

Cambridge advanced nationals IT – Summer Work

What work is being set?

For your summer work you will be looking at the '**Unit F204 - Data and the Internet of Everything (IoE)**' component of the specification.

You will be investigating how the technology around us is being used to automate, predict and potentially improve our lives.

By completing this project, you should hopefully achieve the following learning goals:

- Understand what the **Internet of Everything (IoE)** is.
- Consider how **sensors, devices, data, and people** are connected in a smart environment.
- Explore how **data** is collected and used in real-time.
- Think about **ethics, privacy, and sustainability** in tech design.

The summer work is split into **three** different sections, each with their own tasks and set of objectives.

Task 1 - Research and understanding - What is the Internet of Everything (IoE)?

For the first task you will need to understand what the **Internet of everything** is. Watch the following videos to get a better understand of:

- What the Internet of Everything is
- The types of devices connected to the IoE
- How the IoE can change society, for better and for worse
- [Internet of Everything TED talk](#)
- [CISCO commercials – Internet of Everything](#)

Now that you have a better understanding of the IoE:

Research & Reflection (Short Written Task)

Write a short explanation (150–200 words) answering:

- What is the Internet of Everything?
- How is it different from the Internet of Things (IoT)?
- Give one real-world example of a smart device or system (e.g., smart traffic lights, smart bins).

Task 2 - Design a smart city:

Watch the following **video** - [What is a smart city?](#)

Imagine you work for the local council and are proposing the idea of a 'Smart City' to be integrated into Chippenham. The aim of the 'Smart City' features is to improve the lives of the citizens of the town in ways such as:

- Improving congestion/traffic and parking in the town
- Improving waste collection/disposal
- Helping to tackle crime to make the area safer
- Automate systems such as traffic crossings and lighting
- Improve alerts to emergency services

Design a section of a smart city (e.g., city centre, transport network, smart homes area, school zone, green space (e.g. public park)).

Your design must show at least **four IoT-enabled systems** – for example:

- Smart traffic management using sensors and cameras
- Automated waste management (smart bins)
- Smart healthcare monitoring for citizens
- Connected schools and learning hubs

For this task, imagine that money is no issue so you choose whichever technology you want.

How to present your work:

You can present this task in one of the following ways:

- A poster (hand drawn or digital)
- A presentation (e.g. PowerPoint)
- A video

Your design should include annotations/descriptions as to:

- Why you have chosen this feature for the smart city
- How you think it will improve the town of Chippenham

Task 3 - Think like a data analyst

Now that you have designed your smart city, choose **two** of the smart systems you included in your city and answer the following:

- What kind of data does this system collect
- Who uses this data and how?
- What are the risks of using this data (e.g. privacy, hacking, bias)?
- Suggest one way to make your system more ethical or secure.

How long should I spend on this work?

It is expected that you spend around five hours on this project.

Who should I send this work to and / or who should I contact with any questions? –

Mr Phillips – tmp@hardenhuish.wilts.sch.uk

Mrs Parry-Jones – rjp@hardenhuish.wilts.sch.uk

How and when to submit work?

The work will be collected in the first week of September once you start the course. You will be expected to submit the following:

- A document that contains your write up for **task 1** and **task 3**
- Evidence of your Smart city proposal, which could be a physical poster or a Presentation
- *if it is physical you might want to take a picture of it to submit rather than the physical work*

Useful links:

[Cambridge Advanced Nationals Specification](#)