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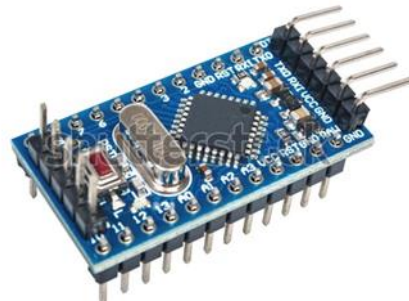
Grade	8	Subject	DT	Lesson Number	1	Week number	1
Unit	Date		Time		Page number		
3	WC: 12/01/20		45 minutes		SB 2-9		
Equipment required:				<u>Learning objectives</u>			
Textbook pen/pencil				Complete activities 1 and 2.			
Keywords				Computer, embedded system, configuration, components, peripherals, chipset, microprocessor, execute, integrated circuit, microcontroller, automated,			
<u>Starter/Introduction activity</u>							
5 mins	Regroup class after Christmas break. Introduce students to the Grade 8 book which will be all about computers and programming . Explain to students that this book is linked to last terms book. Talk through objectives for Term 2 and what the end result/project of the term will be. Introduce ' Unit 3: Fun with Computers ' and give students a brief overview of the unit.						
<u>Main</u>							
5 mins	Begin talking through section ' What is a computer? ' and briefly describe the different types of computers.						
10 mins	Move onto describing what embedded systems are and what non-embedded computers are, then, complete Activity 1 (AB pg 6) by ticking true or false with the statements.						
10 mins	Move onto ' Central Processing Unit CPU ' and describe control units and Arithmetic Logic Unit (ALU) .						
10 mins	Next, move onto ' Memory ' and discuss what microprocessors and microcontrollers are and then complete Activity 2 (AB pg 7) .						
<u>Plenary</u>							
5 mins	Summarise lesson, recapping the Learning objectives and the key vocabulary used throughout.						
<u>Assessment focus</u>	Complete activities 1 and 2.						
<u>Learning curve</u>	The entire course plus specific instructional videos are available on Learning curve via this link. Click here to open the link.						

What is a Computer?

Activity 1: True or False

	Statement	True/False
1	A computer is an electronic device that processes data.	True
2	A supercomputer can be found in a watch or phone.	False
3	The central processing unit is made up of many microchips that are located on the motherboard.	True
4	Memory is not important in a computer.	False
5	Computing systems and devices have input, control and output units.	True

Activity 2: Microprocessor and Microcontroller



Describe the difference between a microprocessor and a microcontroller.

Individual responses

The microprocessor is an integrated circuit that contains all the functions of a central processing unit (CPU) of a computer. It is used to run the tasks involved in computer processing.

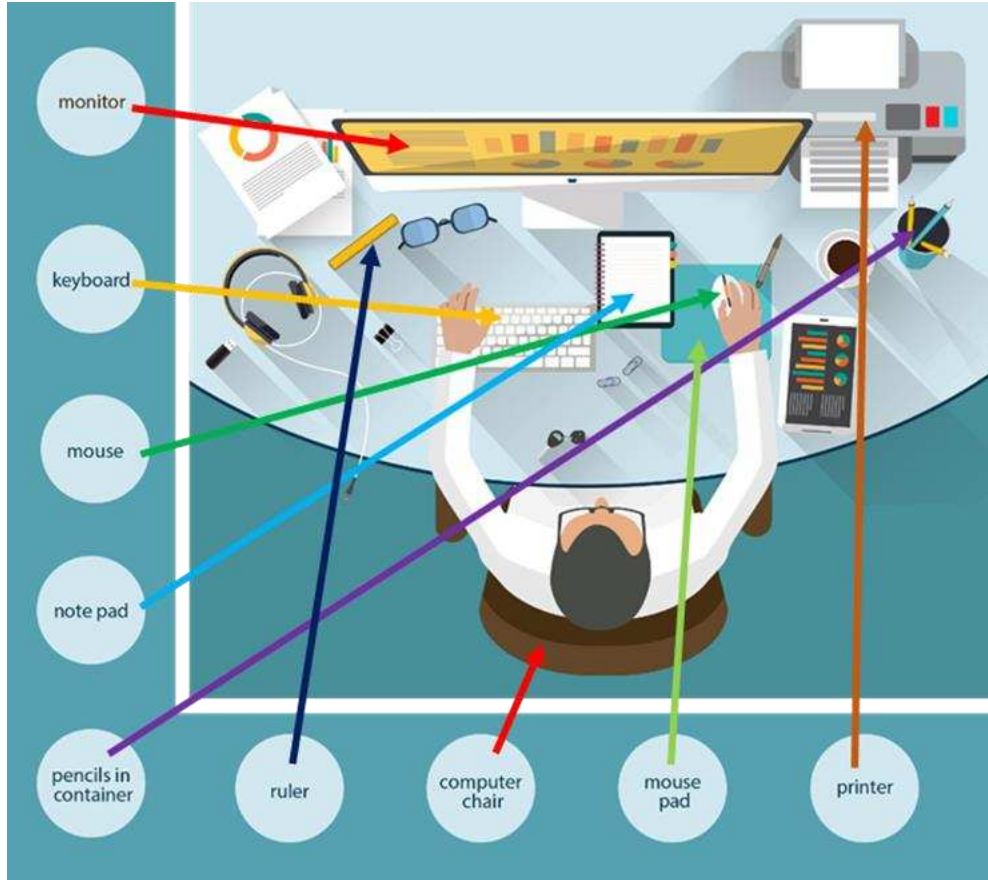
A microcontroller is a small computer on a single integrated circuit that is designed to perform a single specific task.

Grade	8	Subject	DT	Lesson Number	2	Week number	1
Unit	Date		Time		Page number		
3	WC: 12/01/20		45 minutes		SB 10-18		
Equipment required:				<u>Learning objectives</u>			
Textbook pen/pencil				Complete activities 3 and 4.			
Keywords				computer science, computational systems, critical thinking, computer programs, STEAM, external, troubleshoot, flow diagram			
Starter/Introduction activity							
10 mins		Recap the previous lesson. Move onto the next section ' What is computer science? ' and briefly describe the job role of a computer scientist.					
Main							
10 mins		Next, describe what computational thinking is and the benefits of learning computer science. Move onto discussing how computer science is a STREAM subject and how it shares elements with Engineering, Mathematics, Science, Art and Technology .					
10 mins		Move onto ' Key Concepts in Computer Science ' and begin discussing computing systems. Discuss the different types of hardware and software and then complete Activity 3 (AB pg 8) by matching the name of with the image.					
10 mins		Finish off the lesson by discussing input, output and storage , then complete Activity 4 (AB pg 9) by matching the image with the process.					
Plenary							
5 mins		Summarise lesson, recapping the Learning objectives and the key vocabulary used throughout.					
<u>Assessment focus</u>		Complete activities 3 and 4.					
<u>Learning curve</u>		The entire course plus specific instructional videos are available on Learning curve via this link. Click here to open the link.					

Computing Systems

Activity 3: Name the Items on the Desk

Match the items in the picture with the correct word.









Page Break

Activity 4: Input, Output and Storage

Collecting and exchanging data involves input, output, storage, and processing.

Match the image with the process. The first one is done for you.

 <small>www.shutterstock.com - 370595584</small>	 <small>www.shutterstock.com - 87821075</small>	 <small>www.shutterstock.com - 125010903</small>
Input	Output	Input
 <small>www.shutterstock.com - 13269882</small>	 <small>www.shutterstock.com - 36004038</small>	 <small>www.shutterstock.com - 130024332</small>
Storage	Output	Storage

		
<i>Input</i>	<i>Output</i>	<i>Output</i>
		
<i>Output</i>	<i>Input</i>	<i>Storage</i>

Grade	8	Subject	DT	Lesson Number	3	Week number	1
Unit	Date		Time		Page number		
3	WC: 12/01/20		45 minutes		SB 18-23		
Equipment required:				<u>Learning objectives</u>			
Textbook pen/pencil				Complete activities 5 and 6.			
Keywords				network, internet, web browser, protocols, The Uniform Resource Locator (URL), passwords, malware, virus, worm, spyware, phishing, ransomware, cybercrime,			
<u>Starter/Introduction activity</u>							
10 mins	Recap the previous lesson. Move onto Networks and the Internet and discuss the meaning of network, internet, web browser and protocols .						
<u>Main</u>							
50 mins	Move onto the Uniform Resource locator (URL) and describe what each section of a URL represents. Complete Activity 5 (AB pg 10) by listing 5 strategies that are suggested for cybersecurity.						
15 mins	Move onto Malware and discuss the different types and then complete Activity 6 (AB pg 12) by matching the name with the correct definition.						
<u>Plenary</u>							
5 mins	Summarise lesson, recapping the Learning objectives and the key vocabulary used throughout.						
<u>Assessment focus</u>	Complete activities 5 and 6.						
<u>Learning curve</u>	The entire course plus specific instructional videos are available on Learning curve via this link. Click here to open the link.						

Networks and the Internet

Activity 5: Networks and the Internet

There are protocols and rules about how information is sent between computers. It is important for you to understand these protocols, rules and cybersecurity for safe and secure data transmission.

List the five strategies that are suggested for cybersecurity. *Order may differ.*

1	<i>Always ensure you have strong passwords</i>
2	<i>Do not use the same password for every device</i>
3	<i>Keep passwords secret</i>
4	<i>Make backup copies of material on external storage devices</i>
5	<i>Clear a storage device before it is reused</i>

Malware

Activity 6: Malware

Match the malware with the correct description.

ransomware	virus	phishing	spyware	worm
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<i>virus</i>	a piece of code which can copy itself and most times, have a bad effect on your computer, such as corrupting the system or destroying data
<i>spyware</i>	an unwanted software that gets into your computing device, stealing your internet usage data and sensitive information; you do not always know this is happening
<i>worm</i>	a standalone malware computer program that copies itself to spread to other computers; on most occasions, it uses a computer network to spread itself, relying on poor security on the target computer to gain access
<i>ransomware</i>	is installed covertly on a device and threatens to damage the computer unless a sum of money is paid
<i>phishing</i>	is when a bad individual or group of individuals scam users; they do this by sending e-mails or creating web pages that are designed to get a person's online bank, credit card, or other login information

Grade	8	Subject	DT	Lesson Number	4	Week number	2
Unit	Date		Time		Page number		
3	WC: 19/01/20		45 minutes		SB 24-25		
Equipment required:				<u>Learning objectives</u>			
Textbook pen/pencil				Complete activities 7.1 and 7.2.			
Keywords				manipulate,			
<u>Starter/Introduction activity</u>							
10 mins	Recap the previous lesson. Move onto Data and Analysis and discuss the ways data can be stored.						
<u>Main</u>							
10 mins	Complete Activity 7.1 (AB pg 13) by listing 5 ways that data can be stored.						
20 mins	Now, complete Activity 7.2 (AB pg 14) by choosing and explaining 5 different ways for sorting your information.						
<u>Plenary</u>							
5 mins	Summarise lesson, recapping the Learning objectives and the key vocabulary used throughout.						
<u>Assessment focus</u>	Complete activities 7.1 and 7.2.						
<u>Learning curve</u>	The entire course plus specific instructional videos are available on Learning curve via this link. Click here to open the link.						

Data and Analysis

Activity 7.1: Data and Analysis

Memory refers to the part of a computer system that stores data for use by the CPU. When data is stored and processed by a computing device it is called information.

Name five ways data can be stored. *Answers may vary.*

1	<i>images</i>
2	<i>text documents</i>
3	<i>audio files</i>
4	<i>software programs</i>
5	<i>video files</i>

Activity 7.2: Data and Analysis

Often the same data can be presented in different ways to show a particular piece of information.

You have been doing a project on vehicle use in Dubai and have collected a great amount of information that includes brands, types, economy and much more. Think about all of the possible ways you could sort your information.

Choose and explain 5 different ways for sorting your information.

1	<i>Answers will vary, e.g. colour, size, brand, tables, images ...etc</i>
2	
3	
4	
5	

Grade	8	Subject	DT	Lesson Number	5	Week number	2
Unit	Date		Time		Page number		
3	WC: 19/01/20		45 minutes		SB 26-28		
Equipment required:				<u>Learning objectives</u>			
Textbook pen/pencil				Complete activity 8.			
Keywords				program, language, Java, C++, Python, algorithms,			
<u>Starter/Introduction activity</u>							
5 mins		Recap the previous lesson.					
<u>Main</u>							
15 mins		Then, move onto Algorithms and Programming and discuss the purpose of programming languages and what algorithms are used for.					
15 mins		Move into the Activity book now and reintroduce students to Python . Talk through ' Running Python ', ' Indentation and comments ' and then complete Activity 8 by selecting which statements are true and which are false.					
<u>Plenary</u>							
5 mins		Summarise lesson, recapping the Learning objectives and the key vocabulary used throughout.					
<u>Assessment focus</u>		Complete activity 8.					
<u>Learning curve</u>		The entire course plus specific instructional videos are available on Learning curve via this link. Click here to open the link.					

Algorithms and Programming

Activity 8: True or False

	Statement	True/False
1	Python is a programming language that runs on a single platform and you need to buy a licence to use it.	<i>False</i>
2	IDLE is a tool that can be used to run the Python codes you write on your computer.	<i>True</i>
3	When a Python file is created, any file extension can be used.	<i>False</i>
4	A Python program can be as short as a one line of code.	<i>True</i>
5	There are many Python IDEs available and programmers use what they like.	<i>True</i>

Grade	8	Subject	DT	Lesson Number	6	Week number	2
Unit	Date		Time		Page number		
3	WC: 19/01/20		45 minutes		AB 20-21		
Equipment required:				<u>Learning objectives</u>			
Textbook pen/pencil				Complete activity 9 and 10.			
Keywords				indentation,			
<u>Starter/Introduction activity</u>							
5 mins		Recap the previous lesson on 'algorithms and programming' and 'indentations and comments'.					
<u>Main</u>							
20 mins		Now, move onto Activity 9 (AB pg 20) and complete activity by creating a simple program in Python , making sure to include the comments provided.					
15 mins		Next, complete Activity 10 (AB pg 21) by answering the 4 questions on indentation.					
<u>Plenary</u>							
5 mins		Summarise lesson, recapping the Learning objectives and the key vocabulary used throughout.					
<u>Assessment focus</u>		Complete activity 9 and 10.					
<u>Learning curve</u>		The entire course plus specific instructional videos are available on Learning curve via this link. Click here to open the link.					

Activity 9: Create a Program

Create a simple Hello-World program. Add a comment at the beginning of the code. The comment should include the following:

- file name
- description of the file
- author name (your name)
- date

Make the style you prefer and use it each time you create a program. *Answers will vary.*

```
# var_const.py
# This file ...
# Author: Ahmad Omar
# Date: / /2019
```

Activity 10: Indentation

Answer the following questions based on the following code indentation.

```
Statement A
|
Block of code (B):
|   Statement C
Statement D
|   |
Block of code (E):
|   Statement F
|   Statement G
|   |
|   Statement H
|
Statement I
```

	Statement	True/False
1	There are 2 blocks of code.	<i>True</i>
2	Statement F and Statement G belong to the Block of Code (E).	<i>True</i>
3	Statement D belongs to the Block of Code (B).	<i>False</i>
4	Statement H belongs to the Block of Code (B).	<i>False</i>