5 hours in… Computer Science

Research shows that the most successful students (i.e. those that make the most progress and get the highest grades) are doing between 20 and 25 hours of independent study per week by the end of Year 13. That may seem a lot, but it's something that you would build up to over the course of your A-Levels. In Year 12, we're talking something more like 15 hours per week. This equates to roughly 5 hours of independent study per A-Level per subject.

Remember that your independent study is divided into three types – Consolidation, Reactive and Proactive.

Consolidation

The evening following a Computer Science lesson, you should spend 12-15 minutes (24-30 minutes for a double) rereading your notes, writing the summary section at the bottom of your notes and making relevant flashcards e.g. for equations, definitions, facts you need to recall etc.

Reactive

This is your 'homework'. If you find this takes more than 1 hour, that's fine, you can take this from the proactive phase (not from the consolidation phase though). Equally, if you find you finish your reactive work quickly, spend more time on your proactive work. Remember you should 'react' to all programming challenges by asking "What can I do to improve the program …"

Proactive

This is the section that will broaden and deepen your overall understanding of the subject you are studying. It will not necessarily involve work that has been set by your teacher, but instead it is about you doing the extra practice questions, reading articles, watching videos, TED talks etc. Remember your Year 13 project (worth 20% of the final grade) is essentially proactive work. In Computer Science, this might contain some of the following:

- Complete a set of practice past paper questions – available on the AQA website **(1 hour)**
- Use websites to complete and add to class notes **(30 minutes)**
- Use the specification checklist to evaluate your understanding **(10 mins)**
- Answer questions in your Workbooks **(30 mins)**
- Programming, programming & more programming …
- Give yourself a mini (or maxi) programming challenge **(15 mins to 15 hours)**
- Research possible NEA project ideas
- Practice exam style questions from your Computer Science textbooks **(30 mins)**
- "Read, Cover, Write and Check" sections of Knowledge organisers **(30 mins)**
- Complete a section of questions on Isaac Computer Science **(30 minutes)**
- Watch some videos on Computerphile **(30 mins)**

Useful links

- **AQA Specification** https://tinyurl.com/yxxsk7k2
- **AQA Past papers and mark schemes** https://tinyurl.com/vdua6az
- **Computer Science Revision Notes (Physics & Maths Tutor)** https://tinyurl.com/qrfc8yl
- **Isaac Computer Science** https://tinyurl.com/ss34258
- **Assembly Language Simulator** https://tinyurl.com/wpcaoof
- **Unit 1 Skeleton Program Predictions** https://tinyurl.com/vrknq96
- **Textbook Answers & Resources** https://tinyurl.com/u52rqpr
- **SQL Tutorial** https://www.w3schools.com/sql/
- **Computerphile Videos** https://tinyurl.com/h3a8slm

5 hours in… Computer Science – your weekly review

Week beginning: _____

What have I been learning with Mr Kendall? **_____**

Consolidation (tick when complete)		**Reactive 1**	**Reactive 2**	**Proactive 1**	**Proactive 2**	**Proactive 3**
Lesson 1						
Lesson 2						
Lesson 3						
Lesson 4						
Lesson 5						
Time spent						

Total time spent on Independent Learning in Computer Science this week: _____

Areas that require further review	**Things I need to ask Mr Kendall**

Checked by: _____ (teacher)

5 hours in… Computer Science – your weekly review (an example)

Week beginning: 03/02/2020

What have I been learning with Mr Kendall **Principles of Operation of External Devices**

Consolidation (tick when complete)		Reactive 1	Reactive 2	Proactive 1	Proactive 2	Proactive 3
Lesson 1	✓	Complete Workbook Questions in Unit 2 Workbook – Hand in Next Tuesday	Complete Mind Map for Optical Storage	Watch Computerphile video on Public/Private key cryptography	Research algorithms for NEA project on solving mazes	Programming Challenge to make Mastermind game including graphical user interface
Lesson 2	✓					
Lesson 3	✓					
Lesson 4	✓					
Lesson 5	✓					
Time spent	**1 hour**	**40 minutes**	**1 hour**	**20 minutes**	**35 minutes**	**1 hour 20 minutes**

Total time spent on Independent Learning in Chemistry this week: 4 hours 55 minutes

Areas that require further review

- Operation of SSD device
- How a digital camera processes colour images

Things I need to ask Mr Kendall

- What is the difference between a recordable and a rewriteable compact disk?
- How to use 2D arrays to store a gameboard for Connect 4

Checked by: _____ (teacher)