Satit Prasarnmit
International Programme

Curriculum Pathways

Business & Technology Department

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Satit Prasarnmit International Programme

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: Financial Literacy **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teacher: Ropa Mumhure, Radek Dobias, Kevin Hall**	**Assessment Type 1: Classwork** **Assessment Type 2: Projects**

Year	Term	Unit/s of Work	Core Knowledge & Concepts
7	1	Savings Interest Ways to Save Money and Mental Health Spending	Students will: ● Understand the reasons why young people need to save for the future ● Appreciate that they need to make choices about how to save in the future. ● Know what banks do and why people use them ● Be able to identify ways in which they can save money ● Be able to create a realistic individual savings plan ● Know that saving money can enable better longer term money management ● Know that planned saving may be a necessary part of their financial security ● Plan savings to meet longer term needs ● Appreciate that they are responsible for their future financial security ● Understand how and why saving and borrowing can help us to manage our finances ● Appreciate that interest payments play an important part in understanding how interest works ● Saving can be good for mental health. It means we do not have to borrow money for emergencies.
	2	Ways to Pay Budgeting Keeping Track of a Budget	Students will: ● Recognize how branding can influence our spending choices ● Compare one product against another in terms of its taste, appearance and packaging etc. and make a 'best value' judgment ● Know some of the factors that influence the way in which our purchasing decisions are made ● Be able to use the information to make informed choices about products ● Understand how to plan and keep track of their money ● Appreciate that they may have to evaluate and prioritize spending ● Have a better understanding of how much things cost ● Understand how they can make some economies ● Understand the need for financial planning and budgeting ● Calculate a budget for now and in the future ● Analyze the outcome of a budget and the impact this may have ● Complete an individual financial plan by establishing personal financial goals and considering a budget for spending and saving in the future
	3	Value for Money Know Your Rights	Students will: ● Understand that there are different factors to consider when assessing value for money ● Appreciate that the concept of value for money is influenced by personal preferences and attitudes towards money ● Be able to compare and assess different smartphone tariffs ● Appreciate why smartphone costs vary ● Know how to make comparisons between different offers ● Understand that the consumer is protected by law ● Appreciate that when making a purchase, the consumer has a responsibility too ● Know about their basic consumer rights ● Be able to identify questions to ask before they buy

			• Have practiced how to make a formal, polite complaint
8	1	Borrowing and Debt Repayment, Interest and APR Making Informed Choices Borrowing Products Manageable and Unmanageable Debt	Students will: • Understand the costs of borrowing money • Appreciate that planned borrowing can be a useful way to purchase a high cost item • Be able to make informed decisions about purchasing, based on research and knowledge • Know about longer term financial planning and borrowing • Know that there are events in my life that will have implications on their finances • Plan and develop strategies to manage their money in order to achieve goals in life, e.g., working, saving and borrowing when necessary • Appreciate that planned saving and borrowing can be useful tools in managing money effectively • Differentiate between good and bad debt • Understand the principles of APR • Identify the benefits and implications of borrowing • Recognise the differences between sources of borrowing • Determine appropriate borrowing options depending on personal circumstances • Understand how credit can help people financially and the potential implications of taking on debt • Understand financial markets (i.e. FOREX…etc.) and how they work in terms of investing and trading
	2	Next Steps: Apprenticeship Next Steps: Employment Next Steps: University Student Finance Earnings & Payslips Tax and National Insurance	Students will: • Understand why people work • Appreciate the many different ways to work and the benefits and implications of each • Recognise different wages rates • Identify reasons why people work • Discuss the benefits and implications of different ways of working • Recognise that the expectations of Higher Education may not match the reality. • Identify the career, personal and financial benefits of Higher Education and potential draw-backs. • Recognise the potential rewards compared to the costs of Higher Education. • Understand the key features of a payslip • Understand the principles of Income Tax, National Insurance Contributions, pensions and student loans • Calculate deductions from earnings • Identify and explain the key features of a payslip • Understand the different types of income deductions • Calculate deductions for individuals depending on their income and explain what these calculations mean
	3	Self Employment Methods of Payment Why do we Pay Income Tax Pensions Help for People on Low Incomes	Students will: • Know about work and income and how work choices may impact on our financial situation • Appreciate that certain taxes affect everyone • Understand the role a tax-collecting body plays in the economy • Understand how they have a part to play in the national economy. • Have an increased understanding of terminology surrounding the topic of taxation • Understand that pensions are a way of saving for retirement
9	1	Types of Personal Financial Risk Attitudes to Risk Assessing Risk Investments Financial Idioms Earnings and Deductions	Students will: • Know how to manage risk and emotions associated with money • Understand the emotional and financial impact that being a victim of fraud can have • Know how to recognise and avoid fraudulent offers and scams in a variety of situations when buying things • Understand that there are some financial situations which might be riskier than others and that insurance is one way of protecting ourselves from possible costly incidents • Review and research different investment options • Understand and apply financial idioms used in the English language • Review income tax, pay slips and deductions, with examples using the tax band system employed in Thailand • Learn how to calculate take-home pay after all deductions
	2	Types of Insurance Other Forms of Protection	Students will: • Learn types of insurance and situations when we might need them

		What is Fraud Identity Theft and online fraud	• Understand certain types of insurance are a legal requirement and that others are voluntary • Know about a range of possible scams and be able to take steps to protect their money and identity • Identify and know how to respond to identity theft and fraud • Practice being alert, aware and how to act in different identity theft situations • Shop safely online be able to identify potential online scams/fraud • Stay safe when shopping online and be able to identify potential online scams • Understand the risks and data security implications of using social media
	3	Simple and Compound Interest Money and Banking	Students will: • Understand the concepts of simple and compound interest • Review how interest is applied to investments, savings and depreciating assets Students will: • Learn about the history and functions of money • Learn about the basic functions of central and commercial banks • Research and present the services offered by commercial banks in Thailand

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: KS3 Robotics **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teacher(s): Radek Dobias, Joe O'Sullivan**	**Assessment Type 1: Class Assessments** **Assessment Type 2: Worksheets** **Assessment Type 3: Projects**

Year	Term	Unit(s) of Work	Core Knowledge & Concepts
7	1	Understanding Robotics Ethics Foundations of Robotics Theory Historical Perspectives on Robotics CyberPi Projects	Students will learn: ● The role of ethics in the development and use of robotics. ● Key ethical challenges in robotics, such as privacy, safety, and job displacement. ● Fundamental principles of automation and how robots perform tasks. ● Introduction to control systems and how they govern robot behavior. ● Historical milestones in robotics development. ● The influence of robotics on different sectors, including manufacturing. ● The relationship between robotics and artificial intelligence. ● Basic understanding of how robots are programmed to follow ethical guidelines. ● CyberPi projects that will engage students with hands-on learning. ● Revisiting and deepening understanding of robotics and automation principles. ● Exploring more complex electronic components and their applications in robotics. ● Building on previous programming knowledge with more complex tasks.
	2	Introduction to Electronics in Robotics Getting Started with Scratch Programming Exploring the mBot2 and mBlock IDE	Students will learn: ● Basic concepts of electricity and circuits relevant to robotics. ● Understanding electronic components such as sensors, motors, and controllers. ● Introduction to Scratch programming language and its interface. ● Concepts of logic and control flow in programming. ● Programming basic movements and actions using Scratch. ● Introduction to mBot2: functionality and features. ● Connecting and configuring mBot2 with the mBlock IDE. ● Programming simple robotics tasks using mBlock and mBot2.
	3	Intermediate usage of the mBot2 Distance Detection Project Obstacle Course Projects	Students will learn: ● Understanding the functionality of range sensors in robotics. ● Programming with If-Else control flow to respond to sensor data. ● Displaying sensor data on screens using Scratch. ● Learning the function and application of angle sensors. ● Integrating sensors with movement controls in robotics projects. ● Introduction to multi-touch modules and their programming. ● Creating interactive games, such as a bat and ball game, using motion sensors. ● Generating sound programmatically and creating interactive audio-based projects.
8	1	Scratch Programming Review / Intro	● Learning and/or reviewing basic working knowledge of motion commands such as moving, turning, gliding, pointing, setting, and rotating.

		Make Block Robotics Programming in Scratch	• Understanding of sprites and sprite appearance design including work with multiple layers to create desired effects. • Learning how to create audio effects in Scratch including playing sounds, changing pitch, and altering sound effects. • Grasp and working knowledge of event-based programming in Scratch such as executing code, conditional executing, and broadcasting. • Make Block programming projects in Scratch that involve basic movement, space detection, color recognition, and/or sound.
	2	Make Block Robotics Programming in Python	• Python programming basics including learning about syntax, variables, decision structures, data structures and repetition (loops). • Introduction to correct programming practices / software engineering, in order to learn to write robust and functional code that works. • Robotics projects in Python that involve distance detection and orientation / maze programming as well as other medium-difficulty projects. • Python programming to implement functionality that uses at least 2 different expansion components.
	3	Advanced Make Block Robotics Programming in Scratch and/or Python Exploring the Topics in the Future of Robotics	• Advanced programming robotics projects that involve implementing sophisticated movement patterns and behaviors. • Working with additional robotics kits such as the Spider that go beyond the functionality of the Make Block robotics kits. • Exploring the future of robotics through study of current robotics technology including the projects of Boston Dynamics…etc. • Learning advanced programming structures in Python.

9	1	VEX VR	• **Drive & Turn Challenge**
			  ○ Move forward, backward, and turn at different angles.
			  ○ Goal: Navigate to a marked point.
			• **Drawing Shapes**
			  ○ Use the Pen Tool to draw squares, triangles, or circles.
			  ○ Goal: Create basic geometric patterns.
			• **Obstacle Detection**
			  ○ Use the Distance Sensor to stop before hitting a wall.
			  ○ Goal: Avoid all obstacles on the grid.
			• **Color Recognition**
			  ○ Program the VR Robot to stop or turn when it sees a specific color.
			  ○ Goal: Follow a color-coded path.
			• **Coral Reef Cleanup**
			  ○ Collect and deposit virtual trash.
			  ○ Goal: Achieve the highest cleanup score in limited time.
			• **Disk Mover Challenge**
			  ○ Move disks to target zones using precise movements.
			  ○ Goal: Sort all disks correctly.
			• **Castle Crasher**
			  ○ Knock over objects by pushing them.
			  ○ Goal: Clear the arena in the least number of moves.
			• **Repeat & Forever Loop Maze**
			  ○ Use loops to continuously move through a maze.

			○ Goal: Reach the end with the shortest code.
	2	VEX VR and/or VEX IQ	● **Pattern Creator** ○ Use nested loops to create star, spiral, or grid patterns. ○ Goal: Make artistic designs using logic-based code. ● **Coordinate Navigation** ○ Use the Location Sensor to move to exact (X, Y) positions. ○ Goal: Visit all checkpoints in the shortest path. ● **Autonomous Challenge** ○ Combine sensors, loops, and conditions to complete a task without manual intervention. ○ Goal: Create a self-navigating program for a complex playground. ● **Create Your Own Playground Game** ○ Design a scoring challenge or maze. ○ Goal: Exchange and solve each other's games. ● **Artistic Showcase** ○ Use Pen Drawing to make creative art or logos. ○ Goal: Present unique patterns or designs. ● **Build & Drive** ○ Assemble the standard Clawbot or BaseBot. ○ Learn to drive forward, backward, and turn accurately. ○ Goal: Navigate a taped path on the floor. ● **Simple Arm Control** ○ Program the claw or arm to lift and lower objects. ○ Goal: Pick up and place a small object in a marked zone.
	3	VEX IQ	● **Bumper Switch Task** ○ Use bumper switches to stop the robot when it hits a wall. ○ Goal: Drive until contact, then reverse or turn. ● **Color Sensor Line Following** ○ Program the robot to follow a black line on a white surface. ○ Goal: Reach the end of the line with minimal deviation. ● **Distance Sensor Obstacle Avoidance** ○ Detect objects and steer around them. ○ Goal: Move from start to finish without collisions. ● **Precision Parking Challenge** ○ Use encoder values to drive specific distances and turn at set angles. ○ Goal: Park the robot perfectly in a "garage" box.

			● **Shape Driving** ○ Program the robot to drive in a square, triangle, or figure-eight. ○ Goal: Complete shapes accurately using loops. ● **Object Transport Mission** ○ Move game elements from one area to another using the claw. ○ Goal: Complete as many transfers as possible in 1 minute. ● **Mini Tower Building** ○ Stack blocks or rings in a specific order. ○ Goal: Build a stable structure using the robot's arm. ● **Autonomous Path Finder** ○ Combine multiple sensors to navigate a maze or course. ○ Goal: Reach the endpoint without manual control. ● **Custom Attachment Design** ○ Build a unique tool (plow, scoop, sweeper) to complete a special task. ○ Goal: Demonstrate how attachments improve performance. ● **Robot Sports** ○ Create a soccer, sumo, or tug-of-war challenge. ○ Goal: Compete in teams using simple VEX IQ robots. ● **Innovation Project** ○ Design a robot for a real-world purpose (e.g., recycling, delivery). ○ Goal: Present and demo your solution.

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: Business **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teachers: Brandon Allen, Kevin Hall**	**Assessment Type 1: Class assessment**
	Assessment Type 2: Notebook
	Assessment Type 3: Project
	Assessment Type 4: Worksheet
	Assessment Type 5: End-of-unit test
	Assessment Type 6: Mock exam (Year 11 IGCSE, AS and AL only)
	Assessment Type 7: End-of-term exam
	Assessment Type 8: End-of-year exam (Year 10 only)

Year	Term	Unit(s) of Work	Core Knowledge & Concepts
10 IGCSE	1	Understanding business activity People in business	● Unit 1 introduces the underlying ideas and concepts of business and includes the purpose and nature of business activity and how businesses can be classified. Further topics include enterprise and entrepreneurs, types of business organization, and business and stakeholder objectives. ● Unit 2 focuses on the functional area of human resources and includes the importance and methods of motivating a workforce. How businesses are organized and managed and the methods of recruitment, selection and training of employees are also considered. ● Learners focus on developing knowledge and understanding of key concepts. ● Simple scenarios, case studies and diagrams are introduced so that students may start to apply the knowledge learned. ● Students are encouraged to look at media such as newspapers, internet and television to be aware of current business events, which will be discussed during lessons. ● Students will make effective use of relevant terminology, concepts and methods, and recognize the strengths and limitations of the ideas used in business. ● Learners will appreciate the perspectives of a range of stakeholders in relation to the business environment, individuals, society, government and enterprise.
	2	People in business (cont.) Marketing	● The final topic of unit 2 is completed as learners cover the importance and methods of effective internal and external communication. ● Unit 3 includes the role of marketing, the distinctions between niche and mass markets and the techniques of market segmentation. The methods and importance of market research are also covered. ● Students apply knowledge to simple scenarios using a range of activities. ● Students begin to focus on the skill of analysis in order to think about the implications of points through discussions and question and answer. ● Learners will distinguish between facts and opinions, and evaluate qualitative and quantitative data in order to help build arguments and make informed judgments. ● Learners are asked to apply their knowledge and critical understanding to current issues and problems in a wide range of business contexts.
	3	Marketing (cont.)	● Unit 3 is completed in term 3 as it considers the central role of the marketing mix including promotion, place, product and price, and the use of marketing strategies to influence consumer decisions at home and in new foreign markets. ● Students focus on the skill of evaluation by asking for opinions and decisions in given scenarios. ● Longer case study scenarios are introduced including those from exam-style papers. ● Learners develop knowledge and understanding of the major groups and organizations within and outside business, and consider ways in which they are able to influence objectives, decisions and

			activities.
11 **IGCSE**	1	Operations management Financial information and financial decisions	● Unit 4 focuses on the functional area of production and includes the meaning and methods of production and how productivity can be increased. The different costs of production and break-even analysis are also covered. The section concludes with the importance and methods of achieving quality in the production process and location decisions of businesses. ● Unit 5 considers the topics of financial information and financial decisions and covers the need for and sources of business finance, cash-flow forecasting and working capital. Simple income statements are covered as well. ● A range of activities are continued in order to enable students to practice each of the four skills. ● Basic revision skills and exam techniques for external exams are introduced. ● Students develop knowledge and understanding of how the main types of businesses are organized, financed and operated, and how their relations with other organizations, consumers, employees, owners and society are regulated. ● Learners develop skills of numeracy, literacy, enquiry, selection and use of relevant sources of information, presentation and interpretation.
	2	Financial information and decisions (cont.) External influences on business activity	● Unit 5 will continue with financial information and decisions focusing on statements of financial position and the analysis of accounts including why and how accounts are used. ● Unit 6 focuses on different external influences on business activity and how these impact on a business. It includes government influences on economic, environmental and ethical issues and how they impact on the functional areas of businesses. In addition, the international economy including globalization and its effects on businesses and governments, multinational businesses and exchange rates are important issues. ● Learners develop an awareness of the nature and significance of innovation and change within the context of business activities.
	3	Revision	● Students focus on developing examination techniques including command words, question focus, and time management. ● Learners acquire a foundation for further study of business or other subjects.
12 **AS Level**	1	Business and its environment Human resource management Marketing	● Business and its environment is concerned with understanding the nature and purpose of business activity and identifying structures, functions, cultures and objectives of different business organizations. The impact of political, economic, social, technological, legal, environmental and ethical factors and how these might influence business activity is considered. ● People in organizations focuses on how businesses can develop and use policies, procedures, structures, systems and approaches to management and leadership that will harness the human potential within the organization and achieve organizational goals. The importance of motivation techniques and theories in understanding employee needs will be considered. The contribution to business success made by human resource management through effective workforce planning and the recruitment, selection and training of workers will also be explored. ● Marketing develops an understanding of the importance of the marketing function for business competitiveness. Learners will understand that the central idea of marketing is the objective of satisfying the needs and wants of customers through effective market research, applying an appropriate marketing mix and establishing an organization with a strong customer focus. ● Learners will gain an understanding of business concepts and their application to business situations. ● Learners will understand and appreciate the nature and scope of business, and the role of business in society, internationally and within Thailand. ● Students gain the capacity to analyze characteristics and activities of business organizations and how they respond to the changing demands of their environments.
	2	Marketing (cont.) Operations management Finance and accounting	● Term 2 continues with marketing in order to help students understand the relationship between marketing and other business functions such as operations management, finance and human resource management. ● Operations management is the discipline of how resources are managed to achieve the efficient production and provision of goods and services. Learners develop an understanding of the benefits and limitations of a variety of techniques and analytical frameworks used by operations and project managers. Central to the understanding of how successful operations and project management support effective manufacturing and service businesses is a recognition of the importance of innovation in product and service delivery in dynamic and volatile business environments. ● Finance and accounting introduces students to the importance of the management of finance, the keeping of and analysis of accounts, and the assessment of business financial performance. Students will consider the basic principles and techniques of financial management, the value of financial statements and some key accounting techniques used to promote profit, measure performance and exert control in business organizations, and the use of financial management information in managerial decision making. ● Students develop quantitative, problem-solving, decision-making and communication skills.
	3	Revision	● Students focus on developing examination techniques including command words, question focus, and time management. ● Learners acquire a foundation for further study of business or other subjects.
13 **A Level**	1	Business and its environment Human resource management	● Business and its environment is concerned with understanding the nature and purpose of business activity and identifying structures, functions, cultures and objectives of different business organizations. ● Students will use awareness of business concepts to make decisions and develop plans of action that

		Marketing Operations management	would allow a business to react positively to external changes. Emphasis is on recognizing the potential conflict between objectives and the resolution of such conflicts. There should be an appreciation of the nature of the uncertain business environment and the development of business plans of action which aim to respond effectively to the changing business environment. ● The people in organizations unit focuses on how businesses can develop and use policies, procedures, structures, systems and approaches to management and leadership that will harness the human potential within the organization and achieve organizational goals. ● Learners understand the interrelationship between organizational structure, leadership style and management of people within a business. Learners will be expected to evaluate the implications of these for the effective planning and management of human resources. ● Marketing will develop an understanding of the importance of the marketing function for business competitiveness as well as the significance of market orientation. The emphasis of this unit is on using marketing concepts to develop strategies and evaluate changing situations and options. ● Operations and project management will discuss how resources are managed to achieve the efficient production and provision of goods and services. This topic area promotes understanding of operations and project decisions and how design, planning, quality and workforce issues interrelate to achieve operations and project objectives.
	2	Operations management (cont.) Finance and accounting Strategic management	● Term 2 continues with operations and project management in order to help students develop an understanding of the benefits and limitations of a variety of techniques and analytical frameworks used by operations and project managers. Central to the understanding of how successful operations and project management support effective manufacturing and service businesses is a recognition of the importance of innovation in product and service delivery in dynamic and volatile business environments. ● Finance and accounting will introduce students to the importance of the management of finance, the keeping of an analysis of accounts, and the assessment of business and financial performance. Students use accounting information to aid strategic decision making and to evaluate the performance of a business and business investment projects in financial terms. ● Strategic management explores business concepts and theories and considers why strategy is practiced in a range of business contexts. Strategy in business is concerned with the key decisions that are taken to ensure that businesses survive and succeed in the long term. Such decisions often involve initiating and managing major change policies and programs. The topic area investigates the strategic management process model of strategic analysis, strategic choice and strategic implementation. The associated strategic thinking and analysis tools that help to frame choices and put resulting strategies into action are also considered.
	3	Revision	● Students focus on developing examination techniques including command words, question focus, and time management. ● Learners acquire a foundation for further study of business or other subjects.

Satit Prasarnmit International Programme

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: Computer Science **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teacher: Shilpa Chauhan**	**Assessment Type 1: Class Assessments** **Assessment Type 2: End of Unit tests/Interactive Quizzes** **Assessment Type 3: Projects** **Assessment Type 4: End of Term Tests** **Assessment Type 5: Mock Exam (Year 11,12 &13)**

Year	Term	Unit/s of Work	Core Knowledge & Concepts
10 IGCSE	1	Data Representation	Students will: ● Recognise the use of binary numbers in computer systems ● Convert positive denary integers into binary and positive binary integers into denary ● Show understanding of the concept of a byte and how the byte is used to measure memory size ● Represent numbers stored in registers and main memory as hexadecimal ● Identify current uses of hexadecimal numbers in computing, such as defining colours in Hypertext Markup Language (HTML), Media Access Control (MAC) addresses, assembly languages and machine code, debugging
		Data Transmission	● Show understanding of what is meant by transmission of data ● Distinguish between serial and parallel data transmission ● Distinguish between simplex, duplex and half-duplex data transmission ● Show understanding of the reasons for choosing serial or parallel data transmission ● Show understanding of the need to check for errors ● Explain how parity bits are used for error detection
		Hardware	● Use logic gates to create electronic circuits ● Understand and define the functions of NOT, AND, OR, NAND, NOR and XOR (EOR) gates, including the binary output produced from all the possible binary inputs ● Draw truth tables and recognise a logic gate from its truth table ● Show understanding of the basic Von Neumann model for a computer system and the stored program concept
	2	Software	Students will: ● Show understanding of the difference between: primary, secondary and off-line storage and provide examples of each ● Describe the principles of operation of a range of types of storage device and media including magnetic, optical and solid state ● Describe how these principles are applied to currently available storage solutions, such as SSDs, HDDs, USB flash memory, DVDs, CDs and Blu-ray discs ● Calculate the storage requirement of a file ● Describe the purpose of an operating system ● Show understanding of the need for interrupts
		The internet and its uses	● Show understanding of the security aspects of using the Internet and understand what methods are available to help minimise the risks ● Show understanding of the Internet risks associated with malware, including viruses, spyware and hacking ● Explain how anti-virus and other protection software helps to protect the user from security risks ● Show understanding of the role of the browser ● Show understanding of the role of an Internet Service Provider (ISP)

		Automated and emerging technologies	● Show understanding of Automated systems, Robotics and Artificial intelligence
	3	Algorithm design and problem solving (part 1)	Students will: ● Understand and use pseudocode for assignment, using ← ● Understand and use pseudocode, using the following conditional statements: IF … THEN … ELSE … ENDIF CASE … OF … OTHERWISE … ENDCASE ● Understand and use pseudocode, using the following loop structures: FOR … TO … NEXT REPEAT … UNTIL WHILE … DO … ENDWHILE ● Understand and use pseudocode, using the following commands and statements: INPUT and OUTPUT (e.g. READ and PRINT) totalling (e.g. Sum ← Sum + Number) counting (e.g. Count ← Count + 1)
11 **IGCSE**	1	Algorithm design and problem solving (part 2) Programming (part 1) Programming (part 2) Databases	Students will: ● Show understanding that every computer system is made up of subsystems, which in turn are made up of further subsystems ● Use top-down design, structure diagrams, flowcharts, pseudocode, library routines and subroutines ● Work out the purpose of a given algorithm ● Explain standard methods of solution ● Declare and use variables and constants ● Understand and use basic data types: Integer, Real, Char, String and Boolean ● Understand and use the concepts of sequence, selection, repetition, totalling and counting ● Use predefined procedures/functions ● Declare and use one-dimensional arrays, for example: A[1:n] ● Show understanding of the use of one-dimensional arrays, including the use of a variable as an index in an array ● Read or write values in an array using a FOR … TO … NEXT loop ● Define a single-table database from given data storage requirements ● Choose and specify suitable data types ● Choose a suitable primary key for a database table ● Perform a query-by-example from given search criteria
	2	Use of pre-release materials Revision and exam preparation	
12 **AS-Level**	1	Information Representation Communication Hardware Processor Fundamentals	Students will: ● Convert a number from one base to another. ● Perform binary addition and subtraction. ● Explain the purpose and benefits of different number bases. ● Explain the use of character sets in computer systems. ● Use ASCII, extended ASCII and Unicode to represent textual data. ● Explain how a bitmap image is represented and stored on a computer. ● Explain the purpose and benefits of networking devices. ● Describe the characteristics of a LAN and a WAN. Explain whether a given network is a LAN or a WAN. ● Describe the use, benefits and drawbacks of cloud computing. ● Describe the characteristics of a client-server and peer-to-peer network. ● Explain the benefits and drawbacks of a client-server and peer-to-peer network. ● Justify the use of a client-server or peer-to-peer network in a given scenario. ● Explain the difference between primary and secondary storage. ● Identify items that are stored in secondary storage. ● Explain the difference(s) between RAM and ROM. ● Explain the difference(s) between SRAM and DRAM. ● Explain the difference(s) between PROM, EPROM and EEPROM. ● Describe the principal operations of a range of hardware devices. ● Describe the Von Neumann model for a computer system. ● Describe the purpose and role of each register in the Von Neumann model. ● Describe the purpose of and role of the components within the processor.

		System Software
		
		Security Privacy & Data Integrity
		
		Ethics & Ownership
		
		Databases
		
		Algorithm Design and Problem Solving
		
		Data Types and Structures
		
		Programming
			● Explain how the different ports allow connection to peripherals.
			● Describe the stages of the Fetch-Execute cycle.
			● Explain the purpose of interrupts. Describe how interrupts are handled in the F-E cycle.
			
			● Explain why a computer system requires an Operating System.
			● Explain the key management tasks carried out by the Operating System.
			● Explain the need for utility software.
			● Describe the purpose and function of typical utility software.
			● Explain the purpose of program libraries and the benefits of using a library (including DLL).
			
			● Explain the difference between security, integrity and privacy of data.
			● Describe the threats to data and computer systems.
			● Explain how threats can be prevented or restricted.
			● Describe methods to secure data.
			● Describe different validation routines.
			
			● Explain the need for ethics and to act ethically.
			● Discuss the impact of acting ethically and unethically.
			● Identify ways a person can act ethically and/or unethically in a given situation.
			● Describe the key features of a range of software licences.
			● Identify the need for Artificial Intelligence (AI).
			● Discuss the benefits and drawbacks of AI.
			
			● Explain the limitations of a file-based approach.
			● Describe the features of a relational database that addresses the limitations of a file-based approach.
			● Create entity-relationship (E-R) diagrams to document a database design.
			● Describe the normalisation process of a database.
			● Create a normalised database design for a given database description.
			
			● Explain the purpose of and need for abstraction.
			● Create an abstract model of a system.
			● Explain the purpose of and need for decomposition.
			● Decompose a problem into its sub-problems.
			● Select appropriate identifier names.
			● Write programs in pseudocode using input, process and output.
			
			● Select and use appropriate data types for a problem solution.
			● Use a record structure to hold a set of different data types under one identifier.
			● Use the technical terms associated with arrays.
			● Select a suitable data structure (1D or 2D array) to use for a given task.
			● Write pseudocode for 1D and 2D arrays.
			
			● Write pseudocode from a given design presented as either a program flowchart or structured English.
			● Write pseudocode statements for:
			  ○ the declaration of variables and constants
			  ○ the assignment of values to variables and constants
			  ○ expressions involving any of the arithmetic or logical operators input from the keyboard and output to the console
			● Use pseudocode to write:
			  ○ an IF structure including ELSE and nested IF statements
			  ○ a CASE statement
			  ○ a count-controlled loop
			  ○ a post-condition loop
			  ○ a precondition loop

	2	Software Development Use of pre-release materials Revision and exam preparation	Students will: ● Explain the purpose of a development life cycle. ● Explain the need for different development life cycles depending on the program being developed. ● Describe the principles, benefits and drawbacks of each type of life cycle. ● Describe the analysis, design, coding, testing and maintenance stages in the program development life cycle.

Y13 A-Level	1	Data Representation Communication and internet technologies Hardware and Virtual Machines System Software Security	Students will: ● Explain User defined data types ● Define and use non-composite types Including enumerated, pointer ● Define and use composite data types Including set, record and class / object ● Choose and design an appropriate user-defined datatype for a given problem ● Explain the methods of file organisation and select an appropriate method of file organisation and file access for a given problem Including serial, sequential (using a key field), random (using a record key) ● Explain methods of file access Including Sequential access for serial and sequential files ● Explain why a protocol is essential for communication between computers ● Explain how protocol implementation can be viewed as a stack, where each layer has its own functionality ● Show understanding of the TCP/IP protocol suite Four Layers (Application, Transport, Internet, Link) ● Explain Reduced Instruction Set Computers (RISC) and Complex Instruction Set Computers (CISC) processors ● Differences between RISC and CISC ● Understand interrupt handling on CISC and RISC processors ● Explain the importance /use of pipelining and registers in RISC processors ● Explain how an OS can maximise the use of resources ● Describe the ways in which the user interface hides the complexities of the hardware from the user ● Explain process management ● The concept of multi-tasking and a process ● The process states: running, ready and blocked ● Explain how encryption works ● Including the use of public key, private key, plain text, cipher text, encryption, symmetric key cryptography and asymmetric key cryptography ● How the keys can be used to send a private message from the public to an individual/organisation ● How the keys can be used to send a verified message to the public
	2	Artificial Intelligence (AI) Algorithms Recursion Programming Paradigms File Processing and Exception Handling	Students will: ● Explain how graphs can be used to aid Artificial Intelligence (AI) ● Structure of a graph ● Use A* and Dijkstra's algorithms to perform searches on a graph ● Explain linear and binary searching methods ● Write an algorithm to implement a linear search ● Write an algorithm to implement a binary search ● Show understanding of recursion ● Write and trace recursive algorithms ● Show awareness of what a compiler has to do to translate recursive programming code ● Write code to perform file-processing operations ● Open (in read, write, append mode) and close a file ● Read a record from a file and write a record to a file ● Perform file-processing operations on serial, sequential, random files ● Show understanding of an exception and the importance of exception handling ● Know when it is appropriate to use exception handling ● Write program code to use exception handling

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: KS3 Computing **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teacher(s): Radek Dobias, Joe O'Sullivan**	**Assessment Type 1: Class Assessments** **Assessment Type 2: Worksheets** **Assessment Type 3: Projects**

Year	Term	Unit/s of Work	Core Knowledge & Concepts
7	1	Under the hood of a computer Representation and Encoding Drawing and manipulating shapes Creating an animation	Students will learn: ● Detailed study of key computer components: CPU (Central Processing Unit), memory (RAM), storage devices (HDD, SSD), and input/output devices. ● Introduction to the concept of a motherboard and how different components are interconnected. ● Exploration of the evolution of computing devices from early mechanical calculators to modern computers. ● Encoding, real life encoding schemes and ASCII ● Basics of the binary number system: understanding bits and bytes, and why computers use binary. ● Simple binary arithmetic and its application in computing. ● Introduction to number conversions between binary and decimal systems.
	2	The foundations of computing How the web works and web page creation Human-computer interaction Representing images	Students will learn: ● ● Internet structure and functions. ● Overview of network types (LAN, WAN, the Internet) and how data is transmitted through these networks. ● Basic principles of IP addresses, DNS (Domain Name System), and the role of servers and clients. ● Basics of web page creation. ● Introduction to HTML (Hypertext Markup Language) for structuring web pages. ● Basics of CSS (Cascading Style Sheets) for styling web pages. ● Understanding how web pages are served and viewed on the internet. ● Human-Computer Interaction (HCI) concepts. ● Principles of HCI and its importance in designing user interfaces. ● Discussing usability, accessibility, and the user experience in digital environments. ● Digital image representation. ● How images are represented and stored in computers using pixels and color models (e.g., RGB). ● Understanding image resolution, compression, and file formats.
	3	Exploring Scratch Programming	Students will learn: ● Defining algorithms and their importance in problem-solving. ● Planning and writing step-by-step algorithms to perform specific tasks, such as drawing shapes. ● Introduction to the Scratch programming environment and its block-based programming approach. ● Using loops for repetition to draw complex patterns and shapes efficiently. ● Understanding and applying conditional logic to make decisions within a program. ● Introduction to the concept of procedures (functions) to modularize code and reuse code blocks. ● Creating and using custom blocks (procedures) in Scratch to draw complex shapes or patterns.

			• Developing computational thinking skills by decomposing problems, recognizing patterns, and creating algorithms. • Predicting the output of programs and using debugging strategies to identify and fix errors.
8	1	Computing Fundamentals Data representation Staying Safe Online Exploring Documents Hardware / Software Typing	Students will learn: • The basics of hardware and software • The functions of hardware components • Data representation - text, images and sound(basics) • Learn about dangers online and how to stay safe when using the internet • Create and edit a text document • Add images or other objects to a document • Refine and organize the layout of a document for a specific audience • Learn how to type using the correct technique, focussing on increasing accuracy and speed
	2	Binary and Hex conversions Exploring Spreadsheets Exploring Programming Programming for a Purpose Python Coding Basics	Students will learn: • Learn about binary and hexadecimal number systems and conversions • Learn how to enter labels and numbers into a spreadsheet; enter simple formulae • Learn how to enter simple formulae; learn about the SUM function • Learn how to copy simple formulae; create a graph • Learn how to change data; use a spreadsheet to answer a modeled scenario (‘what if’) question • Learn about the Average, Max and Min functions, change the way a spreadsheet looks • Plan an algorithm to draw a simple repeating shape or pattern • Learn which blocks in Scratch are needed to incorporate repetition into a program • Start learning how to create a program to produce a simple repeating shape or pattern • Learn how to use repetition to produce an efficient program • Create a procedure and use it in a program to draw a complex shape or pattern • Learn how to predict the output of a program that uses repetition • Predict the outcome of an interactive program that uses input and selection • Create and test an interactive program using selection, input and output
	3	AI Innovation and Engineering Lab	Students will learn: • Create basic, real-world, project-based creative designs through software programming and hardware construction on the lines of IoT, AI and Network Engineering • Various possibilities and options for computing careers
9	1	Cracking the code: binary characters, ciphers and encryption Basic Python	Students will learn: • Understanding binary representation of data, including characters and numbers. • Introduction to basic encryption techniques, ciphers, and their role in securing information. • Python variables • Python data structures • Python decision structures • Python repetition • Writing simple code
	2	Computer Networks Intermediate Python	• Basic networking concepts. • Exploration of network types, topologies, and devices. • Network management and security considerations. • Intermediate python coding. • Learning to write python code from scratch.
	3	Exploring Python Code and Projects	• Number Guessing Game • Magic 8 Ball • Simple Calculator • Quiz Game • Rock, Paper, Scissors • To-Do List • Dice Roller Simulator • Basic Password Generator • Days Until My Birthday • Even or Odd Checker

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: Economics **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teacher: Ropa Mumhure , David Persey**	**Assessment Type 1: Class Assessments**
	Assessment Type 2: End of Unit tests/Interactive Quizzes
	Assessment Type 3: Notebook
	Assessment Type 4: End of Term Tests
	Assessment Type 5: Mock Exam (Year 11, 12 and 13 only)

Year	Term	Unit(s) of Work	Core Knowledge & Concepts
10 IGCSE	1	The basic economic problem The allocation of resources	● Students will: ● Understand the fundamental ideas and concepts that underpin the study of economics ● Define and give examples of the economic problem in the contexts of: consumers; workers; producers; and governments ● Learn the difference between economic goods and free goods ● Understand decisions made by consumers, workers, producers and governments when allocating their resources
	2	The allocation of resources (cont.)	Students will: ● Understand and explain price determination ● Gain an understanding of price elasticity of demand and supply with the aid of calculations ● Evaluate the advantages and disadvantages of market economic systems ● Cover the features, benefits and issues that can arise in the different types of economies: planned, market and free market, and the roles of the public and private sectors ● Understand causes and consequences of market failure are discussed which leads into cost-benefit framework and analysis
	3	Microeconomic decision makers	Students will: ● Learn the forms, functions and characteristics of money ● Understand the role and importance of central banks and commercial banks for government, producers and consumers ● Understand the influences on spending, saving and borrowing including income, the rate of interest and confidence between different households and over time.
11 IGCSE	1	Government and the macro economy	Students will: ● Understand that governments have different macroeconomic aims, and conflicts often arise between the measures used to achieve them. ● Discuss reasons behind the choice of aims and the criteria that governments set for each aim ● Learn possible conflicts between aims: full employment versus stable prices; economic growth versus balance of payments stability; and full employment versus balance of payments stability
	2	Economic development, international trade and globalisation	Students will: ● Study the effects of changes in the size and structure of population and of other influences on development in a variety of countries

			● Learn the reasons for differences in living standards and income distribution within and between countries ● Understand the causes of poverty including unemployment, low wages, illness and age ● Discuss the concept of an optimum population. The effects of increases and decreases in population size and changes in the age and gender distribution of population
12 **AS Level**	1	Basic economic ideas and resource allocation The price system and the microeconomy Government microeconomic intervention	Students will: ● Understand the fundamental economic problem of scarcity and the need to make choices at all levels (individuals, firms, governments) ● Discuss the nature and definition of opportunity cost, arising from choices ● Study basic questions of resource allocation: what to produce, how to produce and for whom to produce ● Discuss price elasticity, income elasticity and cross elasticity of demand ● Learn about variations in price elasticity ● Study the factors affecting price elasticity of demand, income elasticity of demand and cross elasticity of demand ● Study the reasons for government intervention in markets: addressing the non-provision of public goods, over-consumption of demerit goods and the under-consumption of merit goods; controlling prices in markets
	2	The Macroeconomy Government macroeconomic intervention	Students will: ● Understand aggregate Demand and Aggregate Supply analysis: components and determinants of AD, shape of the AD curve (downward sloping) ● Study causes of a shift in the AD curve ● Learn the definition of Aggregate Supply (AS), determinants of AS ● Discuss government macroeconomic policy objectives and use of government policy to achieve macroeconomic objectives: price stability, low unemployment, economic growth ● Learn about Fiscal policy: government budget, deficit and surplus ● Study the meaning and significance of national income statistics and measures of economic growth ● Learn about international trade, trade and exchange rate policy and control of the balance of payments
13 **A Level**	1	The Price System and the Microeconomy Government Microeconomic intervention	Students will: ● Definition and calculate of measures of utility ● Learn about the uses and limitations of utility theory ● Study the equi-marginal principle ● Discuss efficiency - productive, allocative, dynamic and pareto efficiency ● Understand the reasons and measures of market failure ● Study government policies to correct market failure and redistribute income and wealth
	2	The Macroeconomy and Macroeconomic Policy International economic issues	Students will: ● Understand employment and taxation ● Understand the principles of money and banking ● Understand the basic principles of sustainable economic development ● Study different policy options used to achieve the government's macroeconomic objectives ● Understand the causes of disequilibrium in the balance of payments ● Study how to correct the disequilibrium in the balance of payments ● Learn about exchange rates - nominal, real and trade-weighted exchange rates ● Compare and contrast different measures of economic development ● Study the impact of globalisation on the relationships between countries at different stages of development

Curriculum Pathway

Academic Year 2025-2026

Department: Business and Technology

Department Details	Assessment Types
Subject: Enterprise **Head of Department: Ropa Mumhure** **Head of Department Email: ropa.mu@spip.in.th** **Subject Teacher: Kevin Hall**	**Assessment Type 1: Class Assessments**
	Assessment Type 2: Worksheets
	Assessment Type 3: Notebook
	Assessment Type 4: End of Term Tests
	Assessment Type 5: Mock Exam (Year 11 only)
	Assessment Type 6: Coursework Project

Year	Term	Unit/s of Work	Core Knowledge & Concepts
10 IGCSE	1	Introduction to enterprise Setting up a new enterprise Enterprise skills Enterprise opportunities, risk, legal obligations and ethical considerations Negotiation	Students will: • Understand what it means to be enterprising, and the skills required to be enterprising • Develop the ability to work in an enterprising and independent way • Recognise that some people have these skills naturally and others have to develop them • Decide if the risk is worth taking and plan how to manage the risks • Understand the negotiation process and its stages and what is involved
	2	Finance Business planning Markets and customers	Students will: ● Develop and apply knowledge, understanding and skills to contemporary enterprise issues in a range of local, national and global contexts ● Appreciate the roles and perspectives of a range of other people and organisations involved in enterprise and the importance of ethical considerations ● Understand financial terms such as cash flow forecast, break-even and income statement ● Understand different enterprises have different aims and objectives ● Recognize the purpose and importance of business plans and what they contain
	3	Help and support for enterprise Communication	Students will: ● Investigate the world of work and entrepreneurial organisations ● Develop the ability to communicate effectively, in a variety of situations, using a range of appropriate techniques ● Select appropriate marketing methods for different enterprises ● Recognize the appropriateness of different types of communication for communicating with internal and external stakeholders ● Understand the need for careful planning, considering possible outcomes before, during and after the event

11 IGCSE	1	Task 1 – choosing a suitable project or activity Task 2A – planning the project Task 2B – Planning for financing the project OR Planning marketing communications	Students will: ● Develop their enterprise skills by planning and implementing their own enterprise project ● Make effective use of relevant terms, concepts and methods when discussing enterprise and enterprising behaviour ● Outline and analyse advantages and disadvantages of each idea ● Collect, present and analyse appropriate data (e.g. market research or SWOT) for each possible idea. ● Give a detailed explanation of the reasons for the choice of project and a justified decision, including why other idea(s) were rejected ● Identify of potential problems and solutions for two or three activities from the action plan ● Develop communication materials appropriate for the intended audience and purpose ● Apply knowledge and critical understanding to familiar and unfamiliar enterprise problems and issues
	2	Task 3 – implementing the plan Task 4 – evaluating the project	Students will: ● Use enterprise skills to implement the plan ● Analyse, interpret, and evaluate information ● Demonstrate knowledge and understanding of the concepts, skills and terminology relating to enterprise ● Explore and find solutions to enterprise problems and issues

Satit Prasarnmit
International Programme

Curriculum Pathways

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