

Name:

Date:

Class:

Imagine and Plan Worksheet

Part 1: Understand the Objective

1. In your own words, describe what your microdevice must do.

Part 2: Identify Inputs and Outputs

2. List the inputs (what your device senses or receives):
Examples: button press, light level, temperature, motion, sound, timer

3. List the outputs (what your device does):
Examples: LED lights, sound, display, motor movement, signal sending

Part 3: Break the Problem into Steps

4. Write the steps your program should follow in order.
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.
 - 6.

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Part 4: Think Like a Computer

5. Identify the key programming elements your device will need.
Check all that apply and explain.

Events (What triggers actions?) _____

Conditions (If/then logic) _____

Loops (Repeating actions) _____

Variables (Values that change) _____

Part 5: Flowchart or Pseudocode

6. Sketch your program logic using a flowchart or pseudocode.
(Use arrows, boxes, and decision diamonds OR write simple step-by-step logic.)

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Part 6: Brainstorm Multiple Solutions

7. Describe two different ways your device could be programmed.

Solution A:

Pros: _____ Cons: _____

Solution B:

Pros: _____ Cons: _____

8. Which solution will your team use, and why?

Part 7: Predict Challenges & Debugging

9. What problems might your code have?

10. How will your team test and debug your program?

Part 8: Team Roles & Responsibilities

11. Assign team roles:

- Programmer: _____
- Builder: _____
- Tester: _____
- Documenter: _____

Reflection (After Coding)

12. What worked well in your design?

13. What would you improve next time?

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Teacher Initials: _____ Completion Check: