TINKERS - MODULE 1

π Academy MASTERCLASS

Sprout

#	LESSON	OBJECTIVES	STANDARDS
1	SPACE EXPLORER	• Use a repeat loop to animate a sprite • Use forever to repeat an animation indefinitely • Nest Loops within each other	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
2	USING PENS	• Add the pen extension • Use broadcasts to control a sprite • Recall how to respond to mouse events	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
3	BASIC ANIMATION	• Use code to change a sprite's costume • Use code to make sprites react to input • Add sounds to a sprite	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
4	PENS WITH LOOPS	• Use the pen tool • Learn to use basic loops and conditionals • Detect collisions and respond to events	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
5	FASHION DESIGNER	• Use basic constructs to create simple programs • Design basic 2D and 3D assets	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
6	CLONE & EVENTS	• Use clones to create many sprites all the same • Use key pressed events to move sprites	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
7	USING OPERATORS	• Join operators to concatenate strings • Random operator to choose random times • Multiplier operator	1B-AP-09: Create programs that use variables to store and modify data
8	USING VARIABLES	• Understand pauses between actions within loops • Use code to generate random numbers • Add a variable to store a game score	1B-AP-09: Create programs that use variables to store and modify data
9	ANIMATE & EVENTS	• Learn to animate sprites • Learn to respond to keyboard input • Understand how broadcast works	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
10	BALLOON BOUNCE	• Learn to use animation to make sprites move • Advanced use of random numbers • Draw sprites and create clones of a sprite	1B-AP-10 Create programs that include sequences, events, loops, and conditionals

TINKERS - MODULE 2

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Sprout

#	LESSON	OBJECTIVES	STANDARDS
1	GOALS GALORE	• Learn to respond to key presses • Use sensing blocks to detect when sprites meet • Use broadcast to communicate between sprites	1B-AP-11: Decompose problems into smaller, manageable subproblems to facilitate the program development process.
2	ANIMATE US	• Basic motion: move in steps, and turn by degrees • Using keyboard controls • Detecting when sprites are touching	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
3	USING LISTS	• Add sound to your project • Create and use lists to store data • Create and use custom blocks for repeating code	3A-AP-14: Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.
4	ADVANCED ANIMATIONS	• Use animations, concentric circles • Advanced broadcasts messages • Using random numbers	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
5	USING VARIABLES	• Use operators to compare numbers • Detect when sprite is touching a colour • Use a variable to record the time	1B-AP-09: Create programs that use variables to store and modify data
6	INTRO TO STRINGS	• Concatenate strings in projects • Variables usage to store user input • Use conditional selection to respond to user input	1B-AP-09: Create programs that use variables to store and modify data
7	ANIMATION & EVENTS	• Advanced animation in sprites • Learn to react to mouse input • Use broadcasts	1B-AP-11: Decompose problems into smaller, manageable subproblems to facilitate the program development process.
8	FLAPPING TOUCAN	• Create sprites using Vector mode • Use sounds and detect collisions • Control a sprite using keyboard	1B-AP-10 Create programs that include sequences, events, loops, and conditionals
9	USE RANDOM LISTS	• Choose random items from a list • Learn to use variables to track attributes • Monitor speed, lives, and the player's score	3A-AP-14: Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.
10	POWER OF MATH π	• Learn the importance of Pi in Mathematics • Using advanced variables • Calculating and showing and hiding variables	1B-AP-09: Create programs that use variables to store and modify data