

# COMPUTING AND DIGITAL MEDIA

SUMMER PROJECTS  
**YEAR 11 STUDENTS**

IT AND COMPUTING:  
**WHODUNNIT?**  
**EMERGING TECHNOLOGIES**  
**DO YOU KNOW?**



HEART OF  
WORCESTERSHIRE  
COLLEGE

## KICK START YOUR STUDY AT HOW COLLEGE WITH ONE OF OUR CURRICULUM BRIDGING PROJECTS

### Background:

Welcome to the fantastic world of Information Technology and Computing! The activities and tasks in this pack are typical of what students do when studying computing at College. See if you can complete all of the challenges!

### Task 1 – Whodunnit?

A really important skill for an IT Professional is to be able to solve problems. For this task, you need to solve a crime using clues below, which are in the form of a programmer's toolkit known as pseudo-code.

The Suspects

- Professor Plum
- Reverend Green
- Miss Scarlet
- Mrs Peacock
- Mr Black

Doctor Pink has been found murdered downstairs in the kitchen, battered by some lead piping at 20:00 hours. Be a process of elimination find out whodunnit looking at the following pseudo-code.

```
IF TimeFound < 21:00 THEN
  IF (Location = Downstairs) AND
    (weapon=knife) THEN

    Reverend Green = innocent END IF

    IF (Location = Downstairs) OR
      (weapon=knife) THEN Mr Black
      = innocent

    ELSE
      Miss Scarlet=Innocent

    ENDIF ELSE

    Professor Plum = innocent END IF

    IF Location<>Conservatory THEN IF
    Location=Kitchen THEN

    CASE Weapon of
    Gun: Mr Black=innocent
    Candlestick: Reverend Green = innocent
```

```
Lead Piping: Mrs Peacock = innocent

Rope: Professor Plum=innocent END CASE

END IF
IF (location<> upstairs) AND
(TimeFound>12:00) Then

Professor Plum = innocent IF
location=kitchen THEN

Miss Scarlet=innocent ENDIF

ELSE
Mr Black = innocent

ENDIF END IF
```

**The culprit was:** \_\_\_\_\_

## Task 2 – Emerging Technologies

Using your knowledge of new technologies and your imagination, go through the table below and describe the usual purpose each of these items have as well as the benefits of using each item.

Then ... think about how we might use these devices elsewhere to good effect!

A lot of the time, computer devices are introduced for entertainment purposes (like games) or to make life a little easier (like microwave ovens). However, the aim of IT professionals is to enable technology to be used for more important factors. This can range from enabling a system to be accessed by all or even saving lives.

Technology	Main purpose and benefits	Possible alternative uses
iPhone Siri		
QR Codes		
VR Headsets		
Google Translate		
Hubble Telescope		
AR Headsets		
Artificial Intelligence		
Mobile data (eg 5G)		

### **Task 3 – Do you know?**

Some interesting facts about computing and technology – see how many you can answer correctly!

- 1.** Who was the very first programmer?
- 2.** Which company makes the X-BOX?
- 3.** Who invented the world wide web?
- 4.** What is the longest word you can write only using letters on one row of your keyboard?
- 5.** What is HTML used for?
- 6.** How many bits are used to denote an IPv4 address?
- 7.** What is the difference between a current CPU and a quantum processor?
- 8.** Name 4 operating systems and explain why your 'favourite' is better than the others.
- 9.** Who launched the company Pixar?
- 10.** In which year was the "@" symbol first chosen for its use in email addresses?

### **Indicative time for this project:**

We recommend you spend roughly 10 hours on this project.

### **Instructions on how to submit this:**

Submit your work online using this link: <https://driveuploader.com/upload/cP3LltqvoE/>

Whether you are submitting a written document or a video file, please ensure you include your name and your email address so we know how to contact you. If you know your student ID number from your interview invite letter, then please also include this.

If you have trouble submitting your work, then please feel free to contact James Duckhouse (the Curriculum Leader for Computing & Digital Media) either by ringing **01905 725721** or emailing **[jduckhouse@howcollege.ac.uk](mailto:jduckhouse@howcollege.ac.uk)** and he will endeavour to help you with submitting your files.

### **How will I benefit from this project:**

By doing this project, you will gain an understanding of a number of key skills of IT professionals today. By coming onto our IT & Computing course in the new academic year will help you gain the skills you need to put your ideas into reality!

### **What can I expect to get back after I submit my project work:**

We will acknowledge receipt of your submission once we have received it and a member of the teaching team will give you some feedback when the new term starts later in the year.