

Work Sample — Little Bits STEM Camp Curriculum (Facilitator Guide)

A five-day facilitator curriculum that lets any camp instructor, regardless of technical background, deliver a hands-on circuits unit that culminates in a student-built remote-controlled vehicle.

Use case. I designed this for Robotics in Manufacturing, a STEM summer camp serving incoming grades 1–7 and hosted inside community programs such as Boys & Girls Clubs. I was assigned to the Little Bits station, which had no existing curriculum. Across a summer the camp runs up to eight weeks with three or more instructors, cycling five station groups of up to 15 campers through each day and reaching hundreds of campers in all — so its core need was consistency: a unit any instructor could pick up and teach the same way, even with no prior experience with the technology. It's written to be *delivered*, not just designed — each day is fully scripted for a single instructor running a station group start to finish.

Design approach. Guided discovery (instructors never build circuits for students), scaffolding that fades across the week, and scripted responses to the misconceptions campers predictably hit — with age-based differentiation built in: older campers assemble the vehicle as an extension activity while younger campers receive it pre-built.

My role. Sole designer and instructor. I built every instructional and assessment material from scratch, designed the differentiation, and piloted and revised the unit. The attached goal-analysis diagram and the supporting design documentation are also my work.

Outcomes. I piloted the culminating module and drew on field observations across multiple summers of instruction. Formative testing confirmed campers retained the core content — bit types and their functions — and completed the builds, and it surfaced two issues I then designed around: wire-bit connections that separate under rough handling, and a meaningful difference in how younger and older campers handle the equipment. In response, I changed the supply method so instructors distribute pieces directly rather than having students retrieve them, recovering instructional time and removing a per-step verification bottleneck.

Included here: the full five-day curriculum, plus a one-page goal-analysis diagram as an exhibit. A complete Dick & Carey design document — needs assessment, learner and context analysis, performance objectives, and assessment alignment — is available on request.