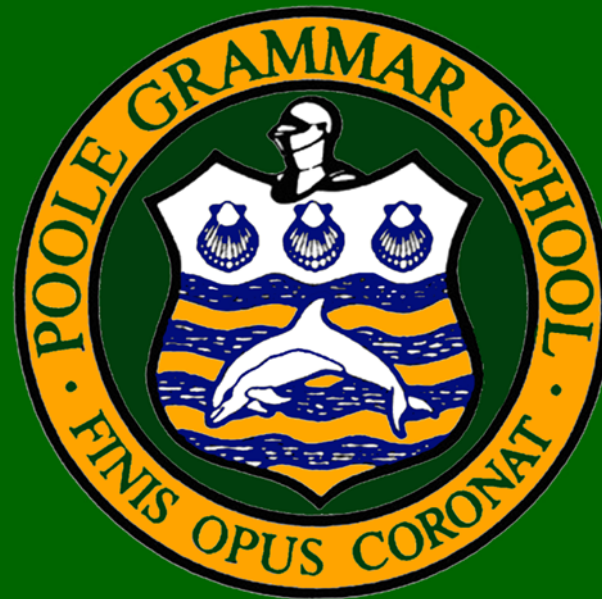


# Poole Grammar School - Key Stage 3

(Year 7, Year 8 & Year 9)

## COMPUTER SCIENCE

‘Meeting expectations’ criteria, programme of study and curriculum content



## Key Stage 3 Computer Science / ICT 'meeting expectations' descriptors

	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>
<b>Impact and use of technology</b>	<p>Understand when to use technology, how to use it safely and how to use the school system</p> <p>Skills: Use of school system, Use of email, Social networking, Internet use, e-safety</p>	<p>Reminder of when to use technology, how to use it safely and how to use the school system</p> <p>Skills: Use of school system; Use of email; Social networking; Internet use; e-safety</p>	<p>Reminder of when to use technology, how to use it safely and how to use the school system</p> <p>Skills: Use of school system; Use of email; Social networking; Internet use; e-safety</p>
<b>Coding</b>	<p>Able to solve simple coding challenges</p> <p>Skills: Sequence; Selection; Iteration.</p> <p>Languages: Logo; Scratch; Small Basic</p>	<p>Able to solve more advanced coding challenges</p> <p>Skills: Sequence; Selection; Iteration; Subroutines; Variables; Parameters</p> <p>Languages: Logo; Scratch; Small Basic; BBC MicroBit</p>	<p>Able to autonomously solve more advanced coding challenges using a professional programming environment</p> <p>Skills: Sequence; Selection; Iteration; Subroutines; Variables; Parameters</p> <p>Languages: Small Basic; Visual Basic (Visual Studio)</p>
<b>Computational thinking &amp; algorithms</b>	<p>Able to solve simple challenges</p> <p>Skills: Decomposition; Pattern recognition; Abstraction; Algorithms</p>	<p>Able to solve more advanced challenges</p> <p>Skills: Decomposition; Pattern recognition; Pattern generalisation; Abstraction; Algorithms</p>	<p>Introduction to sorting algorithms and in particular the Bubble Sort</p> <p>Knowledge: How sorting algorithms work in general; How Bubble Sort works</p> <p>Skills: Code a simple Bubble Sort; Consider efficiency</p>
<b>Word processing and DTP</b>	<p>Able to create a simple document or poster</p> <p>Skills: Format text; Format images; Format document; Add colours and effects; Create basic tables; Add hyperlinks; Design skills</p>		
<b>Spreadsheets</b>	<p>Able to build a simple spreadsheet model</p> <p>Skills: Cell formatting; Formulas; Conditional formatting; Use of basic controls; Absolute referencing; Design skills</p>	<p>Able to build an advanced spreadsheet model</p> <p>Skills: Cell formatting; Formulas; Conditional statements; Conditional formatting; Use of controls</p> <p>Absolute referencing; Lookups; Design skills</p>	<p>Able to build an advanced spreadsheet model</p> <p>Skills: Cell formatting; Formulas; Conditional statements; Conditional formatting; Use of controls; Introduction to macros; Design skills</p>
<b>Databases &amp; Website building</b>	<p>Able to build a simple database (one table)</p> <p>Skills: Importing data; Create tables; Create forms; Create reports; Create queries; Add basic controls</p>	<p>Able to create a website</p> <p>Skills: Using a basic editor; HTML; Format text; Add colours and effects; Use images; Use tables; Use links; Introduction to CSS</p>	<p>Able to create a more advanced website</p> <p>Skills: Using a basic editor; HTML; Format text; Add colours and effects; Use images; Use tables; Use links; Advanced CSS</p>
<b>Presentations</b>	<p>Able to create a simple presentation</p> <p>Skills: Use of slide transitions; Use of animation</p> <p>Format text; Add links; Design skills</p>	<p>Able to create an advanced presentation</p> <p>Skills: Use of slide transitions; Use of advanced animation; Use of audio; Use of video; Format text</p> <p>Add internal + external links; Design skills</p>	
<b>Computational theory &amp; Robotics</b>	<p>Understand the following: Binary system; Data representation; Characters; Images; Sound; Converting bases; Networks (LAN, WAN, Internet)</p>	<p>Understanding the following: Input, output, storage device; Primary memory; Secondary memory; Type of software; Fetch Execute cycle; Sorting; Searching</p>	<p>Understand the basic components of a simple robot</p> <p>Able to program a robot to perform basic tasks using a drag and drop language</p> <p>Use more advanced programming techniques to solve more challenging problems</p>

## Programme of study for Year 7 Computing

Autumn term	Spring term	Summer term
<p style="text-align: center;">Theme 1 <b>Impact and use of technology &amp; web quiz</b> (2 weeks)</p> <p style="text-align: center;">Theme 2 <b>Word processing</b> (4 weeks)</p>	<p style="text-align: center;">Theme 6 <b>Presentation software 1</b> (4 weeks)</p> <p style="text-align: center;">Theme 7 <b>Coding using SCRATCH</b> (2 weeks)</p>	<p style="text-align: center;">Theme 9 <b>Understanding the binary system</b> (1 week)</p> <p style="text-align: center;">Theme 10 <b>Databases</b> (3 weeks)</p> <p style="text-align: center;">Theme 11 <b>Computer networks</b> (1 week)</p>
<b>HALF TERM HOLIDAY</b>		
<p style="text-align: center;">Theme 3 <b>Desk top publishing</b> (3 weeks)</p> <p style="text-align: center;">Theme 4 <b>Computational thinking</b> (2 weeks)</p> <p style="text-align: center;">Theme 5 <b>Coding using LOGO</b> (4 weeks)</p>	<p style="text-align: center;">Theme 7 <b>Coding using SCRATCH</b> (2 weeks)</p> <p style="text-align: center;">Theme 8 <b>Spreadsheets</b> (4 weeks)</p>	<p style="text-align: center;">Theme 12 <b>Coding using SMALL BASIC</b> (4 weeks)</p> <p style="text-align: center;">Theme 13 <b>Presentation software 2</b> (3 weeks)</p>

## Curriculum content for Year 7 Computing

Theme	Content	Assessment
<b>1 Impact and use of technology &amp; web quiz</b> (2 weeks)	<ul style="list-style-type: none"> <li>- Use of school system</li> <li>- Use of email</li> <li>- Social networking</li> <li>- Internet use and e-safety</li> <li>- Using a browser to search for information</li> <li>- Verifying information found on the web</li> </ul>	Online quiz
<b>2 Word processing</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Format text</li> <li>- Add colours and effects</li> <li>- Create and edit basic tables</li> <li>- Design skills</li> <li>- Format images &amp; add hyperlinks</li> </ul>	Pocket sized timetable and online worksheet
<b>3 Desktop publishing</b> (3 weeks)	<ul style="list-style-type: none"> <li>- Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting online identity and privacy</li> <li>- Recognise inappropriate content, contact and conduct, and know how to report concerns</li> </ul>	A4 poster
<b>4 Computational thinking</b> (2 weeks)	<ul style="list-style-type: none"> <li>- Decomposition</li> <li>- Pattern recognition</li> <li>- Abstraction</li> <li>- Algorithms</li> </ul>	National quiz
<b>5 Coding - LOGO</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- Sequence</li> <li>- Iteration</li> <li>- Procedures and parameters</li> </ul>	Report with code and screenshots
<b>6 Presentation software 1</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Use of slide transitions</li> <li>- Use of animation</li> <li>- Format text</li> <li>- Add links</li> <li>- Design skills</li> </ul>	8 to 10 slide presentation
<b>7 Coding - SCRATCH</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- Sequence</li> <li>- Selection</li> <li>- Iteration</li> <li>- Message passing</li> <li>- Procedures</li> <li>- Image processing</li> </ul>	Report with code and screenshots

<b>8 Spreadsheets</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Cell formatting</li> <li>- Formulas</li> <li>- Conditional formatting</li> <li>- Use of basic controls</li> <li>- Design skill</li> </ul>	Spreadsheet
<b>9 Understanding binary system</b> (1 week)	<ul style="list-style-type: none"> <li>- Binary system and need for it</li> <li>- Converting from binary to decimal and back</li> <li>- Representation of characters, images and sound</li> </ul>	15 minute quiz
<b>10 Databases</b> (3 weeks)	<ul style="list-style-type: none"> <li>- Importing data</li> <li>- Create tables</li> <li>- Create forms</li> <li>- Create reports</li> <li>- Create queries</li> <li>- Add basic controls</li> </ul>	Report with screenshots
<b>11 Computer networks</b> (1 week)	<ul style="list-style-type: none"> <li>- Networks and need for them</li> <li>- LANs and WANs</li> <li>- The internet and the World Wide Web</li> </ul>	15 minute quiz A4 poster
<b>12 Coding – SMALL BASIC</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- Sequence</li> <li>- Selection</li> <li>- Iteration</li> <li>- Procedures</li> </ul>	Report with code and screenshots
<b>13 Presentation software 2</b> (3 weeks)	<ul style="list-style-type: none"> <li>- Use of slide transitions</li> <li>- Use of animation</li> <li>- Format text</li> <li>- Add links</li> <li>- Design skills</li> <li>- What a computer is</li> <li>- How it works</li> <li>- Input, output and storage</li> </ul>	8 to 10 slide presentation

## Programme of study for Year 8 Computing

Autumn term	Spring term	Summer term
<p style="text-align: center;">Theme 1 <b>Impact and use of technology</b> (1 week)</p> <p style="text-align: center;">Theme 2 <b>Coding using SMALL BASIC</b> (4 weeks)</p> <p style="text-align: center;">Theme 3 <b>Coding using LOGO</b> (2 weeks)</p>	<p style="text-align: center;">Theme 5 (cont.) <b>HTML + CSS: My favourite things</b> (2 weeks)</p> <p style="text-align: center;">Theme 6 <b>Coding using SMALL BASIC</b> (4 weeks)</p>	<p style="text-align: center;">Theme 8 <b>Spreadsheets – Ski rental</b> (4 weeks)</p> <p style="text-align: center;">Theme 9 <b>Coding using SCRATCH</b> (3 weeks)</p>
<b>HALF TERM HOLIDAY</b>		
<p style="text-align: center;">Theme 3 (cont.) <b>Coding using LOGO</b> (3 weeks)</p> <p style="text-align: center;">Theme 4 <b>Computational thinking: BEBRAS Challenge</b> (2 weeks)</p> <p style="text-align: center;">Theme 5 <b>HTML + CSS: My favourite things</b> (4 weeks)</p>	<p style="text-align: center;">Theme 6 (cont.) <b>Coding using SMALL BASIC</b> (2 weeks)</p> <p style="text-align: center;">Theme 7 <b>Coding using BBC MICRO:BIT</b> (4 weeks)</p>	<p style="text-align: center;">Theme 9 (cont.) <b>Coding using SCRATCH</b> (3 weeks)</p> <p style="text-align: center;">Theme 10 <b>Presentation software: Computing pioneers</b> (3 weeks)</p>

## Curriculum content for Year 8 Computing

Theme	Content	Assessment
<b>1 Impact and use of technology</b> (1 week)	<ul style="list-style-type: none"> <li>- Use of school system</li> <li>- Use of email</li> <li>- Social networking</li> <li>- Internet use and e-safety</li> </ul>	None
<b>2 Coding – Small BASIC</b> (4 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- Coding efficiency</li> <li>- Sequencing</li> <li>- Iteration</li> <li>- Procedures</li> </ul>	Report with code and screenshots
<b>3 Coding - LOGO</b> (5 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking and harder problems</li> <li>- Coding efficiency</li> <li>- Tessellations</li> <li>- Variables</li> <li>- Sequence</li> <li>- Iteration</li> <li>- Procedures and parameters</li> </ul>	Report with code and screenshots
<b>4 Computational thinking – BEBRAS challenge</b> (2 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking and harder problems</li> <li>- Decomposition</li> <li>- Pattern recognition</li> <li>- Abstraction</li> <li>- Algorithms</li> </ul>	National quiz
<b>5 HTML + CSS: my favourite things</b> (6 weeks)	<ul style="list-style-type: none"> <li>- Building simple website using HTML</li> <li>- Basic CSS</li> <li>- Adding text and images</li> <li>- Adding hyperlinks</li> <li>- Formatting content</li> </ul>	Report with code and screenshots
<b>6 Coding – Small BASIC</b> (6 weeks)	<ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- Coding efficiency</li> <li>- Sequence</li> <li>- Selection</li> <li>- Iteration</li> <li>- Procedures</li> <li>- String handling</li> </ul>	Report with code and screenshots

<p><b>7 Coding – BBC MICRO:BIT</b> (4 weeks)</p>	<ul style="list-style-type: none"> <li>- Hardware and software working together</li> <li>- Computational thinking</li> <li>- Coding efficiency</li> <li>- Sequence</li> <li>- Selection</li> <li>- Iteration</li> </ul>	<p>Report with code and screenshots</p>
<p><b>8 Spreadsheets – Ski rental</b> (4 weeks)</p>	<ul style="list-style-type: none"> <li>- Cell formatting</li> <li>- Formulas</li> <li>- Conditional formatting</li> <li>- Use of basic controls</li> <li>- Vlookups</li> <li>- Worksheets in a workbook</li> <li>- Macros</li> <li>- Design skill</li> </ul>	<p>Spreadsheet</p>
<p><b>9 Coding - SCRATCH</b> (6 weeks)</p>	<ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- Sequence</li> <li>- Selection</li> <li>- Iteration</li> <li>- Message passing</li> <li>- Procedures</li> <li>- Image processing</li> </ul>	<p>Report with screenshots</p>
<p><b>10 Presentations: computing pioneers</b> (3 weeks)</p>	<ul style="list-style-type: none"> <li>- Use of slide transitions</li> <li>- Use of animation</li> <li>- Format text</li> <li>- Add links</li> <li>- Design skills</li> <li>- History of computing</li> </ul>	<p>8-10 slide presentation</p>



## Programme of study for Year 9 Computing

Autumn term	Spring term	Summer term
<p style="text-align: center;">Theme 1 <b>Impact and use of technology</b> (1 week)</p> <p style="text-align: center;">Theme 2 <b>Coding - SMALL BASIC revisited</b> (5 weeks)</p> <p style="text-align: center;">Theme 3 <b>Theory - sorting</b> (2 weeks)</p>	<p style="text-align: center;">Theme 6 <b>HTML + CSS: What's inside a PC?</b> (6 weeks)</p>	<p style="text-align: center;">Theme 8 <b>Coding in VISUAL BASIC – Slot machine</b> (2 weeks)</p> <p style="text-align: center;">Theme 9 <b>Coding - ROBOTS</b> (4 weeks)</p>
<b>HALF TERM HOLIDAY</b>		
<p style="text-align: center;">Theme 4 <b>Computational thinking: BEBRAS Challenge</b> (2 weeks)</p> <p style="text-align: center;">Theme 5 <b>Spreadsheets - crossword</b> (4 weeks)</p>	<p style="text-align: center;">Theme 7 <b>Coding introduction to VISUAL BASIC</b> (6 weeks)</p>	<p style="text-align: center;">Theme 9 (cont.) <b>Coding - ROBOTS</b> (2 weeks)</p> <p style="text-align: center;">Theme 10 <b>Coding – SPACE INVADERS</b> (6 weeks)</p>

## Curriculum content for Year 9 Computing

Theme	Content	Assessment
<b>1 Impact and use of technology</b> (1 week)	<ul style="list-style-type: none"> <li>• Use of school system</li> <li>• Use of email</li> <li>• Social networking</li> <li>• Internet use</li> <li>• e-safety</li> </ul>	None
<b>2 Coding – Small BASIC revisited</b> (5 weeks)	<ul style="list-style-type: none"> <li>• Computational thinking</li> <li>• Coding efficiency</li> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> <li>• Procedures</li> <li>• Binary Search</li> </ul>	Report with code and screenshots
<b>3 Theory - sorting</b> (2 weeks)	<ul style="list-style-type: none"> <li>• Arrays</li> <li>• Bubble sort</li> </ul>	Report with code and screenshots
<b>4 Computational thinking – BEBRAS challenge</b> (2 weeks)	<ul style="list-style-type: none"> <li>• Computational thinking and harder problems</li> <li>• Decomposition</li> <li>• Pattern recognition</li> <li>• Abstraction</li> <li>• Algorithms</li> </ul>	National quiz
<b>5 Spreadsheet - crossword</b> (4weeks)	<ul style="list-style-type: none"> <li>• Cell formatting</li> <li>• Formulas</li> <li>• Conditional statements</li> <li>• Conditional formatting</li> <li>• Use of controls</li> <li>• Introduction to macros</li> <li>• Design skills</li> </ul>	Spreadsheet
<b>6 HTML + CSS: What's inside a PC?</b> (6 weeks)	<ul style="list-style-type: none"> <li>• Building simple website using HTML</li> <li>• More advanced CSS</li> <li>• Adding text and images</li> <li>• Adding hyperlinks</li> <li>• Formatting content</li> <li>• Theory</li> </ul>	Report with code and screenshots

	<ul style="list-style-type: none"> <li>• Input, output, storage devise</li> <li>• Primary memory</li> <li>• Secondary memory</li> <li>• Type of software</li> <li>• Fetch Execute cycle</li> </ul>	
<b>7 Coding – VISUAL BASIC</b> (6 weeks)	<ul style="list-style-type: none"> <li>• Computational thinking</li> <li>• Coding efficiency</li> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> <li>• Procedures</li> <li>• String handling</li> </ul>	Report with code and screenshots
<b>8 Coding in VISUAL BASIC – Slot machine</b> (2 weeks)	<ul style="list-style-type: none"> <li>• Computational thinking</li> <li>• Coding efficiency</li> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> <li>• Random numbers</li> <li>• Procedures</li> <li>• String handling</li> </ul>	Report with code and screenshots
<b>9 Coding - ROBOTS</b> (6 weeks)	<ul style="list-style-type: none"> <li>• Understanding how to interact with the robot</li> <li>• Computational thinking</li> <li>• Coding efficiency</li> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> <li>• Procedures</li> <li>• String handling</li> </ul>	Report with code and screenshots
<b>10 Coding – SPACE INVADERS</b> (6 weeks)	<ul style="list-style-type: none"> <li>• Computational thinking</li> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> <li>• Message passing</li> <li>• Procedures</li> <li>• Image processing</li> </ul>	Report with code and screenshots