

Blueprint Blitz: Translating Code to Action

Welder Esports Game 4 | AWS A2.4 Symbol Mastery & WPS Translation

Gemini Notebook

The Real World

The Player

The Wall Between Operators and Masters

Manual Limit: Puddle Control and Arc Length mechanics only carry a player through Season 1.

The Industry Demand: True fabrication requires cognitive mastery—reading the exact language of AWS D1.1 structural engineering.

The Bottleneck: AWS A2.4 standards are notoriously dense, highly spatial, and deeply punishing for beginners.

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Decrypt. Select. Execute.

The Format

A high-speed, **flash-card** style cognitive drill deployed in Season 2.

The Objective

Flash an **AWS symbol** (fillet, groove, bevel); the player must instantly build the correct **Welding Procedure Specification** (WPS) loadout. Process options include **MIG, TIG, or Stick.**

The Bridge

Upgrades players from **1G** flat basic bead running to complex **2G/3G** joint preparation.

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The Anatomy of a Weld Symbol

Reference Line:
The horizontal anchor of truth. All spatial instructions are relative to this line.



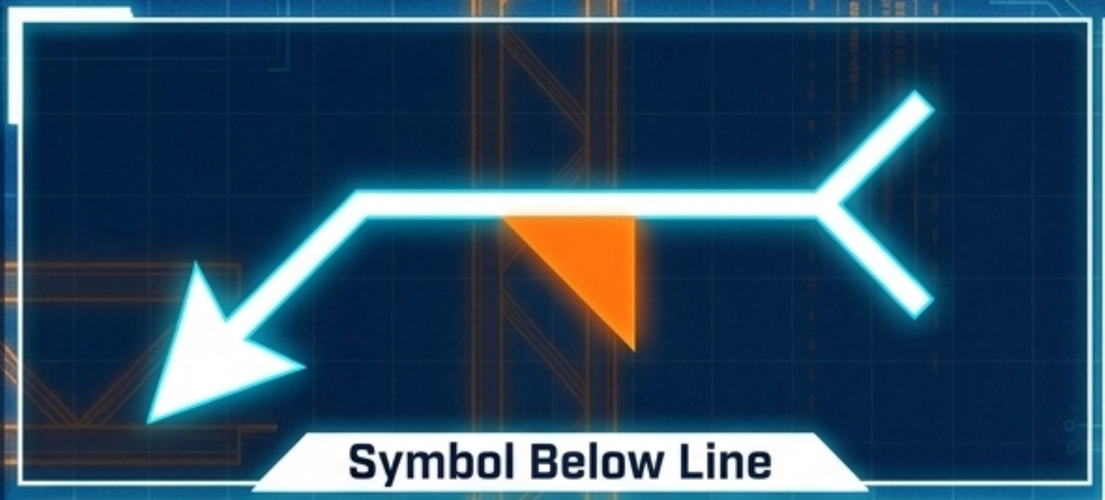
Arrow:
The physical director. Points precisely to the target joint on the drawing.

Tail:
The data payload. Houses critical, non-spatial WPS details (Process type, specific consumable).

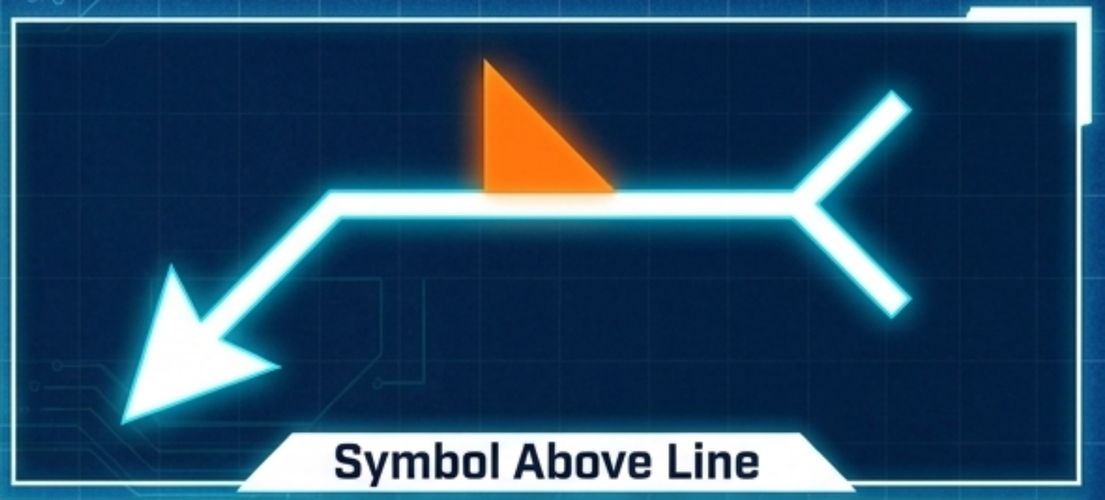
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Spatial Reasoning: Arrow Side vs. Other Side

2D CODE



Symbol Below Line

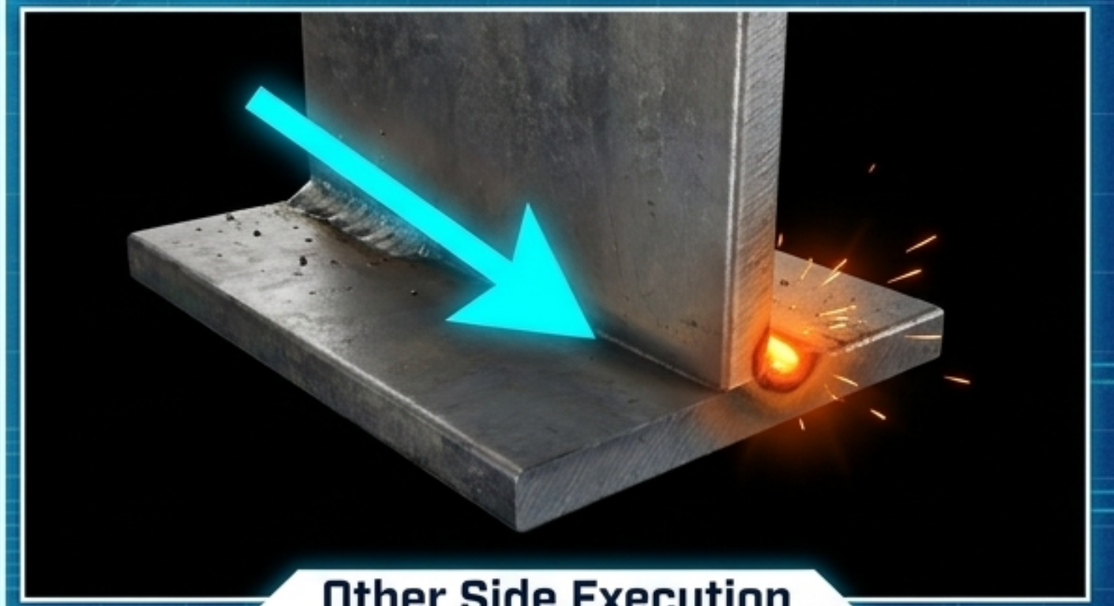


Symbol Above Line

3D EXECUTION



Arrow Side Execution

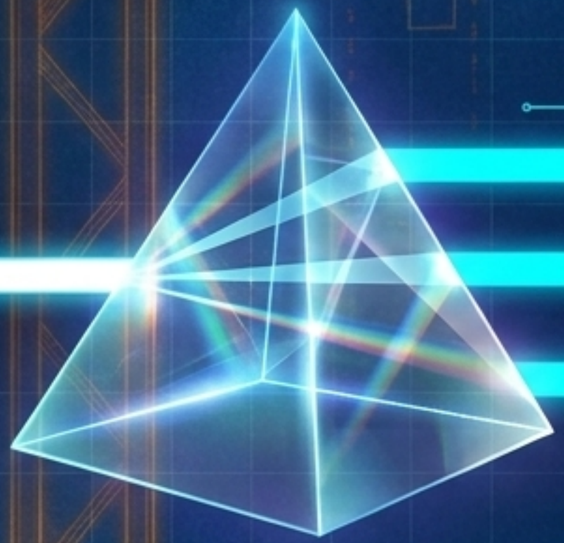


Other Side Execution

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Generating the WPS Loadout

GTAW



Process Output
Must select MIG (GMAW), TIG (GTAW), or Stick (SMAW) based on the symbol tail.

Consumable Output
Must dial in specific filler metal (e.g., 0.030/0.035 wire for MIG, 6010/7018 rod for Stick).

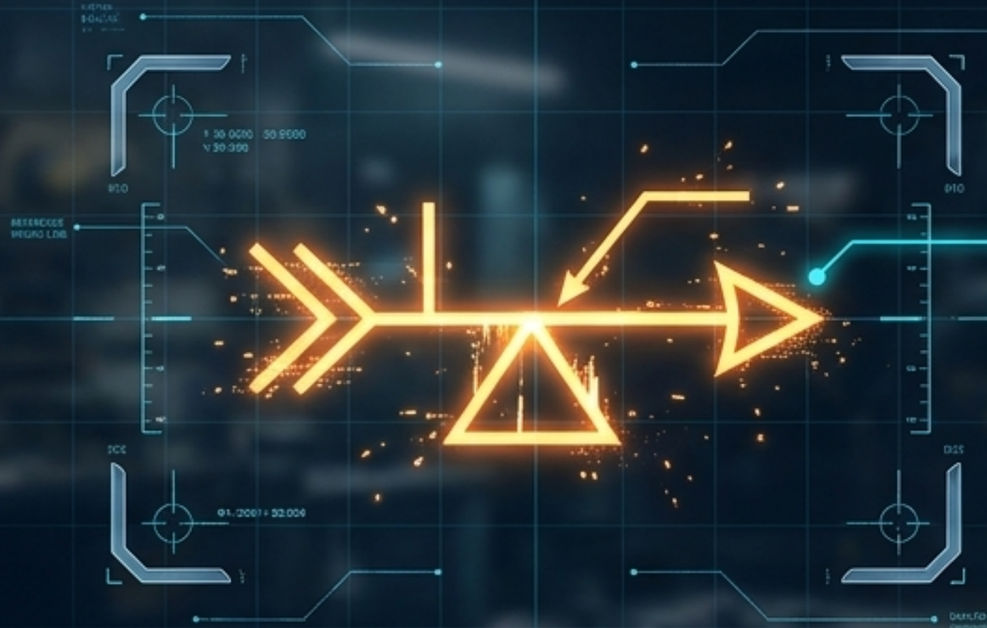
Position Output
Translate the joint orientation into the correct spatial challenge (1G/1F flat through 6G pipe).

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The Esports Interface



Burn-Down Timer: Aggressive progress bar enforcing speed-round pressure.



The Flash Zone: Large AWS symbol flashes here for precisely 2 seconds.



Process Selector: Radial menu mapped to left joystick.



Parameter Selector: Radial menu mapped to right joystick.

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The 5-Second Speed Round



1. Perceive
AWS Symbol (Fillet, Groove, Bevel) appears in the Flash Zone.

2. Decode
Mentally translate Arrow vs. Other side and spatial dimensions.

3. Select
Rapidly flick radial menus to input Process, Consumable, and Position.

4. Lock & Verify
Hit trigger to lock in. Immediate green (pass) or red (fail) feedback. Loop instantly resets.

PASS

FAIL

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Evaluating Cognitive Speed

Accuracy (40% Weight)



Measures correct translation of joint prep, process, and Arrow/Other side selection.

Consistency/Time (30% Weight)



Measures reaction speed. Faster, accurate lock-ins yield combo multipliers.

Safety (30% Weight)



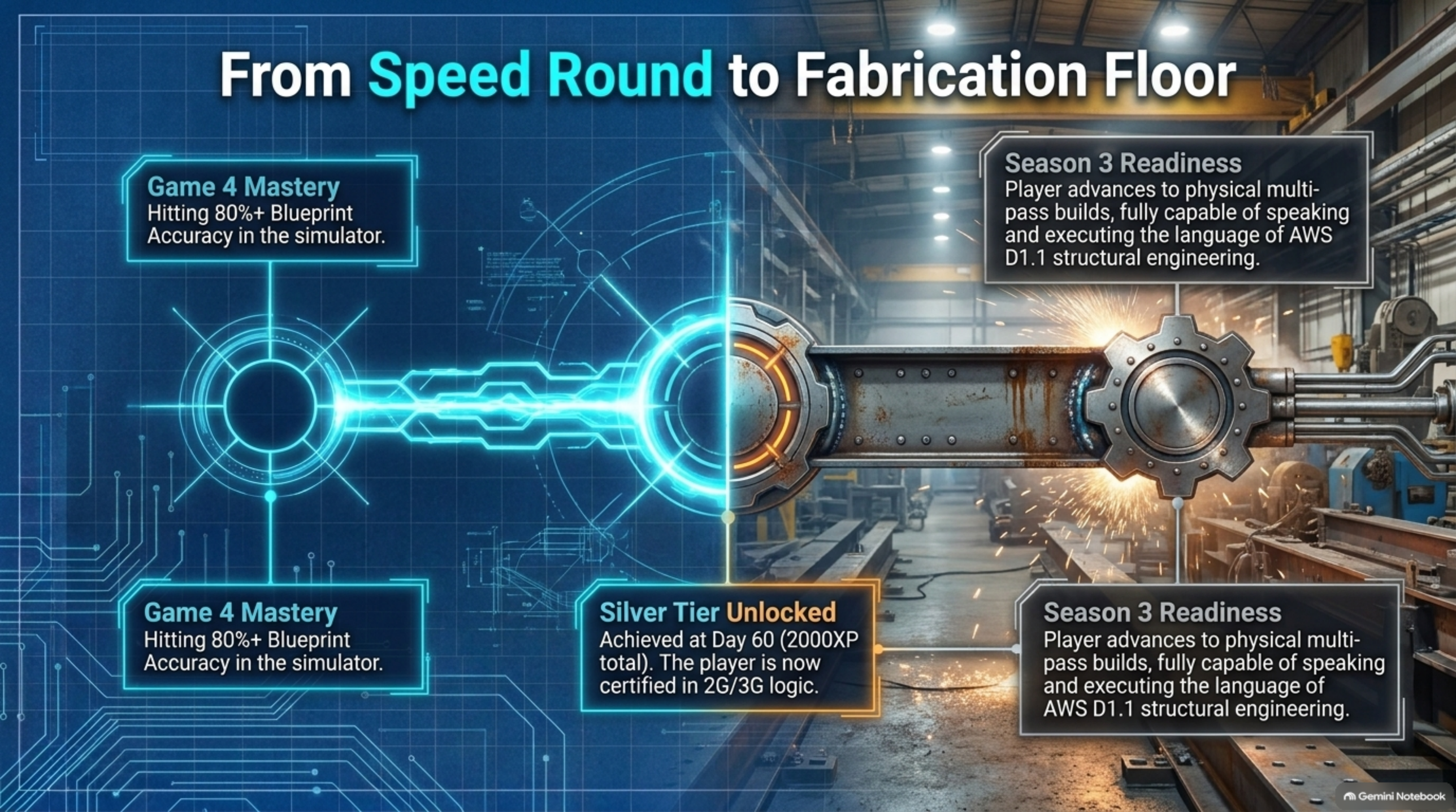
Enforces strict code adherence. Penalties applied for guessing unsafe WPS combinations.

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Formula:
XP = (Accuracy * 10)
   + (Consistency * 5)
   - (Defects * 50)
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XP OUTPUT

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From Speed Round to Fabrication Floor



Game 4 Mastery
Hitting 80%+ Blueprint Accuracy in the simulator.

Season 3 Readiness
Player advances to physical multi-pass builds, fully capable of speaking and executing the language of AWS D1.1 structural engineering.

Silver Tier Unlocked
Achieved at Day 60 (2000XP total). The player is now certified in 2G/3G logic.

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