

make:able

Curriculum Alignment | ISTE / NGSS

A list of curriculum standards addressed when participating in the make:able student challenge





ISTE standards for students



Please note that PrintLab is not officially affiliated with ISTE, nor does PrintLab have the ISTE Seal of Alignment. However, the below standards are addressed in the make:able student challenge.

- Empowered learner | 1d – Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies
- Knowledge Constructor | 3a – Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits
- Knowledge Constructor | 3d – Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions
- Innovative Designer | 4a – Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems
- Innovative Designer | 4b – Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks
- Innovative Designer | 4c – Students develop, test and refine prototypes as part of a cyclical design process
- Innovative Designer | 4d – Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems
- Creative Communicator | 6a – Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication
- Creative Communicator | 6c – Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations
- Global Collaborator | 7c – Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal



NGSS



- 3-5-ETS1-1 Engineering Design | Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost
- 3-5-ETS1-2 Engineering Design | Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem
- 3-5-ETS1-3 Engineering Design | Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved
- MS-ETS1-1 Engineering Design | Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions
- MS-ETS1-2 Engineering Design | Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem
- MS-ETS1-3 Engineering Design | Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success
- MS-ETS1-4 Engineering Design | Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved
- HS-ETS1-2 Engineering Design | Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering
- HS-ETS1-3 Engineering Design | Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts
- HS-ETS1-4 Engineering Design | Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem

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