

Ramírez-Montoya, M. R. (2023). Appendix 1. Instructional Design. Technical report stage 1. Project E4C&CT: Ecosystem for scaling up computational thinking and reasoning for complexity. Tecnológico de Monterrey.

Appendix number & project name - stage	Appendix 1 - E4C&CT- Stage 1
Products, outcomes or milestones	1.1 Instructional Design
Name	Appendix 1. Instructional Design
Responsible	María Soledad Ramírez Montoya
Objective	<b>Objective 1:</b> Design and development. Design and develop a platform hosting a digital ecosystem that integrates (i) instructional procedures for understanding computational problem solving with various degrees of complexity and (ii) automated tools based on learning analytics, artificial intelligence, games, machine learning, and data science that allow to extract data to analyze behaviors and scale up reasoning for complexity and computational thinking.

### Support evidences

Evidence 1- Instructional procedures for computational thinking in education.

González Padrón, J. P. (2023). Procedimientos instruccionales para el pensamiento computacional en educación. Tecnológico de Monterrey. <https://hdl.handle.net/11285/650712>

Problem-based learning through scenarios was adopted as a pedagogical strategy for the instructional design of the digital ecosystem. The purpose of this methodology is to promote and understand the processes of solving computational problems of different levels of complexity (See Figure 1).

**Figura 1**

*Componentes del modelado del entorno de aprendizaje*

