

## **Top Ten Tips for Teaching Math/Science to Girls**

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### **Verbalizing their Thinking**

The female brain is wired for language processing. Have girls turn to a partner to explain how they solved a problem. Have girls also keep a math journal where they can explain math concepts verbally.

### **Use Manipulatives**

Both boys and girls can learn math equally well; however, boys tend to need less time with the manipulatives before moving on to the algorithm. Allow girls to use manipulatives for longer, if they'd like. Encourage girls to use the manipulatives as they explain or write out their answer.

### **Incorporate Girls' Interests**

Find out what girls enjoy outside of school and look for ways to incorporate these topics into the math or science lesson. Also, have girls write their own math story problems – encouraging them to incorporate themes and subjects they enjoy.

### **Single-Sex Groupings**

While girls might be more quiet in a mixed setting (especially with boys who are loud or who dominate the class discussion), they often participate more actively in same sex groups – especially in math and science. Also, girls don't need to worry about impressing the boys and are, therefore, less likely to “dumb down” in all-girl settings.

### **Let Their Bodies Move**

Help girls grasp concepts by having them stand up, close their eyes, and act out the concepts with their bodies – either individually or in pairs. For example, they can become a fulcrum, an acute angle, or a set of parallel lines. This is a great activity for getting girls' brains to develop visual-spatial schematics for math vocabulary, as well as for activating the visual spatial cortical areas of their brains.

### **Create Learning Centers with Visual Tasks**

Make sure to create some learning centers which are visual-spatial in nature. For example, students can create a birds-eye view of their bedroom in one center. Another center can challenge students to draw a map of the school or to solve a Rubric's Cube. Encourage girls to play in the Block Center (consider a “girls only” day) and challenge them to build tall vertical structures that require careful balancing.

### **Provide Visual Spatial Puzzles as Class Warm-ups**

Help girls exercise and strengthen their visual-spatial abilities by displaying visual puzzles for the class to solve as a warm-up/sponge at the beginning of math class, or anytime of day! Just be sure to do it regularly and discuss how different students saw or solved problems differently. Here are a couple of resources:

[www.mathematicslearning.org/index.cfm?ref=30606&ref2=4](http://www.mathematicslearning.org/index.cfm?ref=30606&ref2=4) and <http://www.aimsedu.org/puzzle/index.html>

### **Integrate Literature with Math Themes/Topics**

Incorporate children's literature into the math program to leverage girls' verbal strengths. This website gives some good book suggestions: <http://www.dearteacher.com/math-books>

### **Women As Math/Science Role-Models**

Girls and boys face many societal pressures regarding accepted gender roles. Girls often get negative messages about their ability to be good math and science students, including recent t-shirt slogans: “I'm too pretty to do homework...” and “Allergic to algebra.” Girls need to know that they can pursue careers in male-dominated fields, so look for classroom guests and role models who break the mold of gender roles.

### **Build Their Confidence**

Give girls specific praise, talk to girls about accepting constructive criticism without feeling hurt, teach them to use positive self-talk especially in areas that they may feel insecure, and provide regular opportunities for healthy competition.