

# **Bus Stops May Be as Good a Place as Any for a STEM Lesson**

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Be it for school or just running errands, thousands of children and their parents wait for the bus every day. A pilot program in Pennsylvania is trying to squeeze a little more science, technology, engineering, and math learning into those waits.

In the Urban Thinkscape project in Philadelphia, researchers and local architects built spatial and science-related art at neighborhood bus stops in Philadelphia, including spatial puzzle walls, patterns of footsteps for jumping, or pictures containing hidden objects and shapes. Prior studies have suggested children who talk more about math outside of school do the same in class, and that play and simple prompts can increase such conversation.

Over months, researchers observed questions and conversations among 280 families with at least one child over age 2 (the average age was 4) both at the bus stops and nearby playgrounds before and after the art was installed. They coded conversations for science, spatial, and math conversations, as well as those on other topics.

While researchers did find students talking and asking questions on the playgrounds, there was significantly more targeted talk about science between children and parents at the bus stops. More than 30 percent of children engaged in discussions including math and spatial reasoning around the puzzle installations, compared with virtually no children having such discussions on the playground or at the bus stop before the bus installation.

“What this tells us is that we can begin to prompt out-of-school talk and STEM talk in informal spaces without really changing up children’s or parents’ routines,” said Molly Schlesinger, a researcher at Temple University’s Infant and Child Laboratory who helped conduct the Playful Learning Landscapes pilot, at a symposium on the research at the Association for Psychological Science conference in Washington, D.C., this weekend. “We can begin to prompt talk outside of school by using intentionally designed public spaces and infusing them with playful learning activities based on the learning sciences, to support STEM thinking and talking in the real world.”