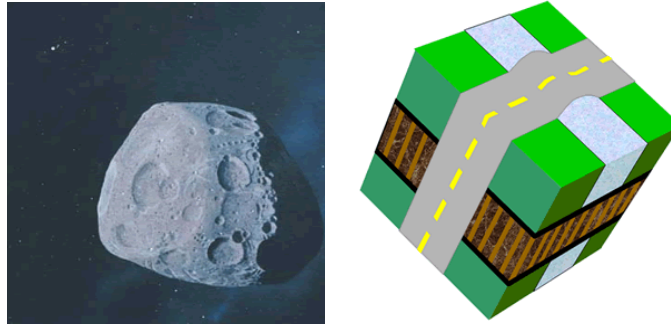


Progress Reaches Asteroid

The headline read: "Progress Reaches Asteroid" And it was true... a Trojan asteroid had been landscaped into a cube, painted green to simulate grass, and a road, frozen river, and railroad track wrapped around it. Here is a picture of the asteroid before and after progress caught up with it:



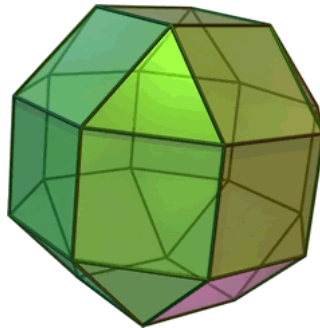
The road, ice river and railroad each wrap all the way around the progressive asteroid.

As president of this new outpost of humanity, it is your job to build four transport machines. They can be trucks, trains, or ice-breakers or any combination of these three. Unfortunately, fuel prices are exorbitantly high, so you can only move one machine one space forward every hour. The four machines must take turns moving (so if a truck moves, the other three machines must move before the truck can move again.)

If two transport machines ever occupy the same space they crash.

Extensions:

You were phenomenally successful in your asteroidal presidency. Another year, another asteroid... What do you think you will be asked to do when you get elected president of this newer, better asteroid?



The Math in This Problem:

Progress Reaches Asteroid is a challenging puzzle that involves the analysis of direction and similar elements to that of a Rubik's cube. In order to find suitable starting points so that none of the four pieces placed on the asteroid will ever meet on single square, students will have to apply strategic analysis when formulating a solution for this problem.