Target		Year 7 the work completed.			
		Working To-wards	Is at the expected standard	Is above expected standard	Test grade
UNIT 1 eSafety and Basic Skills.	eSafety				
	Managing Resources				
	Using Core Programs				
	Foundations for Learning				
	Resilience				
	Personal Study				
Overall unit performance					
UNIT 2 Scratch Programming	Algorithms - Flow Control				
	Programming Techniques				
	Foundations for Learning				
	Resilience				
	Personal Study				
Overall unit performance					
UNIT 3 Microbit Programming					
	Algorithms – Inputs and Outputs				
	Programming Techniques				
	Foundations for Learning				
	Resilience				
	Personal Study				
Overall unit performance					

For explanation of the judgements (shaded rows), see the back of this page (inside).

COMPUTING Year 7

NAME:

_____

The year 7 Computing curriculum starts with ensuring that students have core ICT skills. ALL students must understand how to stay safe whilst using ICT, e-Safety. Students need to be able to reliably access the school network and their learning resources. They should be able to organise and manage their own workspace including submission of work to the Virtual School.

Students then start to learn the basics of programming techniques using SCRATCH to develop a game. They then move on to programming the BBC Microbit where they learn to utilise the built in sensors and apply processing algorithms for a practical purpose.

By the end of Year 7 we expect students to be able to confidently use the school ICT systems and understand the principals of a basic computer system in terms of Input, Process and Output.

Which Primary School:_____

Unit 1: ESAFETY AND BASIC IT SKILLS

In this unit you will learn how to use the ICT at Penryn College efficiently.

This will include being able to send emails, submit work electronically using the Virtual School.

You will also need to show you are really good at keeping yourself safe online.

Lesson Overview

1. Logging in, email and organising your work
2. My eSafety Charter, basic Word skills.
3. Create an eSafety Game using Word (Part 1)
4. Create an eSafety Game using Word (Part 2)
5. How the Internet Works
6. Spreadsheets entering data and formatting.
7. Spreadsheet Formulas Charts.

Key Words

Shortcut keys, copy, paste, cut, folder
file
tables
columns
rows
Cells
text formatting
landscape
portrait
margins
merge cells
split cells
alignment (left, right, centre, justified)
bullet points
numbered lists
URL
web filter
search engine
Screen print
borders
shading fill

Home works

VS Skill: on the Virtual School there are
1. three tasks for you to complete. You should access and follow the instructions.

2. **Parts of a computer worksheet**. Use the correct keywords to identify the different pieces of hardware.

3. **Spreadsheet worksheet**: Identify the different parts of a spreadsheet.

Suggested Reading

eSafety—www.thinkuknow.co.uk

http://www.kidsmart.org.uk/

Cross Curricular

Presentation skills for all subjects.

Numeracy: using spreadsheets to manipulate data and create charts.

Over the year, you will be judged on your skills and learning. There are different ways you will be judged, the descriptions of these are below.

Computing	Criteria: ability to use IT skills across a range of problems.
Working towards	I can use different skills but sometimes I need to be told which skills I need to use and where to apply them.
Expected	I can confidently use my skills to solve problems and tasks that I am given. I can select my own skills to use without having to be told.
Above expected	I can work highly independently and apply my well developed skills to produce high quality work and solve new problems I have not met before.

Foundations for Learning	
Working towards	**Could be better** at following the Behaviour Standards and meeting the Foundations for Learning.
Expected	**Good** at following the Behaviour Standards and meeting the Foundations for Learning.
Above expected	**Shows pride** in behaviour and the Foundations for Learning; supports others in achieving this.
Resilience: Has self-belief, confidence, tries new challenges, manages emotions and bounces back from setbacks. Is engaged and committed.	
Working towards	Skills **could be better;** can sometimes apply these in lessons.
Expected	**Good** understanding; can apply these skills in lessons.
Above expected	**Outstanding** understanding; seeks out challenges and applies skills in life.
Personal Study: Can organise Personal Study (PS), completing work fully.	
Working towards	PS **could be better** and is either not given in on time or is not completed with the required effort.
Expected	PS is **good**, showing they can meet deadlines and produce work of an acceptable standard.
Above expected	PS is **outstanding**; consistently handed in on time and completed to a high standard.

NOTES	Date

Unit: 7.1—Basic Skills eSafety

I can / I know how to	Start /10	Done date	End /10
Basic Skills			
I know and can use the common shortcut keys (cut and paste etc).			
Create and maintain folders in my work area including compressing folders.			
Capture an image of my screen (screen print) , crop and resize it.			
Use the Virtual School to access resources and submit\upload work. I can access the feedback from my teacher on the VS.			
Use the school email system to send and reply to an email. I can attach files to an email and use\download attached files. I can do this on both my iPad and desktop computer.			
eSafety			
eSafety – identify at least 5 eSafety tips and create a personal charter.			
Understand the risks of computers being networked.			
I know the consequences of the misuse of technology. And how to report concerns.			
Word processing skills			
Create new documents and save with meaningful a filename.			
Create formatted tables with rows and columns, adjust the fill and text colours.			
I can review my work and use the spell checker.			
The Internet			
Explain how the internet works and it's basic parts including what an IP address is.			
Know the difference between what the internet is, an internet service and web browser.			
Spreadsheet skills			
I can add information in a neat format to a spreadsheet.			
Use basic formulas to automatically calculate sums.			
Create neat and meaningful bar charts and pie charts.			

Comments / Targets	Date

When the unit is finished, stick your

End of Unit Review Sheet

here on this page.

Learning this lesson

The questions get tougher as you go, how much of chatter box are you? Get a partner to test you!

What are you learning today?

What new skills have you learnt?

What have you learnt today that you didn't already know?

What's the point of this task?

How do you know if you have improved today?

Learning over time

The questions get tougher, how much of chatter box are you? Get a partner to test you!

Which piece of work are you proud of? Why?

What have you learnt this term?

What skills have you learnt?

What's the point of this unit?

How do you know you have improved this year?

Can you show me in your work that you are improving?

Comments / Targets	Date

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End of Unit Review Sheet

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Can you show me in your work that you are improving?

</div>

Unit 2: SCRATCH PROGRAMMING

Programming is about controlling electronic devices. In this unit you will use SCRATCH to learn about the basic **Programming Techniques** required to program in any programming language.

You will do this by creating a game in Scratch.

Lesson Overview

1	Algorithms (LightBot)
2	Iteration—types of loops.
3	Decisions and Variables (Part 1)
4	Flowcharts
5	Decisions and Variables (Part 2)
6	Boolean Logic
7	Completing the Game

Key Words

Algorithm: A sequenced list of instructions to complete a task.
Iteration: A section of code that repeats or loops back to the first instruction in that section.
Decomposition: Breaking down a task into smaller parts.
Decision: An instruction that has a yes or no answer.
Condition: An instruction with a set of rules to be performed if a certain condition is met.
Variable: A named location to store data which can change.
Broadcast: Send a signal to all of the code, but only code with the matching receive name will be activated.
Sprite: Character or object that can be scripted to move around or change if a condition is met.
Script: Sequenced instructions to perform a task or action, also known as code.
Sensing: Detects movement or touching another object,
Stage: Background graphic where programs rules can be set.
Debug: Check your script and fix errors.

Home works

1	List 10 jobs that DO use computer technology and 10 jobs that DO NOT.
2	Draw a flowchart to make a hot drink using the correct flowchart symbols.
3	Write an instruction guide on how to play your game.

Suggested Reading

https://**scratch**.mit.edu

Cross Curricular

Numeracy—sequencing and logic.

Technology—PIC programming.

Micro:bit Programming **I can / I know how to**	S /10	Done Date	E /10
I can explain how to use the MicroBit safely.			
I can describe what the microbit is and where you can find similar technology.			
I can draw a flowchart and then convert it into a program.			
I now the process of designing, programming and compiling code.			
I can use variables to control the flow of the program.			
I can control external devices such as LEDs and buzzers using the MicroBit.			
I can use the button inputs on the Microbits.			
I can use the built in sensors such the compass and accelerometer as inputs to my program.			
I can use loops to continually monitor inputs.			
I can show resilience in my work by using different techniques to solve my own problems (comparison, peer-peer, step through).			
I can organise my files using sensible names and save them into appropriate folders.			
I can re-load scripts that I have saved or other people have provided for me (either on the web or email).			
I can use problem solving skills to test and debug my code.			

Unit 3: MICROBIT PROGRAMMING

Once you have learned the basic structures for programing we will move on to programming using sensors and outputs.

You will do this by using the BBC Microbit's that have various built in sensors. You will also learn to control external devices.

This will become your new Super Power!

Lesson Overview

1. Intro to the MicroBit and compiling code.
2. Using built in sensors (accelerometer).
3. Variables and creating a score system.
4. Using the Random number generator.
5. Developing the Number Target Game.
6. Controlling Outputs.
7. Open choice from BBC MicroBit Site.

Home work

1. MicroBit Safety.
2. What is a MicroBit and what could it be used for.
3. Draw a flowchart for the Balance Game or Number Target Game.

Suggested Reading

BBC MicroBit Website.

Key Words

Compile:—building the program into code that the MicroBit understands.

Accelerometer:—motion detector built into the MicroBit.

IO Pins:—input and output pins to allow sensing and control of devices outside of the MicroBit.

LEDs: Light Emitting Diodes (small low-powered lights).

USB Port: the connection from the MicroBit to a Computer.

Sensor: a device that detects something happening in the real world.

Code Editor—how you design the a program.

Output: data coming out of the computer.

Input—data going into the computer.

Program: a set of instructions for the MicroBit to carry out.

Simulator: a virtual version of the MicroBit used for testing.

Cross Curricular

Use of computers to monitor and control devices in life.

Scratch Programming I can / I know how to:	S /10	Done Date	E /10
I understand and can pass data between procedures ie use Broadcasts or variables.			
I understand and can use the concept of the "scope" of a variable.			
I can use conditional operators ie when something IS EQUAL to something else or is NOT EQUAL, IS GREATER THAN or is NOT GREATER THAN			
I can detect and fix errors in a program.			
I can explain how an algorithm works using the terms iteration, decision, assignment and procedure.			
I can select and use appropriate data types for variables ie numbers, text, lists			
I can use a range of mathematical operators and expressions in my program. Ie add to my score or take away from my lives.			
I can use different techniques to receive input to the program. Ie asking, sensing, monitoring.			
I can show a solution to a problem using a flow chart with the correct symbols.			
I know and can show that flow of a program can be controlled using a **decision**. **IF THEN ELSE**			
I know that iteration is the repetition of a process and can demonstrate it's use. **WHILE/REPEAT** and **FOR**			
I know that there can be different solutions (algorithms) for the same problem.			
I can come up with an answer to a problem by breaking it down and solving it in smaller parts (**Decomposition)**.			
I can name and describe which tasks are best completed by people or computers.			

Comments / Targets	Date

When the unit is finished, stick your

End of Unit Review Sheet

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Learning this lesson

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What are you learning today?

What new skills have you learnt?

What have you learnt today that you didn't already know?

What's the point of this task?

How do you know if you have improved today?

Learning over time

The questions get tougher, how much of chatter box are you? Get a partner to test you!

Which piece of work are you proud of? Why?

What have you learnt this term?

What skills have you learnt?

What's the point of this unit?

How do you know you have improved this year?

Can you show me in your work that you are improving?