The Design Principles build on the knowledge and experiences of the science education practitioners and learners involved in the SySTEM 2020 project and have been generated through a co-design process. Based on the feedback and contributions of SySTEM 2020 partners, science learning outside the classroom is framed as an inter- and transdisciplinary field, in which arts and humanities are also central.

A design principle is a proposition that serves as the foundation for a system. Thus, the design principles formulated for supporting science learning outside the classroom provide general guidelines for designing science learning activities in non-formal education environments. They are intended as a starting point to aid and inspire educators and pedagogical coordinators, helping them reflect on their practice.

The design principles included in this toolkit have been grouped in three different areas, according to what is the main purpose of the design: design for everyone, design for experience and design for growth. While these areas are not exclusive, they help to identify entry points to the principles based on each one specific needs. The design for everyone principles are strongly related to equity and highlight issues around access, diversity and inclusion in science education outside the classroom. Thus, we encourage the non-formal science education community to consider the principles based on design for everyone as the foundation of any activity they undertake.