

# Gender gap in spatial ability can be reduced through training

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Barriers to children's achievement in the areas of science, math, and engineering have become a particular concern as policymakers focus on America's economic competitiveness. A gender difference in girls' spatial abilities emerges very early in development, and researchers have suggested that this difference may be a source of gaps in achievement in math and science for girls. A new study just published in *Child Development* describes an intervention that is effective in eliminating the gender gap in spatial abilities. While the research doesn't yet show that the intervention leads to better achievement in science, math, and engineering for girls, this is a promising direction for supporting girls' achievement and eventual contributions in these areas.

"Given the value of good spatial skills in [math](#) and science, this study tells us that it's possible to implement intervention programs and develop curricula aimed at overcoming gender differences that many believe have a biological contribution," according to David Tzuriel, professor of psychology and education at Bar Ilan University in Israel, where the study was conducted. "We still need to see if eliminating the [gender gap](#) in spatial relations results in eliminating the gap in math and science achievement. But this is a critical first step."

The research appears in the September/October 2010 issue of the journal *Child Development*.

Tzuriel and a colleague studied more than 100 first graders, placing about half of them in a training program that focused on expanding

[working memory](#), perceiving spatial information from a holistic point of view rather than based on particular details, and thinking about spatial geometric pictures from different points of view. The other children were placed in a control group that took part in a substitute training program.

After eight weekly sessions, initial gender differences in spatial ability disappeared for those who had been in the first group.

This is the first study to find that training helps reduce the gender gap in spatial ability. Further work can follow up on these findings by determining whether eliminating the gender gap contributes to [achievement](#) in math and science.

"Training that starts early can prevent [gender differences](#) in spatial abilities and provide equal opportunities for girls to excel in skills that are required for success in scientific domains," according to Tzuriel.

Provided by Society for Research in Child Development

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