

Year 10

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn Half Term 1	P1 – Basics	How do I write programs in real code?	<ul style="list-style-type: none"> ● Algorithmic thinking ● Delphi basics ● Selection – IF and CASE 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● a series of homework where students submit their programs for checking ● progress is monitored and recorded during lessons. <p>Skills</p> <ul style="list-style-type: none"> ● Basic Delphi syntax ● Use of IF and CASE <p>Assessment point information Homework marks will feed into an Assessment Point. Progress data is collected and stored each lesson, along with comments on individuals.</p>
	T1 – Data Representation	How do computers store data?	<ul style="list-style-type: none"> ● Binary numbers and conversion to and from denary ● Hexadecimal numbers and why they are useful ● Storage of sound files and file types ● Concept of Sampling ● Storage of images and file types 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● binary and simple data representation is assessed using online tests ● overall understanding is assessed with a formal test. <p>Skills</p> <ul style="list-style-type: none"> ● Conversion of data from one representation to another

				<p>Assessment point information All three test marks feed into an Assessment Point.</p>
Autumn Half Term 1	P2 – Manipulating Data	How do I work with numbers and strings?	<ul style="list-style-type: none"> ● String Functions: <ul style="list-style-type: none"> ○ Leftstr ○ rightstr ○ midstr ○ [] brackets ○ Length ● Numeric functions: <ul style="list-style-type: none"> ○ MOD ○ DIV ○ ROUND ○ TRUNC ● Dry running 	<p>How understanding is assessed: A final assessed exercise tests all of these new functions. students' progress is also monitored and recorded in lessons</p> <p>Skills</p> <ul style="list-style-type: none"> ● Ability to solve problems using string functions ● Ability to solve problems using numeric functions ● Dry running – can handle simple code <p>Assessment point information Marks from the final hand-in of the assessed exercise and BM (Behaviour Management) data feed into an Assessment Point.</p>

Autumn Half Term 2	T2 - Software	What are the different types of Software?	<ul style="list-style-type: none"> ● System Software – concept ● Utility programs – concept and examples ● OS – functions and features 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● Students present their findings to the group <p>Skills</p> <ul style="list-style-type: none"> ● Presentation skills ● Team-working skills <p>Assessment point information BM data will be collected on their progress while working and when giving their final presentations. This can feed in to an Assessment Point</p>
Autumn Half Term 2	P3 - Loops	How do I make use of repeating code?	<ul style="list-style-type: none"> ● For-do loops ● While – do loops ● Repeat-until loops ● Debugging techniques 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● dry Running homeworks to check understanding ● hand-in of programming exercises ● final assessed exercise covering all types of loop. <p>Skills</p> <ul style="list-style-type: none"> ● Can use all three types of loop ● Understands when it appropriate to use of the three types <p>Assessment point information The final assessed exercise feeds into an Assessment Point, as do the marks from the smaller homeworks</p>

Spring Half Term 1	T3 – Memory and Storage	Why do you need memory and storage?	<ul style="list-style-type: none"> ● RAM and ROM ● Cache memory ● Need of Secondary Storage ● Types of secondary storage ● Comparative usage of different types of secondary storage 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● students report their findings in groups to the whole class ● Kahoot Quiz <p>homework to test knowledge of storage devices.</p> <p>Skills</p> <ul style="list-style-type: none"> ● Ability to specify sensibly memory and secondary storage for a given situation <p>Assessment point information The homework feeds into an Assessment point, and data is collected when groups are reporting, which can also be used as part of the AP.</p>
Spring Half Term 1	P4 - Arrays	How can we store larger amounts of data efficiently?	<ul style="list-style-type: none"> ● Array concept ● Types of array ● Accessing and searching arrays ● Sorting algorithms ● 2D arrays 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● Dry Running exercises ● final assessed program ● observation and recording of progress in lessons. <p>Skills</p> <ul style="list-style-type: none"> ● Array programming ● Searching arrays in different ways ● Sorting arrays – single or multiple <p>Assessment point information The final assessed program feeds into an assessment point, as can the interim Dry Running marks and BM data from lessons</p>

Spring Half Term 1	T4 – Systems Architecture and Logic	How do computers actually work?	<ul style="list-style-type: none"> • The CPU and its component parts • Registers and the F/E cycle • Assembly language using LMC • Logic gates and diagrams • Truth Tables 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> • formal homeworks test understanding of both of these sections. <p>Skills</p> <ul style="list-style-type: none"> • Ability to write and understand low level code • Ability to draw up truth tables for simple gate combinations <p>Assessment point information Homework marks contribute to an Assessment Point</p>
Spring Half Term 2	T5 – Networks and Internet	How and why do we connect computers together	<ul style="list-style-type: none"> • Network hardware • Types of network • Internet and Packet Switching • Protocols • Wire and wireless networks 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> • a test exercise is used to check knowledge across the whole unit. <p>Skills</p> <ul style="list-style-type: none"> • Ability to ‘tell the story’ of how the protocol stack works <p>Assessment point information The test exercise feeds into an Assessment Point</p>
Spring Half Term 2	P5 – File Handling	How do we store data from programs and access it later?	<ul style="list-style-type: none"> • File handling keywords • Loading from files • Saving to files 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> • progress is monitored and captured during lessons • an assessed program is used to check students’ ability to load and save to file. <p>Skills</p> <ul style="list-style-type: none"> • Delphi file handling

				<p>Assessment point information The final assessed program contributes to an Assessment Point, as does BM data from lessons</p>
Summer Half Term 1	P6 – Subroutines and 2D arrays	How do I break a program into manageable chunks?	<ul style="list-style-type: none"> ● Flag variables ● 2d Array handling ● Procedures and procedure calls ● Functions 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● a series of game programs is completed and extended by students and progress in this monitored. <p>Skills</p> <ul style="list-style-type: none"> ● 2D array programming ● Calling and addition of procedures ● Ability to turn a brief into program code <p>Assessment point information This work follows the last Assessment Point</p>
Summer Half Term 2	T6 - ELCEC	What are the legal and other societal ramifications of Computing?	<ul style="list-style-type: none"> ● The five Acts ● Examples of moral and ethical issues which arise 	<p>How understanding is assessed:</p> <ul style="list-style-type: none"> ● short essays ● homework exercises. <p>Skills</p> <ul style="list-style-type: none"> ● Understanding of the five Acts ● Empathy with different perspectives in real-life situations <p>Assessment point information Marks gained are fed into the Summer AP</p>

Summer Half Term 2	P7 – Programming Games	How do a write a program with multiple sections	<ul style="list-style-type: none">● 2D arrays in practice● Parameter passing● Procedures and Functions	<p>How understanding is assessed:</p> <ul style="list-style-type: none">● comprehension exercises● adapting existing programs. <p>Skills</p> <ul style="list-style-type: none">● 2D Arrays● Writing new Methods● Use of reference and value parameters <p>Assessment point information This work follows the last Assessment Point</p>
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