Robot Factory

Mission: the thief jammed the factory line and locked the mascot in the crate with a code that only opens for the right build steps in the right order. Win the games, put the steps in order on the whiteboard, whisper the password, open the box, free the mascot. Character trait today: **Self-Awareness**.

Grades 3–8 / middle school: run it competitive. Fixed teams for the hour, a visible timer on every round, score each game (winning team, fewest commands, fastest crack) on the whiteboard, crown a champion at the finale. Push harder versions: chair-maze robots with commands locked in up front, 8 to 10-step dances with two bugs, 6 to 7-letter passwords in a bracket, and let older kids referee and design puzzles for rival teams to crack.

1 · Robot and Programmer (5–16 min), exact steps only, no vague commands

Setup Small groups of 3 to 5. One kid is the Robot, the rest are Programmers. Pick a target spot across the room (chair as the charging station, taped X, floor tile).

Charge up "Forward 4 · turn right · forward 2 · stop." One clear action per command; the Robot does exactly that and freezes.

Around toolbox "Forward 3 · turn left · forward 2 · turn right · forward 2." Shows why order matters.

Demo A Programmer says "just go plug in over there," the Robot freezes or overshoots. Then the group says it in exact steps. Robots walk, never run, hands down.

Diff TK–2: short commands, coach helps, close target. 3–8: chair-maze, commands locked in up front (no live fixes), head-to-head fewest-commands race, older kid as Robot referee, teams design the next course.

2 · Debug the Dance (16–31 min), teach it clean, then slip in a bug

Bug swap Clean: Beep, Twist, Stomp, Clap. Bug: Beep, Stomp, Twist, Clap (twist and stomp swapped).

Wrong step Clean: Stomp, Beep, Beep, Twist. Bug: third step is a Clap instead of a Beep.

Subtle Clean: Twist, Stomp, Spin, Beep, Freeze. Bug: Stomp and Spin swapped. Kids name the bug AND the fix, run it clean, then a student leads a buggy sequence.

Diff TK–2: 3-step sequences, obvious bug, repeat clean first. 3–8: 8 to 10 steps with two bugs, 10-second huddle, buzz in wrong = locked out, then a student invents and leads their own buggy sequence.

3 · Put the Steps in Order (31–45 min), correct order spells the password

BOLT Build the robot: **B** Bolt the base plate down · **O** Open the control panel · **L** Load the batteries in · **T** Turn the power on. Order: Bolt, Open, Load, Turn.

GO Start it up: **G** Grab the switch · **O** On it powers up. Two steps, straight order. Good for a first round or younger team.

Run it Write the steps scrambled on the board. Teams order them the way they would really build it, read the letters top to bottom for the password. First team to whisper it correctly opens the box.

Diff TK–2: short GO build, coach reads aloud, blank line per letter. 3–8: 6 to 7-letter passwords (ENGINE, ROBOTS, SYSTEM), visible timer, tournament bracket, teams write puzzles for rivals, older student runs and verifies the board.

4 · Finale + Wristband (45–60 min)

Open Winning team announces the password to the room, coach turns the key, mascot lifts out, big cheer. Optional "thief's note" inside: "You rebuilt my robot perfectly. I surrender!"

Award the **Self-Awareness** trait wristband to detectives who noticed and named their own thinking steps ("first I did this, then that").

Games bank (zero materials, whole group)

Backups Wink Detective · Guess the Leader · **Detective Mafia** (best for grades 3–8): eyes closed, tap 2 to 3 Culprits and 1 Detective; Night they act in secret, Day the group debates and votes one out; town wins by voting out all Culprits. 5 to 7 min per round, reshuffle. Great competitive swap for older kids.

Detective's Oath (say together, magnifiers up): I am a detective. / My brain is my best tool. / I don't guess, I reason. / I follow the clues to the truth.