



The Science Museum of Minnesota's Learning Technologies Center (LTC) <http://www.smm.org/ltc> engages youth and adults (including students and teachers) in self-directed, fun, creative, and meaningful learning experiences using new and emerging digital technologies in formal and informal learning settings.

LTC's approach to research and development utilizes new and emerging digital technologies in explorations involving science, art, design, and engineering.

Each summer and throughout the school year we provide programming that combines science, art technology in a range from digital music and video-making, to computer animation and game programming, including 3D design.

We've partnered with the MIT Media Lab since our inception in 1999, incorporating the educational tools and resources they're developing, and sharing a constructionist philosophy; that learners develop understanding and knowledge through the making of things... constructing ideas and personally meaningful projects.

Scratch is one tool that we've helped to test. It is a rich media-programming environment. It uses a building-block environment for creating programs. You can easily snap together pieces of code to create programs. The different data types have different shapes to fit together in correct syntax, making it easier to put together working programs and play with programming ideas.

In LTC we work with Scratch as an environment to creatively explore ideas that combine art science and technology. Scratch has three aspects that make it a powerful tool for learners

- 1) It is a low-floor, high-ceiling programming environment that can be used to control and manipulate images, sound and animation.
- 2) It is built to support a community around sharing ideas and learning. The Scratch website is an online community where projects can be shared and played with and also downloaded to explore and adapt the scripts, sounds and images.
- 3) Scratch can interact with the real world through the Scratch Board: a sensor interface to Scratch. Using the Scratch sensor board, learners can build their own game controllers, environmental sensors and create real-time simulations of phenomena.

You can download it for free at <http://scratch.mit.edu>

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