

Marsico Institute of Early Learning & Literacy: Denver, CO

[Learning & Teaching with Learning Trajectories](https://www.learningtrajectories.org) [LT]2 ([LearningTrajectorye.org](https://www.learningtrajectories.org)): An online resource for educators and caregivers of children birth to age 8 supporting learning and development of early mathematics.

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Intervention: Learning and Teaching with Learning Trajectories (LTLT or [LT]2) is a free tool for early childhood educators to learn about how children think and learn about math and how to teach math to young children “their way” (birth to age 8). [LT]2 allows teachers, caregivers, and parents to see and use learning trajectories for math, as they view short video clips of good teaching as well as children working on math problems in a way that clearly reveals their thinking. [LT]2 runs on all technological platforms, includes alignments with standards and assessments, and includes hands-on and built-in software for children. [LT]2 enables teachers to help children find the math in—and develop the math from—their everyday activities, including art, stories, puzzles, and games. See this [video](#) for a description and this [video](#) for a tour.

Research Base: Decades of research by Drs. Clements and Sarama produced the first set of research-based learning trajectories. Every learning trajectory has three parts: a mathematical goal, a developmental progression of levels of thinking, and instructional practices. To support an understanding of goals, the [LT]2 site uses videos to explain the importance of critical early math topics and a focus tool to show alignments to age/grade, standards, and assessment objectives. For the developmental progressions of each topic—levels of thinking—[LT]2 provides descriptions and video examples. The application of new research has generated more precision in the developmental progressions. For the teaching practices—[LT]2 offers examples of environments, interactions, and especially activities tailored to help children develop each level of thinking. Multiple large-scale research studies around the world, involving more than 300 teachers and 3,000 children created practice-based evidence showing that children are more motivated, engaged, and competent in mathematical thinking when teachers take a learning trajectory approach (Bojorquia et al., 2018; Clements & Sarama, 2008; Clements et al., 2011; Clements et al., 2013; Sarama et al., 2012; Verschaffel et al., 2019). All involved real teachers who implemented at high levels of quality. See the studies on [ResearchGate](#). The last version, [LT]2, has more than 22,000 users. During Covid-19, more than 25 new users signed up every day. See an [example](#) of a Zoom implementation of one of [LT]2’s activities.

How to Access the [LT]2 website: The [LT]2 website is free and available to everyone at <https://www.learningtrajectories.org>.

Awards That Supported These Resources: The learning trajectories in [LT]2 were created to support the Nation Science Foundation (NSF)-funded Building Blocks project and further developed with multiple grants from the Institute of Education Sciences (IES). Funding from the Heising-Simons Foundation and the Bill and Melinda Gates Foundation supported the latest version of the tool, [LT]2.