Geometry

1. **Focus on attributes and connections in early grades.**

   “In order for students to get the depth they need in high school geometry, there are experiences they need to have in early childhood, elementary, and middle school,” said Trena Wilkerson, past-president of the National Council of Teachers of Mathematics. “Spatial reasoning is so much more than just naming shapes. It’s really understanding how those shapes are developed, what their attributes are, and how they’re connected.”

2. **Geometry lends itself to interdisciplinary learning.**

   Examples include city planning projects in social studies and paper airplane competitions in science.

3. **Engage kids’ creativity.**

   “For many of my students, I found they could really engage in the visual connections that geometry affords,” Wilkerson said, “and because the geometry connects to algebra concepts ... for some students, it was an ‘aha’ moment of being able to understand the mathematics and see the wonder, joy, and beauty in mathematics as well.”

**IN THE CLASSROOM**

Wendy Lichtman, a math intervention specialist at MetWest High School in Oakland, Calif., partnered with a community art group, the Rock, Paper, Scissors Collective, to teach students geometry by making quilts to donate to local hospitals and foster care agencies.

“Kids don’t care a great deal about two lines being crossed by a transversal, but in quilting, it does matter; the fabric has to fit. The amount of puzzle solving is quite satisfying,” Lichtman said. 

[See sample lesson plan.](https://editproj-my.sharepoint.com/:w:/g/personal/ssparks_educationweek_org/Eb1HAGKLKalMpFsKJm_oSDcB1LC6CRzU67-Dz04YjLFYGw?e=m8FK8i□)

**K-12 GEOMETRY LESSON PLANS AND TOOLS**

**Geometry By Example:** An ongoing project by the SERP institute and Temple University researchers to develop and test meaningful lessons in geometry. The project focuses on high school but has related sites including lessons for elementary and middle school.

**Catalyzing Change in Middle School Mathematics:** The National Council of Teachers of Mathematics guide to research and pedagogy in math, expanding on an earlier report focused on high school.

**Spatial Reasoning Mathematics Program:** An Australian research project to develop spatial reasoning tasks for early grades.