Westcliff High School
for Boys

LOWER SCHOOL GRADE DESCRIPTORS

COMPUTER SCIENCE

YEAR 7	**4**	• Can clearly state a range of risks and some suitable precautions associated with use of the internet and mobile communications. • Can successfully use a range of formulae suitably chosen for a given task. • Can use basic programming constructs such as if, else and forever loops. • Can identify simple errors in code such as missing conditions. • Be able to convert between binary and denary with given headings. • Identify the main logic gates (AND, OR and NOT) by their icon & truth table.
	5	• Can identify a wide range of e-safety risks and precautions along with methods of maintaining a good digital footprint. • Can produce a complex suitable model using a number of different suitable formulae. • Can use more complex programming concepts such as scratches 'broadcast', clone and random and nested ifs. • Can convert between binary to denary without the use of headings. • Can construct basic logic gate circuits and derive their truth tables. • Draw topology diagrams for ring, bus and star networks. Compare strengths and weaknesses. • Can define the basic principle of the TCP/IP protocol including the role of IP addresses. • Can explain the purpose of DNS and how it is used for the internet. • Be able to use a given character from an ASCII table to convert a short string of text.
YEAR 8	**6**	• Successful use of form submissions to submit adjust CSS properties. • Use inline styles to override a CSS file. Use divs & span positioning. • Construct complex queries using SQL without the use of a wizard. • To be able to explain the different memory stores, including solid state, magnetic, optical along with their relative merits. • With reference to sample rate and depth students should be able to calculate approximate file sizes for a given audio sample. • Be able to construct simple functions which take arguments and return a given value. • Use string manipulation and basic algebra to produce a variety of outputs.
YEAR 9	**7**	• Convert pseudocode to flowcharts (forever, while and do while loops) without reference materials. • Successfully encode a bubble sort using python without the use of support. • Use two or more types of sensor to control two or more outputs. • For a given threat identify appropriate security measures to minimize risk. • Understand the importance of an overflow bit and how it can affect a computer system. • Extend beyond the Caesar Cipher to use a keyword instead of a single number. • Explain the key steps in the TCP/IP protocol. • Explain the link between IP addresses and domain names, be able to perform a DNS reverse lookup.
	EP	• Improve the efficiency of the bubble sort by including a swap 'flag' and minimal code. • Use two's compliment to subtract numbers knowing when to dismiss an outcome. • To add validation to the code to reject any special characters, skipping spaces. • Explain the role of the header when moving between the layers of the TCP/IP stack. • Be aware of a range of registrars and purpose of a range of top level domain names. • Through iteration and independent work develop a new skill.