**Personalised Learning Checklist**

Subject: Computer Science

Year group: 12

Dear Student,

During the academy closure you have been set a number of tasks. The list below is the learning you should have completed. Your teacher will use the list to check your progress during this time. It may be used for short quizzes, mini assessments or homework. Where there are gaps your lessons will focus on improving your knowledge and understanding.

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| --- | --- | --- | --- | --- |
| Objective | My personal RAG rating (Red- do not understand, Amber- some understanding, Green- I am confident | | | Teacher RAG rating |
| Define serial and parallel transmission methods and discuss the advantages of serial over parallel transmission. | RED | AMBER | GREEN |  |
| Define and compare synchronous and asynchronous data transmission. | RED | AMBER | GREEN |  |
| Describe the purpose of start and stop bits in asynchronous data transmission. | RED | AMBER | GREEN |  |
| Differentiate between baud rate and bit rate. | RED | AMBER | GREEN |  |
| Know and be able to trace and analyse the complexity of the linear search algorithm. | RED | AMBER | GREEN |  |
| Know and be able to trace and analyse the time complexity of the binary search algorithm. | RED | AMBER | GREEN |  |
| Know why the object-oriented paradigm is used. | RED | AMBER | GREEN |  |
| Be aware of the following object-oriented design principles:  • encapsulate what varies  • favour composition over inheritance  • program to interfaces, not implementation. | RED | AMBER | GREEN |  |
| Be able to write object-oriented programs. | RED | AMBER | GREEN |  |
| Be able to draw and interpret class diagrams. | RED | AMBER | GREEN |  |
| Produce a data model from given data requirements for a simple scenario involving multiple entities. | RED | AMBER | GREEN |  |
| Produce entity relationship diagrams representing a data model and entity descriptions in the form: Entity1 (Attribute1, Attribute2, .... ). | RED | AMBER | GREEN |  |
| Explain the concept of a relational database. | RED | AMBER | GREEN |  |
| Be able to define the terms:  •• attribute  •• primary key  •• composite primary key  •• foreign key. | RED | AMBER | GREEN |  |