

Why and How to Teach Logo Programming to Children, at the Dawn of the AI Age

Introducing Logo, Its Design, Philosophy, and Constructionist Pedagogy to a New Generation of Constructionists in an Age of AI

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Abstract

Logo programming is inseparable from constructionism. This workshop offers a hands-on crash course into the Logo philosophy, language design, range of possible projects, dialects, and pedagogical approaches applicable to Logo and its descendant environments. The emerging availability of computationally rich AI environments not only enrich learning adventures but benefit from the sorts of computational fluency developed by children engaged in Logo-like programming experiences. The workshop models pedagogical techniques essential for successful project-based learning in any curricular context, with or without computing.

Tools, Skills and Materials: Tools -> Turtle Art, Tools -> Lynx, Tools -> Scratch, Tools -> Snap!, Tools -> MakeCode, Tools -> Wolfram Language, Tools -> Wolfram Notebook Assistant, Skills -> Computational thinking

Keywords and Phrases: Logo, constructionism, computer science for all, computational fluency, project-based learning, generative AI

Workshop Description: Scope, Motivation, and Background

A new generation of constructionists may benefit from an understanding of Logo, its implementation, philosophy, and best teaching practices. This workshop is intended to provide an overview of the past six decades of Logo development, provide hands-on experiences via mini projects, discuss the powerful ideas behind the design of Logo, suggest a range of projects, and look to the future. Implicit in these activities is a project-approach to teaching computer science to children that benefits the teaching of other disciplines and democratizes computing by making it accessible to all children, not just those who choose computer science as a vocational path.



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