

# SMITH'S WOOD LEARNING JOURNEY

## YEAR 7 COMPUTING

### 7.6 NETWORKS FROM SEMAPHORES TO THE INTERNET

In this unit, you will explore the fascinating world of computer networks, protocols, and the Internet. You will learn about the hardware that enables connectivity, how data travels across networks, and the services provided by the Internet. By the end of this unit, you will have a solid understanding of how these technologies shape our digital lives.

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### 7.5 PROGRAMMING ESSENTIALS IN SCRATCH (PART 2)

This unit focuses on advancing programming skills using Scratch, a visual programming language. Learners explore subroutines, condition-controlled loops, iteration techniques, and lists to create interactive projects like games and quizzes. The unit culminates in a collaborative project and formal assessment to demonstrate proficiency in interactive programming concepts.

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### 7.4 USING MEDIA TO GAIN SUPPORT FOR A CAUSE

In this unit, you will explore the essentials of word processing and digital content creation. You will start by understanding the features of word processors and learning how to apply formatting techniques effectively. Moving through lessons on licensing appropriate images, evaluating source credibility, and understanding plagiarism, learners will build their skills in using digital content responsibly.

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### 7.3 PROGRAMMING ESSENTIALS WITH SCRATCH (PART 1)

In this unit, you will embark on a journey to understand the basic concepts of programming using interactive and engaging activities. From sequencing instructions to using variables, making decisions with selection statements, and iterating through loops, you'll develop essential skills that form the foundation of computer programming. By the end of this unit, you will apply these skills to solve problems and create simple programs.

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### 7.2 MODELLING DATA USING SPREADSHEETS

In this unit, you will learn how to effectively use spreadsheets to organize data, perform calculations, and create visual representations. From basic navigation and formatting to advanced functions and data analysis techniques, you will gain practical skills that are essential for managing and manipulating data efficiently. By the end of this unit, you will be able to confidently navigate, organize, and analyse data using spreadsheets.

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### 7.1 IMPACT OF TECHNOLOGY

Explore essential digital citizenship skills including creating secure passwords, following lab rules, respectful online communication, effective presentation skills, understanding cyberbullying, and identifying online impersonation.

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# SMITH'S WOOD LEARNING JOURNEY

## YEAR 8 COMPUTING

### 8.6 INTRODUCTION TO PYTHON PROGRAMMING

In this unit, you will dive into the world of Python programming, starting from the basics and progressing to more advanced concepts. You will learn how to write and execute Python programs, understand fundamental programming constructs such as variables, loops, conditionals, and functions. By the end of the unit, you will have developed the skills to create interactive and functional programs that demonstrate your understanding of computational thinking and problem-solving in Python.

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### 8.5 MOBILE APP DEVELOPMENT

In this unit, you will embark on a journey to develop your own app, learning key principles of programming and app development along the way. You will explore the concepts of decomposition, event-driven programming, and user input while using a block-based programming language. By the end of the unit, you will have a comprehensive understanding of the app development process from inception to completion.

KNOWLEDGE CHECK

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### 8.4 DEVELOPING FOR THE WEB

In this unit, you will explore the technologies that make up the internet and World Wide Web. Starting with an exploration of the building blocks of the World Wide Web, HTML, and CSS, you will investigate how websites are catalogued and organised for effective retrieval using search engines. By the end of the unit, learners will have a functioning website.

KNOWLEDGE CHECK

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### 8.3 LAYERS OF COMPUTING SYSTEMS

In this unit, you will explore the foundational concepts of computing systems. Starting with understanding the unique ability of computers to execute programs, you will delve into the hardware and software components that make this possible. By the end of the unit, you will have a comprehensive understanding of how computing systems operate and their impact on the modern world.

KNOWLEDGE CHECK

SPRING TERM

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### 8.2 REPRESENTATIONS - FROM CLAY TO SILICON

In this unit, you will explore the concept of representations and how they are used to store, communicate, and process information, with a special focus on binary representations in computing. By the end of this unit, you will have a solid understanding of how information is represented and processed in digital systems.

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### 8.1 MEDIA - VECTOR GRAPHICS

In this unit, you will dive into the world of vector graphics using Inkscape or similar software. Starting with the basics of creating and manipulating shapes, you will gradually build your skills to handle more complex objects and paths. The unit will culminate in an open-ended project where you will apply your knowledge to create a unique vector image. Finally, you will compare vector and bitmap images to understand the best use cases for each type.

KNOWLEDGE CHECK

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# SMITH'S WOOD LEARNING JOURNEY

## YEAR 9 COMPUTING

### 9.6 APPLYING PROGRAMMING SKILLS WITH PHYSICAL COMPUTING

In this unit, you will dive into the world of physical computing using the micro:bit. Through hands-on activities and creative projects, you will learn how to program the micro:bit to interact with its sensors, LEDs, and external hardware components. By the end of the unit, you'll design and build your own physical computing project, applying all the skills and knowledge gained.

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### 9.5 DATA SCIENCE

In this unit, you will embark on a journey to discover the power of data and how it can be used to gain insights and solve real-world problems. Through hands-on activities and practical examples, you will learn about data visualization, statistical analysis, and the investigative processes that data scientists use to extract meaningful information.

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SUMMER TERM

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### 9.4 REPRESENTATIONS – GOING AUDIOVISUAL

In this unit, you will build upon 8.2 and uncover the inner workings of digital images and sound, exploring how these are captured, manipulated, and stored using computers. Through hands-on activities and engaging lessons, you will gain a deeper understanding of pixels, colours, sound waves, and the binary representation that forms the backbone of digital media.

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### 9.3 INTRODUCTION OF CYBERSECURITY

In this unit, you will dive into the fascinating world of cybersecurity, where you'll learn about the importance of protecting data, understanding cyber threats, and defending against them. Throughout the lessons, you will explore real-world scenarios, engage in hands-on activities, and discover how cybersecurity impacts both individuals and organizations.

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### 9.2 MEDIA - ANIMATIONS

The "Exploring 3D Animation with Blender" unit introduces you to the fundamental concepts and techniques of 3D animation using Blender, a powerful open-source software. This unit is designed to progressively build skills from basic modelling and animation principles to more advanced rendering and project creation. Throughout the unit, you will explore how 3D animation impacts various industries and gain hands-on experience in creating their own digital creations.

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### 9.1 PYTHON PROGRAMMING WITH SEQUENCES OF DATA

In this unit, you will delve deeper into Python programming, focusing on lists and loops. Lists allow you to store and manipulate collections of data, while loops enable you to automate repetitive tasks. By the end of the unit, you will have the skills to create programs that utilize lists effectively, iterate over data using loops, and tackle meaningful programming challenges.

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