Rauscher (1997) was curious to see if music training in children causes a long-term enhancement of their spatial-temporal reasoning. Because young children have extremely plastic cortices, the researchers hypothesized that the children who received this training would indeed improve significantly in their spatial-temporal reasoning.

Seventy-eight children, ages 3-5, were studied over a two year period. The children were either assigned to a keyboard group, which also received singing lessons, or assigned to one of the three remaining groups which included singing, computer, or no lessons at all. Before the musical training began, the kid’s spatial reasoning was tested with the WPPSI-R. The pre-tests showed no differences in each of the group’s spatial-temporal or spatial-recognition scores. In the post-test however, there was a huge increase in the object assembly scores, whereas none of the other groups showed a change. This study shows that music training, rather than listening, produces long-term changes in spatial-temporal reasoning. Rauscher (1997) suggests that heightened ability to solve evolve temporal sequences of spatial patterns as a result of music training will lead to an enhanced conceptual mastering of proportional reasoning, which will be investigated in future research.

A little more detail on the findings would be nice.

You may want to explain object assembly scores in more detail.