Newport Girls' High School **Learning Overview**

Subject:	Computer Science	**Lead Teacher:**	Mr Ley	**Year:**	11

Curriculum organisation

Students are taught in option groups of around 20 for 3 hours per week, each with a computer to use. The Syllabus followed is AQA Computer Science 8525 + VB.Net

Overview of Topics & Key Information

Term	Unit(s) of Work	Key Enquiry Questions	Key Content/ Terminology	Skills developed	How will your child be learning?
Autumn Term	L25 Logic Gates L26-27 Efficiency of algorithms L28-29 Systems Architecture CPU L30-31 Systems Architecture Storage L32 Software L33 Programming Languages L34-36 Networks	• How can I arrange a logic circuit for a particular outcome? • What is the best way to search through data? • What is the best way to sort data? • How does the processor work? • What makes some processors better than others? • What is the best way to store data? • What software is needed to run a computer? • What software is needed for users to create data? • What types of programming languages are there? • Why do programming languages need translating? • What kind of networks are there? • What is the TCP/IP protocol suite and why is it needed?	• Logic Gates • AND, OR, XOR, NOT • Truth tables • Search Algorithms • Sort Algorithms • CPU • RAM • HD, SSD, Optical storage, Cloud storage, • System software • Operating systems • Application software • High/Low level languages • Translator; compliers and interpreters • WAN/LAN/ PAN • Wireless • Topologies • Protocols, TCP/IP	Presenting information and analysing and answering questions for maximum marks.	By creating presentation on the theory topics covered and participating in class discussion. Also, by working through past paper questions.
Spring Term	L37 Security L38 Ethical, Legal and Environmental Issues L39-44 Relational Databases and SQL	• What does Cyber Security entail? • What are the common cyber security threats? • What is penetration testing? • What are the current ethical, legal and environmental impacts of digital technology? • What are the impacts of digital technology on privacy? • Why is a relational database better than a flat file? • How do I design a database? • How do I query a database using SQL? • How do I create tables? • How do I create, update and I delete records?	• Cyber security threats • White box/black box testing mobile technologies, wireless networking, cloud storage, hacking, wearable technologies, computer-based implants, autonomous vehicles • Relational databases • Table (entity), Field (attribute), value • Entity relationship diagram • Query • Select, Update, Insert, Delete		By answering questions presented in worksheets, by doing past paper questions and by coding in SQL

Summer Term	GCSE Revision	• What are my revision priorities? • What Triple Topic Tests should I sign up for?	• Exam technique	• Exam technique	By analysing the topics and rating them according to confidence and importance. By managing their own revision and signing up to the triple topic test to assess progress and gain exam practice.

Equipment needed for lessons	How will learning and progress be assessed?
• Windows Personal Computer (provided)	• Peer and self-assessment • End of topic assessments (subject skills focus) • Whole School assessment week (May)

Extension & Enrichment opportunities	What can you do to support your child?
• Coding club and Digital Leaders (club) • Computer rooms open most lunchtimes • National Competitions (BEBRAS)	• Ensure there are digital resources they can use. (A normal windows PC is ideal). • Get your daughter to help you with digital tasks.

Inclusion

- Teachers follow student passports to ensure that the needs of all students with SEND are met.
- Work is enlarged to the necessary size for visually impaired students.
- Teachers will ensure that classrooms are quiet learning environments where possible and will dim lights to support students with sensory needs.
- Students have the use of laptop if they have a SEND need whereby use of a laptop supports them.
- Hearing impaired students are supported through use a radio aid and teachers ensure that students can lip read at all times during lessons.
- Dyslexic students are encouraged to use coloured overlays when they are required to read long passages.
- Use of dyslexic friendly fonts and coloured backgrounds used in PowerPoints/resources.
- Students with ADHD are given movement breaks, fidget toys and lessons are 'chunked' to aid concentration.
- Students are seated according to their needs, students work with the SENDCo to decide upon this.

Additional Inclusion for Computer Science

- Computer monitors can be adjusted for brightness and contrast to support students with sensory requirements
- Spell check in Word gives support to Dyslexic students

If you have any questions about this Learning Overview, please contact the named Teacher above.