Short Symmetry Demonstration

Due: Monday, January 28, 2008

In this assignment you may work solo or with a partner to come up with a demonstration of symmetry using your choice of medium, and your choice of operation. You will demonstrate it to the class, and explain the principles you are illustrating.

1. Select a group which will be your basis for symmetry operations, which we have discussed in class, which you have read about in the readings, or another which you have discovered elsewhere that intrigues you. For example, you could select a discrete symmetry group D_3 of the equilateral triangle, D_5 of the pentagram/pentagon, etc, or a continuous group such as the circle SO(2), or sphere SO(3).

2. Write down the (table of) symmetry operations, which forms the group to which your shape belongs.

3. Come up with a way to creatively represent your group through art, music, dance, or poetry. For example: tessellations; a rhythm played forwards, backwards, and with permutations; a melody upon which you have done some symmetry operations.

4. Write a short explanation of your symmetry demo which explains the operations you have demonstrated, the group to which your "object d'art" belongs, and how your demonstration illustrates symmetry operations.

This should not be too elaborate; you have twelve days in which to come up with something short, which should take you between 5 and 10 minutes to demonstrate, and a write up which should not exceed one page. HOWEVER, it is my hope that this little project will generate ideas that you may like to use for your final project. Indeed, you may use it as a starting place for your more elaborate final work of physics art.

Above all: HAVE FUN with this! ☺