Year 11-12 Transition Work

Subject: Computer Science

We're looking forward to welcoming you in September! Please note that this document has been created by staff to help you prepare to start your studies at sixth form. The work you produce from this will form the basis of a discussion in your first lessons with your teachers.

At the end of this document, there is a review grid and coding grid for you to complete every time you engage with some preparatory activities this summer.

List of key topics you will study in Year 12:

1. Procedural programming
2. Theory of Computation
3. Data Representation
4. Computer systems, organisation, and architecture
5. Communication and networking
6. Consequences of uses of computing

Recommended research list:

1. The Secret Rules of Modern Living: Algorithms (https://youtu.be/kiFfp-HAu64)
2. CHM Live – The Great Hack (https://www.youtube.com/watch?v=y26NQdTLtaw)
3. Computerphile channel (https://www.youtube.com/@Computerphile)
4. The Machine: A computer science education podcast
5. https://www.w3schools.com/python/default.asp
6. https://www.geeksforgeeks.org/
7. https://www.khanacademy.org/computing/ap-computer-science-principles
8. https://www.codewars.com/kata/python

Tasks

1. Watch the documentary The Secret Rules of Modern Living: Algorithms and complete a review grid.
2. Watch the documentary CHM Live – The Great Hack and complete a review grid.
3. Watch three videos from the Computerphile channel and complete a review grid for each one.
4. Listen to two episodes of The Machine… podcast and complete a review grid for each one.
5. Complete two challenges (katas) per week on Code Wars and complete a coding grid for each challenge.
6. Independently research an area of the specification that interests you. Write a 500-word summary of what you learned.

REVIEW GRID Name of podcast/article:	
REWORD IT: Use this space to look up any words you don't know on an online dictionary/thesaurus	CRUNCH IT: Identify 6 keywords in this podcast/article/source. Say why you have picked these words. 1. 2. 3. 4. 5. 6.
SUMMARISE IT Summarise 3 key learning points or arguments in this podcast/article/source:	REVIEW IT: Would you recommend this resource to another student? Why/why not? What was your key takeaway from this article? What questions do you still have?

CODING GRID

Name of kata / challenge:

Screenshot of kata or challenge instructions. (You can copy and paste the instructions instead)

Screenshot of your program code.

REVIEW IT:

What challenges did you face in solving this challenge?

What did you learn / discover by completing this challenge?

What went well in this challenge?

What would you do differently next time?