



Putteridge
High
School

Extended Learning Computer Science Years 9, 10 & 11



Computer Science GCSE



Extended Learning Opportunities

Subject: Computer Science

Level: GCSE

Term: Autumn 1

Topic: 1 Problem Solving

Learning Objectives

To understand:

- 1.1 Algorithms
- 1.2 Decomposition and abstraction

Extended Learning Opportunities

- Find out more about algorithms [here](#).
- Watch the [GCSE pods](#) for this section.
- Visit the [Centre for Computing History](#)
- Visit [Bletchley Park](#) and find out about how algorithms won the second world war!
- You might like to check out these [movies](#) with a computer science theme (ensure of course that they are age appropriate).
- You might like to check out these [books](#) with a computer science theme.
- Discover how algorithms rule the world [here](#).
- Look at the extended learning tasty computing [takeaway menus](#) and choose the dishes you want to get your teeth into!

Check out these video playlists:

- [Crash Course](#) Computer Science
- Computer Science [Tutor \(Edexcel\)](#)



Extended Learning Opportunities

Subject: Computer Science

Level: GCSE

Term: Ongoing

Topic: 2 Programming

Learning Objectives

To understand:

- 2.1 How to develop code
- 2.2 How to making programs easy to read
- 2.3 Strings
- 2.4 Data structures
- 2.5 Input/Output
- 2.6 Subprograms
- 2.7 Testing and evaluation

Extended Learning Opportunities

- Watch the [GCSE pods](#) for this section.
- Visit the [Centre for Computing History](#)
- Visit [Bletchley Park](#) and find out about how algorithms won the second world war!
- Enjoy the ultimate gaming experience! Stay at the [Arcade Hotel Amsterdam](#).
- You might like to check out these [movies](#) with a computer science theme (ensure of course that they are age appropriate).
- You might like to check out these [books](#) with a computer science theme.
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Have a look at the following sites which make coding fun:

- [Code Hunt](#)
- [Code Combat](#)
- [The Hour of Code](#)
- [Vidcode](#)
- and many many more! Always make sure there are no hidden costs. and then get coding!

Check out these video playlists:

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Extended Learning Opportunities

Subject: Computer Science

Level: GCSE

Term: Ongoing

Topic: 3 Data

Learning Objectives

To understand:

- 3.1 Binary
- 3.2 Data representation
- 3.3 Data storage and compression
- 3.4 Encryption
- 3.5 Databases

Extended Learning Opportunities

- You might like to check out these [movies](#) with a computer science theme (ensure of course that they are age appropriate).
- You might like to check out these [books](#) with a computer science theme.
- Watch the [GCSE pods](#) for this section
- What is BIG DATA? Find out [here](#).
- Counting in binary? [Here's](#) how it all started.
- Play these [binary games](#) and let your teacher know your high score.
- Go against the clock to [match](#) the binary and hexadecimal numbers.
- Look at the extended learning tasty computing [takeaway menus](#) and choose the dishes you want to get your teeth into!

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Extended Learning Opportunities

Subject: Computer Science

Level: GCSE

Term: Ongoing

Topic: 4 Computers

Learning Objectives

To understand:

- 4.1 Machines and computational modelling
- 4.2 Hardware
- 4.3 Logic
- 4.4 Software
- 4.5 Programming Languages

Extended Learning Opportunities

- Find out more about computer hardware [here](#).
- Watch the [GCSE pods](#) for this section.
- Pick parts and build a [virtual computer](#).
- [PC Build Simulator](#) - does what it says on the tin.
- Ask the local computer shop if there is any old kit laying around you can have to play with.
- You might like to check out these [movies](#) with a computer science theme (ensure of course that they are age appropriate).
- You might like to check out these [books](#) with a computer science theme.
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Extended Learning Opportunities

Subject: Computer Science

Level: GCSE

Term: Ongoing

Topic: 5 Communication & the Internet

Learning Objectives

To understand:

- 5.1 Networks
- 5.2 Network Security
- 5.3 The Internet and the World Wide Web

Extended Learning Opportunities

- Build your own [virtual network](#).
- You might like to check out these [movies](#) with a computer science theme (ensure of course that they are age appropriate).
- You might like to check out these [books](#) with a computer science theme.
- Watch the [GCSE pods](#) for this section
- Find out what the [internet](#) is really made of.
- Look at the extended learning tasty computing [takeaway menus](#) and choose the dishes you want to get your teeth into!

Check out these video playlists:

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- Computer Science [Tutor \(Edexcel\)](#)



Extended Learning Opportunities

Subject: Computer Science

Level: GCSE

Term: Ongoing

Topic: 6 The Bigger Picture

Learning Objectives

To understand:

- 6.1 Green Issues
- 6.2 Privacy
- 6.3 Digital Inclusion
- 6.4 Professionalism
- 6.5 The legal Impact

Extended Learning Opportunities

- Pick one of the big ideas like AI, Machine Learning, Blockchain or the internet of things. Then either write a chatbot, produce a video, infographic, talk, blog etc. etc. about what you have found out.
- Keep up to date with the latest emerging technology [here](#).
- Use an online web editor to create a website to inform everyone about the latest technology news.
- Create an OSCAR awards list for the Top 10 Breakthrough Technologies of the year. Who will you give the top prizes to?
- You might like to check out these [movies](#) with a computer science theme (ensure of course that they are age appropriate).
- You might like to check out these [books](#) with a computer science theme.
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- Look at the extended learning tasty computing [takeaway menus](#) and choose the dishes you want to get your teeth into!

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