Bishop Heber High School

Subject	Year	Term
Computer Science	10	2

Topic

Networks, programming

Content (Intent)

Prior Learning (Topic) System architecture, data representation, programming

Programming. Python, sequence, selection, iteration, operators, data structures, functions.
Networks. The operation of communication networks, and which type of network is appropriate for different circumstances. When building a network, what hardware and software is required and the weaknesses of the different types. The main shape (topology) of a network, advantages, disadvantages types of hardware needed in different circumstances. Factors affecting bandwidth. Client-server systems.

Future Learning (Topic) Networks security, system software, impacts of digital tech, programming

What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)
How to use Python to solve problems using a range of operators, data structures and calling functions. The internet and the protocols that make it work, with particular reference to the TCP/IP model. How the internet operates through routers, packet switching and IP addresses. Types of networks for different situations. How to manage bandwidth	A test in class based on past questions and on those provided by the exam board which are part of the end of unit test package. Students will be given a grade based on published grade boundary data. Suggestions on how to improve answers to the next grade boundary will be provided. There will be some interim on-line testing based on multiple choice questions in Google and Teams forms.
How data is sent along network using TCP/IP and how each layer in the stack contributes a different protocol that allows for network and internet communication. POP3, HTTPS, HTTP, FTP, SMTP, IMAP	Programming project will be assessed and given feedback for improvement. A series of exercises to design a network based on user requirement. PG-online multiple choice questions and long and short answer questions

How can parents help at home?

Ensure revision and homework is completed.

Helpful further reading/discussion (including Reading and Vocabulary Lists)

Reading

CGP Computer science ISBN: 9781782946021
Von Neumann
GCSE Pod
PG-online powerpoints

Vocabulary Lists

Bandwidth
Protocol
Client
Server
Star
Mesh
MAC address
IP address
TCP/IP stack
Packets
Packet switching