FERNY GROVE
State High School

ELearning Department
Year 10 INT *Fundamentals of JavaScript*
Lesson Overview

This Ferny Grove State High School Unit is based on

Unit 2 **Fundamentals of JavaScript**	**Duration: 30 Unit Lessons x 70 minutes**

Week 1 – Introduction into JavaScript programming (1 Week)		
KNOWLEDGE – students will learn about: **SKILL** – students will learn to: Understand Object orientated programming languages recap: • Introduce new class members • Rules and regulations recap • Example using JavaScript • Content for this term of work overview • Video of JavaScript projects in action allowing for the scope of the task to be understood. INTRO TO JAVASCRIPT	**KNOWLEDGE** – students will learn about: **SKILL** – students will learn to: Hardware and Software • Decomposing Problems • Basic programming structure • Looking over correct terminology JavaScript vs Java and uses • Computational Thinking • Pseudocode • Algorithmic structure and JavaScript	**KNOWLEDGE** – students will learn about: **SKILL** – students will learn to: Pseudocode and Flow • IPO charts • Introduction into flowcharts • Structure • Purpose of flowcharts • Variables • Side by side comparisons
Week 2 – Programs and Flowcharts (1 Week)		
KNOWLEDGE – students will learn about: **SKILL** – students will learn to:	**KNOWLEDGE** – students will learn about: **SKILL** – students will learn to:	**KNOWLEDGE** – students will learn about: **SKILL** – students will learn to:

Pseudocode and Flow • IPO charts • Introduction into flowcharts • Structure • Purpose of flowcharts • Variables Side by side comparisons	Diagrammatical Algorithms in Flow charts • Recap: INPUT, PROCESS, OUTPUT, DECISION. • Conditional statements • Moving into directional flow loops and functions. • How these more advanced options should be used and why they are important. • Understanding that Flowcharts can only represent one action at any one time. Convert this back into English. This is Pseudocode. • Complete activities on Pseudocode and bring the understanding of Algorithms, Flow and Pseudocode together. This allows for the Syntax preparation Students create Syntax sheet from JavaScript API Website for language references	Diagrammatical Algorithms in Flow charts • How these more advanced options should be used and why they are important. • Understanding that Flowcharts can only represent one action at any one time. Convert this back into English. This is Pseudocode. • Complete activities on Pseudocode and bring the understanding of Algorithms, Flow and Pseudocode together. This allows for the Syntax preparation Students create Syntax sheet from JavaScript API Website for language references
Week 3 – JavaScript Project worksheets (6 Weeks)		
KNOWLEDGE – Lesson 1 of 2 **SKILL** – students will learn to: Development of worksheet standards • Opening first worksheet and following the guidelines in iterative format • Branching • Draw.io • JavaScript on hands tutorial • Understanding outputs Base.html	**KNOWLEDGE** – Lesson 2 of 2 **SKILL** – students will learn to: Development of worksheet standards • Opening first worksheet and following the guidelines in iterative format • Branching • Draw.io • JavaScript on hands tutorial • Understanding outputs Base.html	**KNOWLEDGE** – Lesson 1 of 2 **SKILL** – students will learn to: Development of worksheet standards • Opening first worksheet and following the guidelines in iterative format • Understanding OOP processes • Objects • Properties, names values, triggers JS exercise – Lesson 4 ppt – Page 14.

Lesson 2 exercises Fun training exercises for students outside of classroom	Lesson 2 exercises Fun training exercises for students outside of classroom	Complete worksheets in order individually
Week 4		
KNOWLEDGE – Lesson 2 of 2 **SKILL** – students will learn to: Development of worksheet standards • Opening first worksheet and following the guidelines in iterative format • Understanding OOP processes • Objects • Properties, names values, triggers JS exercise – Lesson 4 ppt – Page 14. Complete worksheets in order individually	**KNOWLEDGE** – Lesson 1 of 2 **SKILL** – students will learn to: Using Built-in methods and the document object • Objects • Purposes for method document object • Data Types • Inner HTML • TextContent Lesson 5 exercise	**KNOWLEDGE** – Lesson 2 of 2 **SKILL** – students will learn to: Using Built-in methods and the document object • Objects • Purposes for method document object • Data Types • Inner HTML • TextContent Lesson 5 exercise
Week 5		
KNOWLEDGE – Lesson 1 of 2 **SKILL** – students will learn to: Understand the purpose of an ARRAY • Arrays • Types of arrays • Numeric operators • Arithmetic operators Lesson 6 exercise + Data type table 1. Prompting and string joining	**KNOWLEDGE** – Lesson 2 of 2 **SKILL** – students will learn to: Understand the purpose of an ARRAY • Arrays • Types of arrays • Numeric operators • Arithmetic operators Lesson 6 exercise + Data type table 3. Prompting and string joining	**KNOWLEDGE** – Lesson 1 of 2 **SKILL** – students will learn to: Understand functions • Functions • Visual aide for a function • On-click events • Parameters • Return feature • Local Variables • Global Variables

2. Array creation Output combination of results	4. Array creation Output combination of results	Lesson 7 exercise + Data type table
Week 6		
KNOWLEDGE – Lesson 2 of 2 **SKILL** – students will learn to: Understand functions • Functions • Visual aide for a function • On-click events • Parameters • Return feature • Local Variables • Global Variables Lesson 7 exercise + Data type table	**KNOWLEDGE** – Lesson 1 of 2 **SKILL** – students will learn to: Understand how to use conditional statements • Conditionals (Flow Control) • Types of conditionals • Format and purpose of different types • Comparison operator (logical vs numerical) Lesson 8 exercise (grade alert)	**KNOWLEDGE** – Lesson 2 of 2 **SKILL** – students will learn to: Understand how to use conditional statements • Conditionals (Flow Control) • Types of conditionals • Format and purpose of different types • Comparison operator (logical vs numerical) Lesson 8 exercise (grade alert)
Week 7		
KNOWLEDGE – Lesson 1 of 2 **SKILL** – students will learn to: Understand the purpose of iterations (loops) • Types of loops (For Loop) • Format and purpose of a loop • Initialisation • Condition • Update • Visual representation • Pseudocode • Breaking the loop flow	**KNOWLEDGE** – Lesson 2 of 2 **SKILL** – students will learn to: Understand the purpose of iterations (loops) • Types of loops (For Loop) • Format and purpose of a loop • Initialisation • Condition • Update • Visual representation • Pseudocode • Breaking the loop flow	**KNOWLEDGE** – Lesson 1 of 4 Recap **SKILL** – students will learn to: Catch-up and Recap lesson over all 9 exercise tasks. • Additional Challenges (Maths Challenge) • Assistance and support (Syntax sheet) • Study documentation

Lesson 9 exercise 1. Exercise 1 2. Exercise 2 3. Exercise with Dictionary	Lesson 9 exercise 4. Exercise 1 5. Exercise 2 6. Exercise with Dictionary	
Week 8		
KNOWLEDGE – Lesson 2 of 4 Recap **SKILL** – students will learn to: Catch-up and Recap lesson over all 9 exercise tasks. • Additional Challenges (Maths Challenge) • Assistance and support (Syntax sheet) Study documentation	**KNOWLEDGE** – Lesson 3 of 4 Recap **SKILL** – students will learn to: Catch-up and Recap lesson over all 9 exercise tasks. • Additional Challenges (Maths Challenge) • Assistance and support (Syntax sheet) Study documentation	**KNOWLEDGE** – Lesson 4 of 4 Recap **SKILL** – students will learn to: Catch-up and Recap lesson over all 9 exercise tasks. • Additional Challenges (Maths Challenge) • Assistance and support (Syntax sheet) Study documentation
Week 9 – Exam Time		
Exam Revision Day 1	Exam Revision Day 2	EXAM TIME!!!
Week 10		
Text References: **Additional Resources:** **Supporting learning resources:**	**Text References:** **Additional Resources:** **Supporting learning resources:**	**Pack up and clean up room and Arduinos ready for the next class to use.**