

1035-N1-1916      **Darrah P. Chavey\*** (chavey@beloit.edu), 700 College St., Beloit, WI 53511. *Teaching Symmetry with Depression Glass.*

Depression glass table settings were widely available as premiums from the late 20's until about the end of World War II. There are 92 different patterns of such glass, many of which demonstrate striking and beautiful symmetries. As the author discovered, an overhead projector makes these patterns even more intense. Students respond well to both the history of the emotional power of this glassware and to the beauty of the patterns themselves. This glassware can make a powerful way of teaching the basic geometric symmetries. Central symmetries include dihedral groups of order 6, 8, 10, 12, 16, 20, 24, 28, 32, 36, 48, and 72, and cyclic groups of order 20, 30, and 100; plus many linear groups around the border. Many patterns show striking examples of nested subgroups. One has a nested chain of normal subgroups of orders 6, 12, 24, and 72. Another pattern contains a portion with a symmetry group of order 48, i.e.  $D_{24}$ , with normal subgroups  $A$  and  $B$  of orders 16 and 24, such that  $A \cap B$  has order 8. This glassware can be used in an elementary course to demonstrate symmetry groups, or in a group theory course to teach subgroups. We will show several patterns, and discuss tactics to find inexpensive pieces to supplement photos at <http://cs.beloit.edu/~chavey/Glass/>. (Received September 20, 2007)