 and E2:E8 in order to make the graph.
- It is easy to make these changes, save your work and print it out again.

Why use computer/spreadsheet models?

As well as financial modelling, spreadsheet software can be used for many other kinds of computer model:
- modelling supermarket queues
- modelling the stresses which will be borne by a new bridge
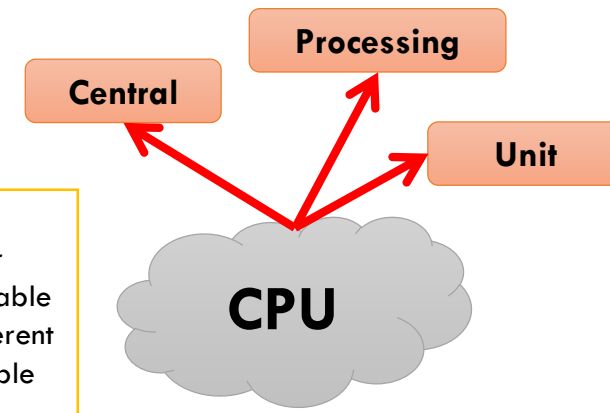- modelling traffic flow in a new road system

Computer models are cheaper to set up than alternative methods that could be used to predict what will happen in a system, e.g. building a prototype. Other benefits include being able to:
- make alterations and quickly see the outcomes
- repeat tests several times over
- learn from "what if?" scenarios
- model dangerous situations safely

Literacy – Key Words

CPU	Central Processing Unit – the brain of the computer.
RAM	Random Access Memory – where programs are loaded when they are in use.
I/O Devices	The input devices send data to the CPU, the output devices receive information from the CPU.
Hard Drive	The computer's long term storage for programs and files
Hard Drive (Hard Disk)	This is the long term storage for programs and files.
Output device	A device which receives information from the CPU (e.g. monitor, speakers etc)
Input Device	A device which sends data to the CPU (e.g. mouse, keyboard etc)
Motherboard	Main circuit board – components are connected to this
Process	Decisions and Calculations made by a computer

The CPU, RAM and I/O Devices

Double Click Icon to Open Program.

1. Instruction to open program sent to the CPU.

2. CPU sends request for program to be loaded from hard drive onto the RAM.

3. Hard drive loads program onto the RAM.

CPU now ready to work with the program!

A computer is a type of machine. It doesn't have a brain like us and it can't think or have ideas, but it can follow stored instructions and do lots of useful things.

CPUs currently run at about 3 Gigahertz - that means 3 Billion Fetch-Decode-Execute cycles per second

Clock

Speed measured in Hertz

Instructions Processed per second = Cycles per Second -

Faster the CPU, the better the performance

Assessment topics – what you need to know

Explain what a computer is	Explain what clock speed is and explain the clock speed of a modern day CPU.
Explain what an input and output device is and give examples of them.	Explain what a CPU is.
Explain how the CPU works	Identify a range of components of a PC, e.g. motherboard, RAM, hard drive, etc. Explain their purpose.
Explain how input devices, CPU, hard drive, RAM and output devices work together.	Explain what happens during the process of opening a program – Fetch, decode and execute.

Central → **Processing** ← **Unit**

CPU

A general purpose computer is a computer that is designed to be able to carry out many different tasks. A PC is an example of a general purpose computer.
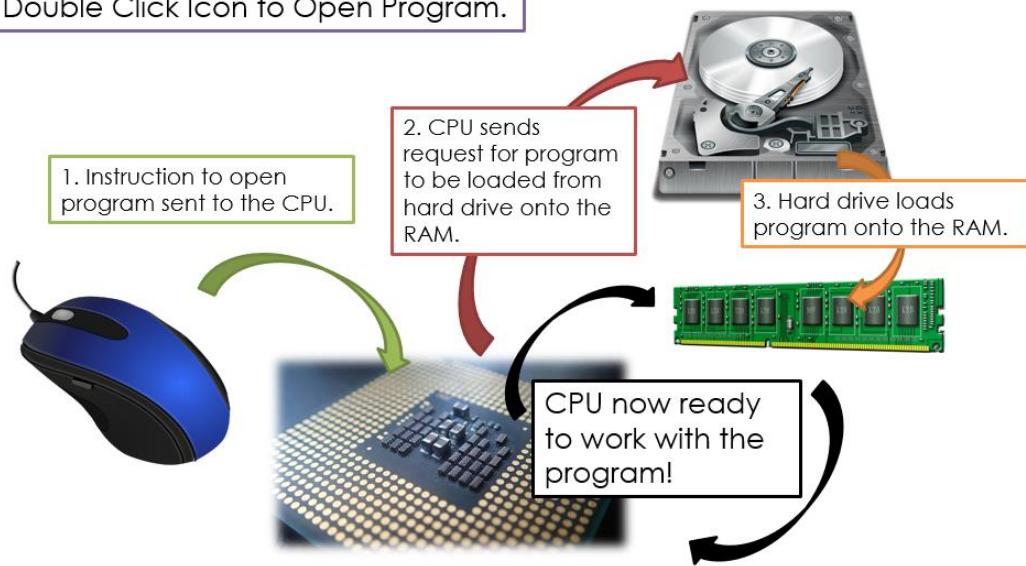
The CPU is the most important hardware component in a computer. It has two main functions:
- to process data and instructions
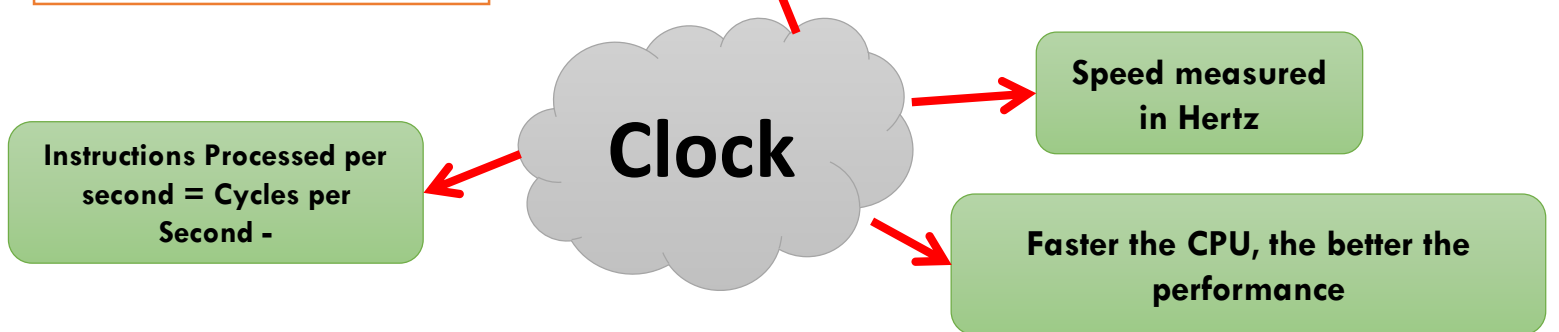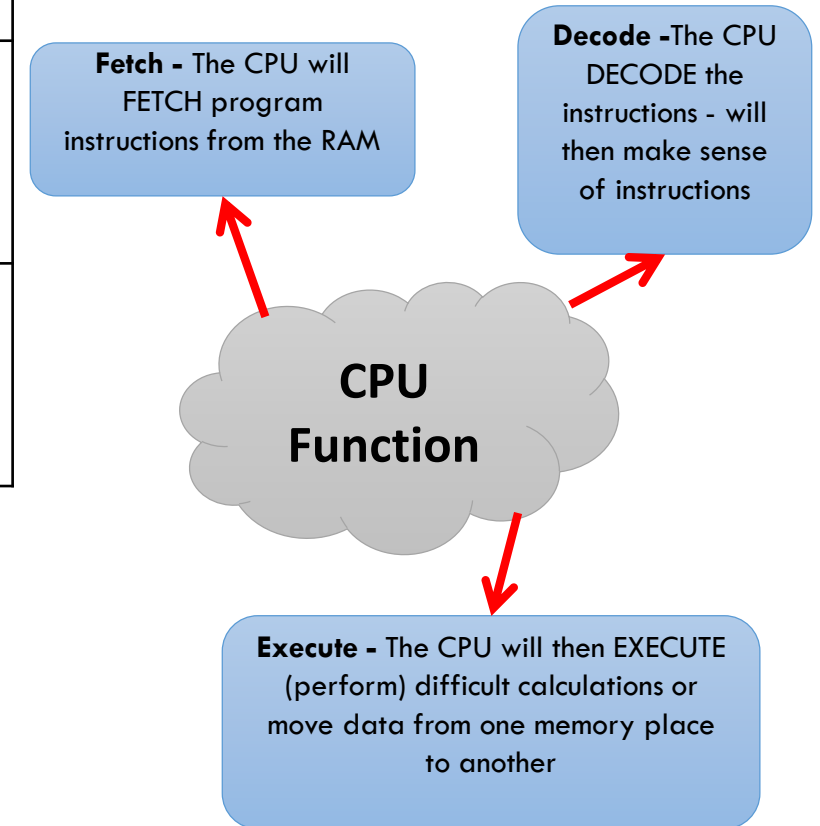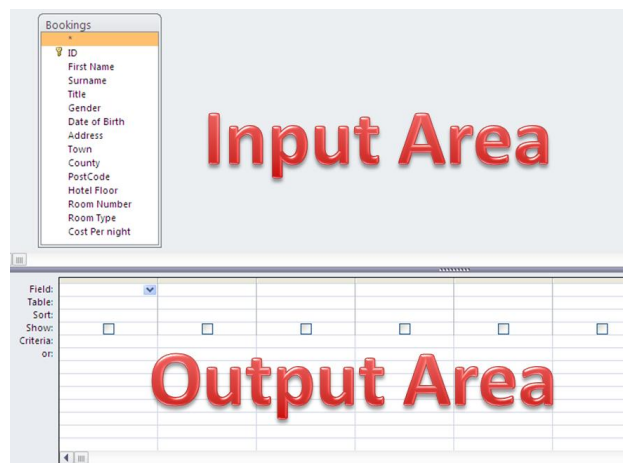- to control the rest of the computer system

Understanding Computers

Fetch - The CPU will FETCH program instructions from the RAM

Decode -The CPU DECODE the instructions - will then make sense of instructions

CPU Function

Execute - The CPU will then EXECUTE (perform) difficult calculations or move data from one memory place to another

Database

Field

Record

Input Area

Output Area

	Advantages	Disadvantages
Paper based	• Can carry them around with you. • Don't need training to learn how to use them. • Cheap to set up.	• Can be lost. • Can't easily make back-up copies. • Hard to update or make changes.
Computerised	• Can easily make back-up copies. • Can easily make changes. • Can easily sort data into order e.g. Alphabetic. • Can search for particular records very quickly.	• Can be expensive to set up if you have to get a professional to make it. • If there is a power-cut, you can't use it. • You need to have a computer.

Key terms	Definition
Flat file database	When a database has only one table and everything is stored in that one table it is called a "flat-file database".
Relational database	Many databases which are used in organisations are known as "relational databases". This means that the database contains more than one table and these are linked together.
Unique/primary field	A "Primary Key" is a field which allows the user to uniquely identify a record in a table.
Foreign Key	A link to a primary key in a relational database table.
Entity	An object, eg a person or film. In databases, entities are the subjects whose attributes are stored as records.
Query	A search or question performed inside a database.
Field	One single data cell is called a field and this will be located at the top of the table.
Record	All the fields put together make a record – this is all the data held about a person or thing.
Table	All records are stored together as a table.

Data Types		
Type	**Examples**	**Description**
Text	Smith, Red, PE23 5AW	Strings of letters or a mixture of letters and number or just numbers that do not need to be used in calculations
Number	1, 23.67, -0.23	Numbers can include positive or negative numbers and decimal places
Date/Time	15/2/2001, 12:45 am	Dates in many different formats or time values
Currency	£45.99	Numbers including the symbol for monetary values
Boolean	Yes or No, True or False	Values which are either Yes or No, True or False or On or Off
AutoNumber	1,2,3	Generates a number automatically

Notes: