

Yr8 Spreadsheets (Knowledge Organiser & Key Term List)

Name of Program: Microsoft Excel

Uses of Spreadsheets:

- 1 Payroll, calculating wages from hours worked and hourly rates, less taxes
- 2 Profit and Loss, calculating profit or loss from monthly sales data for a business

All calculations begin with: an equals symbol =

SUM: Adds a range of cells together

Example: = SUM (A1 : A8)

AVERAGE: Finds the mean of a range of numbers

Example: = AVERAGE (A1 : A8)

MIN: Finds the lowest number in a range of cells

Example: = MIN (A1 : A8)

MAX: Finds the highest number in a range of cells

Example: = MAX (A1 : A8)

COUNTIF: Finds the frequency or mode of a number in a given range of cells

Example: = COUNTIF (A1 : A8 , "A")

Key F4 is used to: Produce an absolute cell reference that doesn't change when a calculation is copied to other cells, e.g. =\$A\$1

Key F11 is used to: Automatically produce a column chart based on highlighted data.

Key Terms Check List:

Function - Calculation stored in Excel, used by referring to name such as SUM

Formula— Calculation manually entered typically using mathematical operators like + or *

Excel—Name of Microsoft's Spreadsheet program

Cell—a box on a spreadsheet page (starts with a letter, like A1 or D4)

Worksheet—a page in a Spreadsheet

Tab Key—a key used to move right across a spreadsheet row

Enter Key—a key used to move down a spreadsheet column

Chart—a graphical representation of worksheet data

Key Skills Check List:

I can name the program used for spreadsheets at school

☐

I can identify a cell address on a worksheet

☐

I know what happens when I press keys like Tab and Enter

☐

I know what all calculations begin with

☐

I can write SUM, MAX, MIN, AVERAGE and COUNTIF functions

☐

I can write arithmetic formulas using +, -, * and /

☐

I can replicate cell data using the drag method

☐

I can produce a chart from specific worksheet data

☐

I can widen a column

☐

Benefits of using computers to perform spreadsheet calculations :

Spreadsheets save time when producing worksheets with numerous calculations, the auto-recalculate feature means the spreadsheet will automatically recalculate when data changes. Graphical representations of worksheet data can quickly be produced using charts to make the worksheet data more easily understood and interpreted. Data can be formatted manually but also automatically to highlight changes or noteworthy elements of large data sets. Data can be exported to other Microsoft programs to help in data entry or analysis.

Yr8 Python (Knowledge Organiser and Key Term Checklist)

Python Data Types:

Text is known as a **STRING** data type

Whole Numbers are known as **Integers**

Decimals are known as **Float** Or **Real**

True or False is known as **Boolean**

Variables: What is a variable?

A data store, that uses an identifier, and the data can change (basically a store to hold data in the program).

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Python Operators (what they mean):

=	assign (put data in a variable)
==	compare or equal to
!=	not equal to
<	less than
>	more than
*	multiply
/	divide

/ divide

Key Terms Check List:

- Shell**—Where Python program are run and tested
- String**—text data that is encapsulated in apostrophes e.g. 'Hello'
- Integer**—a whole number
- Float**—a decimal place number
- Variable**—a memory data store that holds data for use in the program
- Syntax Error**—an error made when typing command or code in a program
- Assign**—when data is put into a variable e.g. name=input(.....) or age=16
- Input**—a way of collecting data from a user to store in a variable.

Input—a way of collecting data from a user to store in a variable.

Syntax Errors (spot the error):	
name=input('Enter your name:)	Missing an apostrophe after name:
town==input('Place of birth? ')	Don't need two equal signs
age=int(input('Enter a number: ')	Missing second close bracket at the end
num=input('Enter a number: ')	Missing INT as it is asking for a number
x+y=z	Wrong way round, should be z=x+y
print('Hello'name)	Missing a comma before name
print=('hello Bob')	Don't need the equals sign
If age=6:	Missing double equals sign should be if age==6:

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Python Colour Coding: (Orange, Green, Purple)

String text is the colour **green**

Command words like Print and Input are the colour **purple**

Command words like IF and While are the colour **orange**

Command words like IF and While are the colour orange

Key Skills Check List:

I can start Python, enter code, save it, and run a program	☐
I can identify syntax errors in programs	☐
I can describe the four data types used in Python	☐
I can explain what a variable is and give an example	☐
I can explain the difference between = and ==	☐
I can explain the difference between < and >	☐
I can write a program that inputs and outputs data	☐
I can write a program that uses IF statements	☐
I can write a program that uses a basic loop	☐
I can correct syntax errors in my programs	☐
I can write at least one program where I do not create any errors	☐
I can test my programs using suitable test data	☐
I can use Casting to change one data type to another	☐

I can use Casting to change one data type to another

Yr8 Computer Systems (Knowledge Organiser & Key Term List)

Hardware & Software Definitions

Hardware: physical devices connected to or found inside a computer

Input Devices: hardware that enables instructions or data to be sent to the computer, specifically the CPU. Examples include: keyboard, mouse, touch screen, camera and so on.

Output Devices: hardware that produces information from data that is processed by the CPU. Examples include information displayed on the screen, or on a printed page, or as sound from speakers.

Software: programs that contain instructions that tell computers what to do.

Operating System: main software program that provides the interface between humans and computers. Microsoft Windows is an example.

Application Software: programs that provide specific functions, Microsoft PowerPoint is a program that provides the ability to create Presentations.

CPU: Processor- Processes all instructions (The brain of the computer)

RAM: Memory—Stores programs and data currently being used by the computer

Storage: Stores programs and data not currently being used by the computer.

Networking Definitions

Internet: The physical connections of networked computers around the world, specifically a number of LANs connected to form a WAN. The internet is the world's largest WAN.

World Wide Web: The information provided in web servers found on the internet, users access this information through web pages. The WWW is the world's biggest library.

WAN: Wide Area Network. Where small independent networks are joined together to form a large open network accessible by all those that have a connection to it.

LAN: Local Area Network: A small independent network only accessible by those in an organisation. Your school network is an example of a LAN.

Pioneers

Ada Lovelace: first female computer programmer

Charles Babbage: 'father of the computer', developed the 'difference engine' the first automatic calculator

George Boole: invented Boolean mathematics and the precursor to Binary used by all computers today

Vint Cerf: developed the Internet

Tim Berners-Lee: developed the World Wide Web

Bill Gates: developed Microsoft and Microsoft Windows, but originally DOS the first operating system, found on all home computers in the 1980's, until Windows took over.

Key Skills Check List:

I can explain the difference between Hardware and Software

☐

I can explain the difference between the Internet and the World Wide Web

☐

I can explain the difference between a network WAN and a LAN

☐

I can state 4 input devices

☐

I can state 4 output devices

☐

I can explain the purpose of the CPU, Memory and Storage devices

☐

I can identify a computing pioneer and explain why they are a pioneer

☐

I can identify a computing career

☐

I can explain the difference between Computer Science and IT

☐

Pioneers & Careers :

Pioneers are people who develop technology for the benefit of the intended users. Humanoid robots like Honda's Asimo are examples of this type of pioneering development. The intention of Asimo is to provide labour savings for us at home and to do jobs most people prefer not to do.

Careers are available that provide opportunities for you work in Computer Science or IT, see www.careerpilot.org.uk

Yr8 HTML (Knowledge Organiser and Key Term Checklist)

HTML stands for:

Hyper Text Markup Language

Basic HTML Structure (fill in the blanks)

< html >	This starts the HTML code
< head >	This starts the head section
</ head >	This ends the head section
< body >	This starts the body section
</ body >	This ends the body section
</ html >	This ends the html code

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`</ head >` This ends the **head** section

< body > This starts the body section

HTML Commands (what do they do):

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`<body bgcolor=#005534>` sets the background colour of the webpage

`<center>` centers the object or text on the webpage

`<img src='pic1.jpg'>` inserts an image called pic1 which is in jpg format

`imgsrc = "pic.jpg"` inserts an image called `pic` which is in `jpg` format

`<a href= page2.html >` create hyperlink to page2, so it links the pages together

<p> create a new paragraph, like pressing enter twice in Word

`<marquee>` create scrolling text that runs across your screen right to left

create scrolling text that runs across your screen right to left

`<hr>` inserts a horizontal rule or line across your page

Key Terms Check List:

- HTML—HyperText Markup Language
- HEAD—Header area of HTML code, used for advertising commands to promote webpage
- BODY—Body area of HTML code, used to display text and other objects onto the webpage
- HEXADECIMAL—a special type of number that uses letters to represent web page colours
- JPG—a type of picture, pictures come in different formats, JPG is one type
- HYPERLINK—a word or phrase you can click to take you to another webpage or website
- FORWARD SLASH— Looks like this / used to end or turn off HTML commands
- BROWSER—Your internet browser, typically Google Chrome or Microsoft Edge

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When saving web page code what must you always add to the end of the filename?

[.html](#)

To refresh a webpage in your browser you must press **F5**

Key Skill Challenge

Key Skills Check List:

I can start Notepad ++, enter code, and save the code ☐

I can create a page with a title, line, scrolling text, and images

I can create a page using background colours and text colours

I can create a link to an external website

I can create links to link pages together to make a website

I can create a basic table with rows and columns.

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