



# ARAB UNITY SCHOOL

CURRICULUM OVERVIEW

COMPUTING

YEAR 7

2021 – 2022

A guide for Parents and Students

# SUBJECT: Computing

Year: 7

## Overview of the year:

The national curriculum for Computing aims to ensure that all pupils:

- Can analyze the principles of information and computation, how digital systems work and how to put this knowledge to use through programming.
- Can understand and apply the fundamental principles and concepts of computer science including abstraction, logic, algorithms and data representation.
- Can analyze problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.
- Can evaluate and apply information technology including new or unfamiliar technologies, analytically to solve problems.
- Are responsible, competent, confident and creative users of information and communication technology.

Term	Topic	Activities / Assessments	Skills (SECRET)
<b>TERM ONE</b>  Main topic, skills and content: <ul style="list-style-type: none"><li>• Communication and networks</li> <li>• Data &amp; Data Representation</li></ul>	<b>Communication on the Internet</b> <ul style="list-style-type: none"><li>• Chat, instant messaging and news group.</li><li>• Blogs and web feed.</li><li>• Social networking and other services.</li><li>• Gaming and online telephony.</li><li>• Cloud Computing and online sharing.</li></ul> <b>Introduction to Data Representation</b> <ul style="list-style-type: none"><li>• Introduction to number system.</li><li>• Base and types of number system, bits and bytes.</li><li>• Converting decimal to binary and vice-versa.</li></ul>	<b>1.</b> Research and investigate on the harmful effects of gaming and also develop a blog on your favorite book.	Students develop creative skills on the topic and would be able to design using their innovative ideas.

<ul style="list-style-type: none"> <li>Programming and development</li> </ul>	<ul style="list-style-type: none"> <li>Representation of negative decimal in binary.</li> </ul> <p><b>Introduction to Python Programming</b></p> <ul style="list-style-type: none"> <li>Fundamentals.</li> <li>Data Types and Variables.</li> <li>Numeric Variables</li> <li>String variables.</li> <li>Comments.</li> <li>Printing with Parameters.</li> <li>Getting Input from a user.</li> <li>String Formatting.</li> <li>Swapping using temporary variables with and without temporary variables</li> <li>Arithmetic calculations</li> <li>String Concatenation</li> </ul>	<p>2. Develop a Python program to input 3 numbers from the user, assign variable names to them, find the sum and print the result.</p>	<p>Students perform systematic investigation and enquiry of materials and sources in order to establish facts and reach new conclusions about programming languages.</p>
<p><b>TERM TWO</b></p> <p>Main topic, skills and content:</p> <ul style="list-style-type: none"> <li>Communication and networks</li> <li>Hardware &amp; Processing</li> </ul>	<p><b>Computer Virus</b></p> <ul style="list-style-type: none"> <li>What does the computer virus do?</li> <li>Types of computer virus.</li> <li>Malware.</li> <li>Preventing Virus Infection and Antivirus Software.</li> </ul> <p><b>Hardware</b></p> <ul style="list-style-type: none"> <li>Data and Information.</li> <li>Laptop and desktop.</li> <li>Types of computers and input devices.</li> </ul> <p><b>Introduction to HTML</b></p> <ul style="list-style-type: none"> <li>HTML editors and coding.</li> <li>Structure of an HTML document.</li> </ul> <p><b>Tools in Flash</b></p> <ul style="list-style-type: none"> <li>Pen tool</li> </ul>	<p>1. A number of computer systems and brands are released in the market every now and then.</p> <ol style="list-style-type: none"> <li>Research on the latest computers (desktop and laptop) in the market, develop a table showing the name of the computer, processor, processor speed and main memory capacity with its price.</li> <li>Research and list the various computer viruses.</li> <li>Investigate on the different antivirus available in the market.</li> </ol>	<p>Reflective learning involves students thinking about what they have read, done, or learned, relating the lesson and apply it to real life situation.</p>

<ul style="list-style-type: none"> <li>Programming and development</li> </ul>	<ul style="list-style-type: none"> <li>Eyedropper tool</li> <li>Importing Pictures</li> <li>Transforming objects</li> </ul> <p><b>Animation in Flash</b></p> <ul style="list-style-type: none"> <li>The time line and layers.</li> <li>Animation with motion tweening and Shape tweening.</li> <li>Animation using motion guide.</li> <li>Applying Timeline effects.</li> </ul>	<p>2. Animate the butterfly and bird so that when butterfly fly from one side, it changes into a bird while reaching to another end and also create an animation in Adobe Flash which moves an object on a spiral path.</p>	<p>The task enables the students to develop skills in managing and looking at problems or situations in their perspective and also arrive at effective solutions.</p>
<p><b>TERM THREE</b></p> <p>Main topic, skills and content:</p> <ul style="list-style-type: none"> <li>Algorithms</li> </ul> <ul style="list-style-type: none"> <li>Programming and development</li> </ul>	<p><b>Algorithm &amp; Flowchart</b></p> <ul style="list-style-type: none"> <li>Algorithm and pseudocode.</li> <li>Sequential programming and examples.</li> <li>Flowchart symbols</li> <li>Sequential Programming and examples.</li> </ul> <p><b>Introduction to HTML</b></p> <ul style="list-style-type: none"> <li>HTML editors and coding.</li> <li>Create basic html code.</li> <li>Creating a web page.</li> </ul>	<p>1. Develop an algorithm, pseudocode and flowchart for a system where the user inputs a password, the right password is “Pluto”. The computer displays the message “correct password” or “wrong password” depending on what the user types in.</p> <p>2. Develop a web page using HTML to display title as “Color” and display “My favorite color is Yellow” in the body.</p>	<p>The task demands the scenario of enquiring more on the topic to make them reflective learners.</p> <p>The task will help the student to incorporate and use their creative and various design styles and enquiries to develop a webpage.</p>