



# ARAB UNITY SCHOOL

CURRICULUM OVERVIEW

COMPUTING

YEAR 9

2019 – 2020

A guide for Parents and Students

**SUBJECT: Computing**

**Year: 9**

**Overview of the year:**

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

- Develop the foundational skills, knowledge and understanding of computing they will need for the rest of their lives.
- Learn how computers and computer systems work.
- Design and build programs.
- Develop ideas using technology, and create a range of digital content.

Topics	Objectives	Activities/assessments	Skills(SECRET)
<p><b>TERM ONE</b></p> <p>Main topic, skills and content:</p> <p>Hardware &amp; processing</p> <p>Digital Literacy</p> <p>Programming &amp; development</p>	<p><b>Types and Components of Computer System:</b></p> <ol style="list-style-type: none"> <li>1. Understand main components of computer system.</li> <li>2. Understand range of different operating systems.</li> <li>3. Identify difference between the different user interfaces</li> <li>4. Identify different Application software.</li> <li>5. Impact of Emerging Technologies</li> </ol> <p><b>Data types and Databases:</b></p> <ol style="list-style-type: none"> <li>1. Identify the different file structure. File records, fields, key field.</li> <li>2. Identify the different data types in a database.</li> <li>3. Understand the difference between flat file and relational database.</li> <li>4. Understanding concept of relational database. Concept of primary key, foreign key and relationships between two tables.</li> </ol>	<p>1. Research work - We all know that you can make phone calls with a smartphone, but it can do so much more. It adds in features that not too long ago you would have found only on a personal digital assistant or a computer; such as the ability to send and receive email, edit documents and play games. Do some research and determine:</p> <ol style="list-style-type: none"> <li>i. How a smartphone is different from a conventional mobile phone</li> <li>ii. Definition of a smartphone from a computing perspective</li> <li>iii. what can a smartphone be</li> </ol>	<p><b>Reflective learning involves students thinking about what they have read, done, or learned, relating the lesson at hand to their own lives and making meaning out of the material. Students become reflective learners as they research and think about the perspective of smartphones.</b></p>

	<p><b>Input &amp; Output Devices :</b></p> <ol style="list-style-type: none"> <li>1. Identify the uses of different input devices.</li> <li>2. Identify advantages &amp; disadvantages of input devices.</li> <li>3. Identify the uses of different direct data entry devices.</li> <li>4. Identify advantages and disadvantages of different data entry devices.</li> </ol> <p><b>Document Production (MS-Word)</b></p> <ul style="list-style-type: none"> <li>• Format text and organise page layout</li> <li>• Edit a table</li> </ul> <p><b>Data manipulation:</b></p> <ol style="list-style-type: none"> <li>1. Introduction to MS Access. Database, field names, records.</li> <li>2. Import a text file into a database</li> <li>3. Understand how to assign appropriate data types to the fields. Concept of design view, datasheet view.</li> <li>4. Understanding query wizard, how to create query with multiple criteria</li> <li>5. Create a report with appropriate criteria in a database.</li> </ol> <p><b>Styles</b></p> <ul style="list-style-type: none"> <li>• Corporate house styles</li> <li>• Create styles in a document</li> </ul> <p><b>Proofing</b></p> <ul style="list-style-type: none"> <li>• Understand and use spell check and grammar check to remove errors in word document.</li> <li>• Understand and use validation to restrict data entry in databases and spreadsheets.</li> </ul>	<p>used for?</p> <ol style="list-style-type: none"> <li>iv. what is it that makes it smart?</li> </ol> <ol style="list-style-type: none"> <li>2. In document production, write a booklet about the place where you live. This could have several different articles describing how different people live, work and enjoy themselves. This should include photographs of local people, houses and industrial buildings. The booklet should be up to four pages long.</li> </ol>	<p><b>Students organize the booklet and include photographs effectively. Self manager-Students create skills in managing and looking at problems or situations from a fresh perspective.</b></p>
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	<p><b>Layout</b></p> <ul style="list-style-type: none"> <li>• Basic documents</li> <li>• Place objects into a document</li> </ul> <p>Headers and footers</p>		
<p><b>TERM TWO</b></p> <p>Main topic, skills and content:</p> <p>Data &amp; Data Representation</p> <p>Programming &amp; development</p> <p>Digital Literacy</p>	<p><b>Binary Number System:</b></p> <ol style="list-style-type: none"> <li>1. To know and understand binary states, forms of data, number system (decimal, binary, octal. Hexadecimal)</li> <li>2. Understand binary addition, binary subtraction</li> <li>3. Converting decimal numbers to binary numbers and vice versa. Converting decimal to hexadecimal and vice versa.</li> <li>4. Understanding different binary coding schemes ASCII, EBCDIC, UNICODE</li> </ol> <p><b>Algorithms and Flowchart:</b></p> <ol style="list-style-type: none"> <li>1. Creating an algorithm for a given problem</li> <li>2. Understand and use the pseudocode using the conditional statements. IF ... THEN ... ELSE ... ENDIFFOR ... TO ... NEXT, (looping) REPEAT ... UNTIL WHILE ... DO ... ENDWHILE</li> <li>3. Identify different flowchart symbols. Start/Stop(End), Input, Process, Decision, Output symbols (boxes), arrows, connector. Draw a flowchart for a given problem</li> <li>4. Draw a flowchart for a given problem and apply suitable test data to check the problem</li> </ol> <p><b>Visual basic:</b></p> <ol style="list-style-type: none"> <li>1. Understanding Visual basic GUI.</li> </ol>	<p><b>ASSESSMENTS:</b></p> <ol style="list-style-type: none"> <li>1. Make an algorithm and flowchart TO FIND SUM OF FIRST N NUMBERS.</li> <li>2. Create a calculator using visual basic programming which performs different mathematical operations.</li> </ol>	<p><b>Students become effective organizers as they write algorithm for the given problem.</b></p> <p><b>Students think creatively to design a calculator and organize the coding to perform calculations</b></p>

	<p>2. Develop an application-create form, place controls, set properties, add code to the controls to handle events in visual basic</p> <p>3. Declare variables, assign values to variables, using arithmetic operators</p> <p>4. Create an application using different controls.</p>		
<p><b>TERM THREE</b></p> <p>Main topic, skills and content:</p> <p>Data &amp; Data Representation</p> <p>Algorithms</p> <p>Programming &amp; development</p>	<p><b>Safety and security:</b></p> <ol style="list-style-type: none"> <li>1. Describe common physical safety issues, what causes them and some simple strategies for preventing these issues.</li> <li>2. Explain personal data and why e-safety is needed.</li> <li>3. Evaluate own use of the internet, email, social media/networking sites and online games and use strategies to minimize the potential dangers.</li> <li>4. To know effective security of data.</li> </ol> <p><b>Data analysis</b></p> <ol style="list-style-type: none"> <li>1. Perform different function in a spreadsheet i.e. merge, wrap text, inserting rows &amp; columns, deleting rows &amp; columns</li> <li>2. Perform formatting using any currency + decimal places.</li> <li>3. Perform appropriate functions in a spreadsheet such as SUM, MIN, MAX, AVG, COUNT, COUNTA</li> <li>4. Perform lookup functions i.e. VLOOKUP, HLOOKUP in a spreadsheet.</li> <li>5. Creating different charts in spreadsheet.</li> </ol> <p><b>Graphs and charts</b></p> <ul style="list-style-type: none"> <li>• Chart types</li> </ul>	<p><b>ASSESSMENTS:</b></p> <ol style="list-style-type: none"> <li>1. Research and investigate recent email- based scams with suitable information.</li> <li>2. Develop an invoice to send to a customer of your company. Make sure formula will work if the data changes. Invoice should show number of item, total number of units, total cost, subtotal for each of the item etc.</li> </ol>	<p><b>Students develop their reflective learning as they research on the recent email scams.</b></p> <p><b>Students learn to be creative thinker and good enquirers as they prepare invoice for the customer for their company.</b></p>

	<ul style="list-style-type: none"><li>• Create a chart</li><li>• Label a chart</li><li>• Use secondary axes</li></ul>		
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