ATAM Academy
Computing
Overview

| Year Group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| **EYFS** | • Understand different technology used in different places<br>• Machines need instruction in order to move<br>• How to use different software like paint, take a picture on a camera<br>• Name the different parts of a computer<br>• A keyboard is for putting information into a computer (including letters, words, and numbers)<br>• Moving a mouse along a flat surface can move the on-screen cursor to different items on the screen<br>• **E-safety:** Asking an adult before using the internet | | | | | |
| **1** | Intro to using a mouse<br>Keeping login details private | Programming Bee-Bots<br>Keeping login details private | Algorithms Unplugged<br>What to do if you see something inappropriate online | Digital Imagery<br>What to do if you see something inappropriate online | Introduction to dater<br>What to do if you see something inappropriate online | Rocket to the Moon<br>What to do if you see something inappropriate online |
| **2** | What is a computer?<br>Recapping year 1 E-safety lessons | Word processing<br>Recapping year 1 E-safety lessons | Scratch Jr.<br>SMART internet safety introduced | Algorithms and Debugging<br>SMART internet safety | International space station<br>SMART internet safety | Into to using Stop Motion<br>SMART internet safety |
| **3** | Emailing<br>Recapping year 2 E-safety lessons | Journey inside a computer<br>Recapping year 2 E-safety lessons | Top Trump's database<br>Learning that not all emails are genuine recognising when an email might be faker and what to do.<br>Learning how to treat others online and digital etiquettes | Digital Literacy<br>Learning that not all emails are genuine recognising when an email might be faker and what to do.<br>Learning how to treat others online and digital etiquettes | Scratch<br>Cyberbullying | Networks and the internet<br>Cyberbullying |
| **4** | Collaborative Learning<br>Recapping year 3 E-safety lessons | Scratch<br>Recapping year 3 E-safety lessons | Website design<br>Recognising what appropriate behaviour in when collaborating with others | HTML<br>Recognising what appropriate behaviour in when collaborating with others | Investigating weather<br>Recognising that information on the internet might not be true or correct and that some sources are more trustworthy than others | Computational thinking<br>Recognising that information on the internet might not be true or correct and that some sources are more trustworthy than others |
| **5** | Search Engines<br>Recapping year 4 E-safety lessons | Animation explored<br>Recapping year 4 E-safety lessons | Microbit<br>Identify possible dangers online and learning how to stay safe.<br>learning to use an online community safely | Programming music<br>Identify possible dangers online and learning how to stay safe.<br>learning to use an online community safely | Mars Mission<br>Recognising that information on the internet might not be true or correct and learning ways of checking validity. | Mars Mission 2<br>Recognising that information on the internet might not be true or correct and learning ways of checking validity. |
| **6** | Bletchley Park 1<br>Recapping year 5 E-safety lessons | Bletchley Park 2<br>Recapping year 5 E-safety lessons | Intro to Python<br>using search engines safely and effectively | Big Data 1<br>using search engines safely and effectively | Big Data 2<br>Recognising that updated software can help to prevent date | Skills Showcase Project<br>Recognising that updated software can help to prevent date |

ACADEMIES TRUST

# ATAM Academy Computing Overview

| Year Group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Su |
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| 7 | Baseline assessment<br><br>File Management, understanding the importance of organising their computer workspace.<br>Be able to follow an acceptable use policy when using the school network<br><br>E-Safety Identifying how to use online collaboration tools respectfully and safely. | Understanding Computers (part 1)<br>Develop and awareness of the hardware and software component required for a standalone computer (CPU, RAM,ROM & STORAGE) | Computational Thinking<br>Understanding how to use decomposition, abstraction, pattern recognition and algorithmic thinking to solve a problem. | Game Programming using Scratch (GUI Programming)<br>Developing computational thinking and visual programming skills. By using a block-based coding environment to develop digital stories, games, and animations. | Multimedia iMedia<br>To be able to plan and produce a clear and detailed visualisation diagram for an intended product. Then create a multimedia product for a specific audience. | Introduction to data used in business (Data Analysis)<br>Student create a spreadsheet using appropriate formulas and graphs |
| 8 | Cyber Security<br>Learn about IT and the Law and how to use technology safely and responsibly. Consider their digital footprint<br>They investigate cybercrime, they look at current scams and understand how to avoid becoming a victim to the latest computing scam. | Control Systems –Algorithm (using Flowol)<br>develop logical reasoning and problem-solving skills, develop programming skills by exploring the world of automatic, autonomous systems. | Text base programming (Introducing Python)<br>Students develop problems solving techniques and high-level coding skills. | Introduction to Data Representation<br>Binary, ASCII, Binary addition | Understanding Computers (Part 2) | Making a Podcast in Audacity(iMedia) |
| 9 | File Management -understand the importance of good file management<br><br>Computer Networks and understanding of how data is transmitted, wireless and wired network and the difference between WWW and the internet. | Image Manipulation<br>To develop and understanding of airbrushing and it effect on consumers. Develop image editing techniques | Algorithms<br>To produce accurate diagrams to solve problems. To create<br>Flow Charts<br>Pseudo code<br>Sort and searching algorithms | Text base programming (Advance Python)<br>Students develop computational thinking skills required to solve real life problem. An enhance their coding skills to include modular programming | System Security<br>Network attacks and prevention | Importance of data in Systems<br>DBSM, Database and SQL |
| 10 | System Architecture and Memory and storage.<br>Students will understand units of data storage and that different storage devices have different uses and capacity | Data Representation<br>To understand how number, characters, image and sound is representing in binary | Networks, connections, and Protocols<br>Understand the difference between wired and wireless networks. | Network Security<br>Be aware of the network vulnerabilities, attacks and prevention methods. | System Software<br>Understand the functionality and differences between operating, application and utility systems. | Ethical, legal, cultural and environmental impacts of digital technology |

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| **11** | Algorithms<br>They analyse problems in computational terms through practical experience of solving such problems, including abstraction, decomposition, logic, algorithms, and data representation. | Programming Fundamentals<br>They analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs. | Producing Robust Programming<br>They used validation and verification methods to design and write robust programs. | Boolean Logic<br>Understand how to read Boolean logic tables with AND, OR and NOT.<br>Be able to combine logic tables.<br>Applying logic operators in truth tables to solve a problem | Develop a understanding or Programming Languages and Integrated Development Languages | Compone preparation<br><br>Component 02 Programming Exam Preparation |