

ICT & Computer Science Year 8

LEARNING BLOCK 1

<p>KNOWLEDGE</p>	<p>Topic 1: Algorithms During this topic students will develop an understanding of algorithms and how to write algorithms. Students will:</p> <ul style="list-style-type: none"> • Understand what algorithms are and be able to effectively write an algorithm • Understand selection and iteration and be able to write algorithms which demonstrate this • Be able to use searching and sorting algorithms to find specific information • Use logical reasoning to find errors in algorithms and correct them <p>Topic 2: Python Programming During this topic students will develop an understanding of text-based programming language and be able to create a range of programs. Students will:</p> <ul style="list-style-type: none"> • Understand how to use python programming to output data from a program • Understand how to take inputs from a computer program
<p>SKILLS</p>	<ul style="list-style-type: none"> • Writing algorithms • Interpreting problems and effectively writing algorithms to solve the problem • Searching for information using algorithms • Sorting information using algorithms • Finding errors in algorithms and correcting them effectively • Outputting data in a computer program • Taking an input in a computer program
<p>ASSESSMENT</p>	<ul style="list-style-type: none"> • Range of in class tasks • In class assessment • End of topic assessments

LEARNING BLOCK 2

KNOWLEDGE	<p>During this topic students will develop an understanding of text-based programming language and be able to create a range of programs. Students will:</p> <ul style="list-style-type: none">• Understand how to use python programming to output data from a program• Understand how to take inputs from a computer program• Understand how to create variable to store data• Understand the different data types and how to store them in a program• Understand how to make decisions in a program• Understand how to use python to create interactive quizzes/games <p>Topic 3: Data Representation and Boolean Logic</p> <p>During this topic students will develop an understanding of how data is stored in a computer and how to interpret binary numbers. Students will:</p> <ul style="list-style-type: none">• Understand what binary is• Convert binary numbers to denary numbers• Convert denary to binary numbers• Add binary numbers together• Convert the alphabet into binary numbers• Understand how sound and images are stored as binary• Understand binary logic
SKILLS	<ul style="list-style-type: none">• Writing computer programs• Creating variables to store data• Storing data in appropriate data types• Make decisions within a computer program• Convert binary numbers effectively• Add binary numbers• Converting the alphabet to binary• Complete a range of binary logic tasks
ASSESSMENT	<ul style="list-style-type: none">• Range of in class tasks• In class assessment• End of topic assessments

LEARNING BLOCK 3

KNOWLEDGE	<p>Topic 4: Networks In this topic students will examine what computer networks are and how they are used. Students will:</p> <ul style="list-style-type: none">• Understand what networks are and how they are used• Understand the different hardware needed to create a computer network• Understand the different network topologies• Understand how data is transmitted across a network <p>Topic 5: HTML Web Design In this topic students will understand how HTML is used to design websites and create webpages using it. Students will:</p> <ul style="list-style-type: none">• Understand HTML tags and how they are used• Use HTML to create and format webpages• To be able to create a website for a specific purpose
SKILLS	<ul style="list-style-type: none">• Identifying and describing network hardware• Drawing and identify the different network topologies• Describing how packet switching works• Using HTML• Creating webpages using HTML• Creating an appropriate website.
ASSESSMENT	<ul style="list-style-type: none">• Range of in class tasks• In class assessment• End of topic assessments