

1035-Z1-1062 **Nathan C Carter*** (ncarter@bentley.edu), 175 Forest St, Waltham, MA 02452. *A Talk Without Words: Visualizing Group Theory.*

This talk showcases the intuition-building power of Cayley diagrams for enhancing understanding in group theory. Visualizations built on Cayley diagrams will be used to illustrate fundamental concepts such as groups and subgroups, direct and semidirect products, and group quotients. As the title implies, the talk requires only images, and no mathematical symbols or definitions. Some foundational theorems from group theory (such as the Fundamental Theorem of Abelian Groups) will also be illustrated. Appreciating this material requires no prior exposure to groups, but even those seasoned in the subject should see it in a new light. A free software program for interactively exploring group theory visualization will also be demonstrated. (See <http://groupexplorer.sourceforge.net>.) (Received September 18, 2007)