Work Completed

This week centered on the construction of the actual wheel. We finally decided on the best way to paint this wheel mold that would provide optimal paint adhesion to the plastic. We had to find a method that would work with polypropylene (PP). We decided to go with a plastic primer as the base coat. This primer, Rust-Oleum Specialty: Plastic Primer, was purchased at Mansfield Supply Store in Mansfield, CT. The back of the can said that it could be used on a variety of plastics, one of them being polypropylene. However, before we could go ahead with the priming some sanding had to be done. The paint said that it could “fill in” scrapes made with 320 grit sandpaper. So therefore we also purchased a sheet of this from Mansfield Supply Store as well. To complete our purchase we decided to get a can of red spray paint so that our wheel would have four different colors.

As discussed in last weeks meeting the wheel mold was sanded down. The recycling marks as well as any other bumps and/or scratches needed to be removed. This was completed with the sandpaper that we bought from the store on Monday, March 19th. Kristen and I sanded down the wheel. Since there was few markings this was not a hard task, rather, just a tedious one. Once the wheel was sanded down it then was cleaned off with a wet paper towel. This was done to ensure that there was no dust residue on the surface. Once this was done the mold well was then cleaned with paint thinner, as recommended on the back of the can of spray primer. The paint thinner removed all dirt, debris, and oil that had accumulated on the mold well while it was sitting around.
It was now time for the primer to be applied. It was sprayed at a distance of ten to twelve inches (which can be seen in the following picture, Fig. 2). It was sprayed in a back and forth motion with special attention being paid to ensure that each pie piece as well as the dividers all had equal amounts of primer. The can said that it would “dry to touch” in twenty to thirty minutes and be able to be handled in one hour. The first side of the wheel mold was sprayed and let to dry. The same spray method was used to spray the opposite side after an hour had passed. The entire wheel mold was let to dry overnight before any paint was applied.

Figure 2: Application of the plastic primer

The wheel division was analyzed during the drying time of the primer. The color pie pieces were determined along with the different point values. Red, yellow, green, and blue are the four colors that will be used. Red will have the point value of two, yellow will be four points, blue will be six points, and green will be the bonus piece of ten points. This can be seen in figure 3.

Figure 3: Pie Pieces
Wednesday, March 21, 2007 marked the beginning of the painting of the wheel. Spraying the paint directly on the wheel we decided would not be ideal. We do not want the spray paint to get on any of the other pieces so a different method was thought about. We decided that we would spray a foam brush with the correct colored spray paint and then dab the brush onto the corresponding pie piece. We want the wheel to be as visually appealing as possible and this adds to the wheel as a whole. However, due to time constraints on Wednesday the green pieces were the only ones that got their first coat of paint. The paint is very thin so a second or perhaps a third coat will be needed to ensure that the pieces are richly colored. Figure 4 shows the pieces that were painted. The wheel will be completely painted by this coming Friday.

![Figure 4: Partially Painted Wheel](image)

**Future Work**

Throughout the next week many things will be worked upon. The wheel mold will be finished by the end of lab on Friday. The support system that makes the wheel spin can then be constructed more easily. The micro-processor program will also be finished this week. We are still currently looking into buying a PCB board as it is now evident that we will need one to complete our project. We would also like to work on getting the motor attached to the rod so that we can make sure that the wheel will actually spin.

**Project Review**

The past week one big thing was accomplished. The wheel mold with all pie pieces is almost completed. This will greatly help in keeping us as a group on track with a timeline. The game is starting to actually all come together. The SP03 program was also worked on some more. Having this done will help the project finalize as a whole. The actual testing portion of the game will begin this week which is something that is long overdue.

**Hours Worked**

13 hours