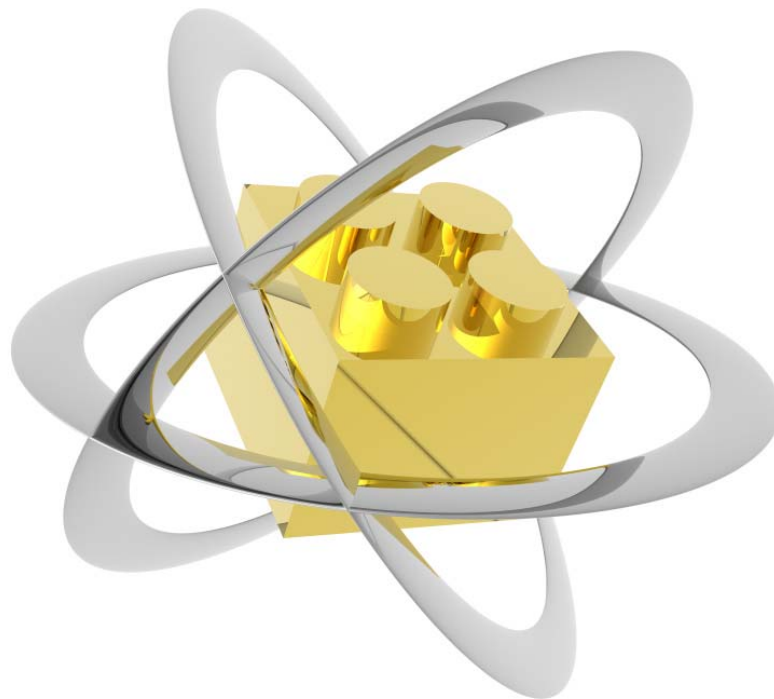


**ROBOROCKS 2004 JOURNAL OF
MIDDLESEX COUNTY ACADEMY
FOR SCIENCE, MATHEMATICS, AND
ENGINEERING TECHNOLOGIES**



TEAM MEMBERS: JOSEPH CORRY, SHREEMAYEE DE, DAVID
LESTER, ALAN MOOIMAN, TARUN PONDICHERRY, MATTHEW
RODRIGUEZ, MATTHEW ROTHBERG, ANTHONY SCIMECA
TEAM ADVISOR: ENZO PATERNO
DATE OF SUBMISSION: DECEMBER 19, 2004

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NOVEMBER 8, 2004

TIME: 12:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

On our first day of operation, our team reviewed the requirements for the RoboRocks Competition. Before we began to make our tentative plans, we decided to make David Lester our team leader. Then, we decided how we would divide the work. We produced a tentative Job List as follows:

- **Robot Building Group:** David Lester, Joseph Corry
- **Course Designing Group:** Shreemayee De, Matthew Rothberg, Joseph Corry, Anthony Scimeca
- **Programming Group:** David Lester, Tarun Pondicherry
- **Journal Group:** Tarun Pondicherry, Matthew Rodriguez
- **PowerPoint and Flyer Group:** Alan Mooiman, Matthew Rothberg

Since the theme has to be related to “World Globalization”, we thought of a theme related to World Peace and the UN. We also had ideas for the course scenery to be similar to that of UN, where we would have flags of the many nations of the world as well as the UN Flag. Although we weren't sure what the three objects would be, we thought the objects could be cubes. We also thought that the objects could represent three nations through the appearance of ambassadors or leaders of three countries. Our first design for the robot was very unique. Instead of a robot with four wheels on the ground, we had one pivot wheel supported by a central rod. This would suspend the robot in the air, as well as spin around. We thought that this robot design was good, but we weren't sure how to implement it fully.

Action Items:

- Formed groups to take care of each Job.
- Set theme as World Peace and UN.
- Designed a suspended robot.

NOVEMBER 10, 2004

TIME: 12:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

As soon as we started our second meeting, we decided not to use the rotating helicopter design. We saw that the helicopter was not a practical design because it would weigh too much on the central rod. So we made another design for the robot. This new design has four wheels, two big ones on the front and two small ones on the back. We put a rear pivot hinge on the robot to change the height and angle of the robot. We also thought that we should add tongs to the side of the robot to pick up the objects, but we decided that cube objects and tongs were not a good idea. After thinking that the tongs and the cube objects were not good ideas, we decided to make all three objects three identically sized balls that would be picked up by a trough. We decided to use a cylinder docking station that would discharge the balls into the trough connected to the robot. After brainstorming various designs for the cylinder drop off system, we finally decided to make all three balls have different sizes. We upgraded the discharge system by having the balls fall out at different times. We started some simple construction on the robot with four wheels on the floor. We couldn't finish constructing the pivot hinge on the robot.

Action Items:

- Redesigned robot from helicopter to a robot with four wheels and a rear hinge.
- Designed objects to be cubical shape and the items would be picked up with tongs
- Redesigned objects to be spherical and they would be picked up by a trough.
- Redesigned objects to be balls of different sizes.
- Drop off method designed as a cylinder docking system.

Resolved Items:

- Design of the Robot.
- Design of the items.
- Design of the pickup/drop-off methods of the robot.

NOVEMBER 11, 2004

TIME: 12:30 PM – 2:00 PM

TIME: 3:30 PM - 5:30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, TARUN, ANTHONY, ALAN

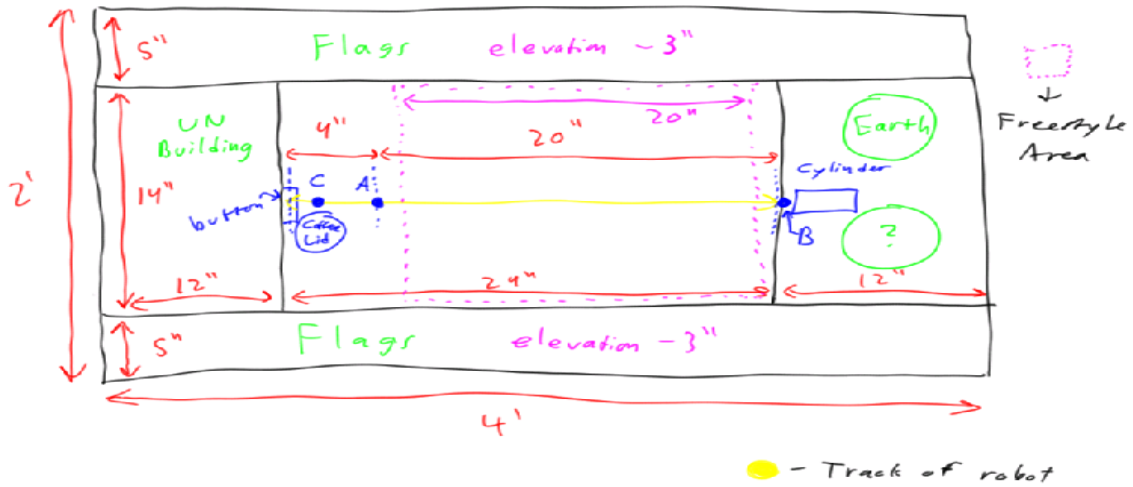
As we started our third meeting, we decided that the job list should be modified:

- **Robot Building Group:** David Lester, Joseph Corry, Matthew Rodriguez
- **Course Designing Group:** Shreemayee De, Matthew Rothberg, Joseph Corry, Anthony Scimeca
- **Programming Group:** David Lester, Alan Mooiman, Tarun Pondicherry
- **Journal Group:** Shreemayee De, Anthony Scimeca
- **PowerPoint and Flyers Group:** Alan Mooiman, Matthew Rothberg

The Robot Building Group built the basic design of the robot, including the rear pivot wheel. The Course Designing Group designed a 2' x 4' course, without much detail.

After school, we set tentative dates and timing plans on what jobs should get accomplished. The Robot Building Group built a primitive design of the robot. We got the robot to move forward, but the hinge for the pivot wasn't sturdy, and the motor for the hinge moved faster than the robot could handle. The Programming Group made a simple program for the robot to move forward, while utilizing the pivot effect. The robot design was complete except for the reinforcements, and the pickup/drop-off methods.

Below is our initial design of the course:



Action Items:

- Modified Job Listings.
- Designed the course to be 2' by 4'
- Basic design of the robot built.
- Robot design is completed except for reinforcements and pickup/drop-off methods.

Resolved Items:

- Course design.

NOVEMBER 12, 2004

TIME: 12:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

This meeting commenced with yet another change to the job list:

- **Robot Building Group:** David Lester, Joseph Corry, Matthew Rodriguez
- **Course Design Group:** Shreemayee De, Matthew Rothberg, Joseph Corry, Anthony Scimeca
- **Programming Group:** David Lester, Alan Mooiman, Tarun Pondicherry
- **Journal Group:** Shreemayee De, Anthony Scimeca
- **PowerPoint and Flyers Group:** Alan Mooiman, Matthew Rodriguez
- **Time Planning Group:** Shreemayee De, Matthew Rothberg
(tentative group to work on the timing plans)

The Time Planning Group used a new program called Open Workbench. With this program, the Time Planning Group designed a Gantt chart. The program required few inputs, like the tentative dates we decided upon. The program produced a nice, clean Gantt chart for all of us to follow. The Robot Building Group tried to fix a number of problems with the robot. One problem with the robot was veering problem. Although they moved pieces around, the problem persisted. So, the group decided to dismantle the robot and build it from scratch. This time the RCX was positioned in the middle and the big wheels were positioned in the back so that the pivot motor could obtain a larger pivot zone.

Below is the Gantt chart created by the Time Planning Group using the Open Workbench program:

ID	Name	Start	Finish	November 2004				December 2004		
				08	15	22	29	06	13	20
1	Build Course	11/11/2004	12/4/2004	[Gantt bar from Nov 11 to Nov 29]						
2	Build Robot	11/11/2004	12/3/2004	[Gantt bar from Nov 11 to Nov 29]						
3	Paint & Decorate Course	11/29/2004	12/10/2004					[Gantt bar from Nov 29 to Dec 06]		
4	Journal	11/11/2004	12/17/2004	[Gantt bar from Nov 11 to Nov 29]				[Gantt bar from Dec 06 to Dec 13]		
5	Media (PowerPoint Presentation, Flyers)	11/12/2004	12/17/2004	[Gantt bar from Nov 15 to Nov 29]				[Gantt bar from Dec 06 to Dec 13]		
6	Programming	11/18/2004	12/12/2004	[Gantt bar from Nov 22 to Nov 29]				[Gantt bar from Dec 06 to Dec 13]		
7	Electrical Work (Siren and Chaser)	12/13/2004	12/15/2004					[Gantt bar from Dec 13 to Dec 13]		
8	Final Adjustments	12/13/2004	12/19/2004					[Gantt bar from Dec 13 to Dec 13]		

Action Items:

- Modified Job Listings.
- Using Open Workbench program, a Gantt Chart was created.
- Rebuilt the robot from scratch.

Resolved Items:

- Timing Plans.
- Job Listings.

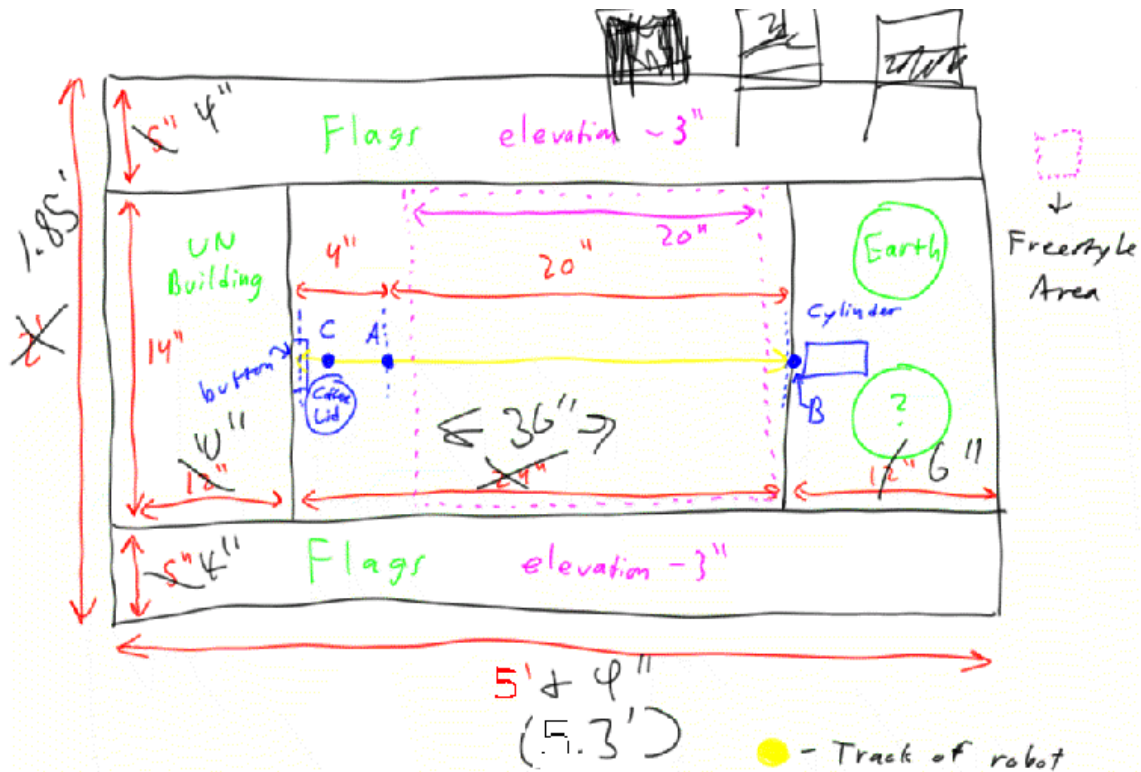
NOVEMBER 13, 2004

Time: 2:15 PM - 6: 30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

As soon as everyone assembled in today's meeting at Joseph Corry's house, we decided to rethink our theme for our course. To relate better with World Globalization, we decided that we should have the course about Mars and the Earth instead of using the UN theme. The Course Designing Group redesigned the course dimensions at 1.5' x 5' 4". This provided more room for the robot to move, since the robot will move forward and backward without making any turns. We built the basis of the course without making any designs or painting it. We now have an environment to test the robot on. The Robot Building Group extended the distance of the rear wheel from the base of the robot to add the pivot range of the robot. We also built the front of the robot sturdier so that the robot wouldn't veer much.

Below is the diagram of the revisions made in our previous course design:



Action Items:

- Changed the theme to Earth and Mars.
- Changed course dimensions to 1.5' by 5' 4"
- Built the course.
- Continued building robot.

Resolved Items:

- Theme.
- Finalized course dimensions
- Built the basis of the course.

NOVEMBER 16, 2004

TIME: 12:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

As soon as we started our meeting, we received a different RCX programming tool. Instead, we decided to use our previous version. We also received the flyer for a logo contest. We built an activation gear, an appendage on the side of the robot that would move the gear on the cylinder. The gear on the cylinder would move the ball into the ball catching arm that we made on the side of the robot. We tried to build a ball catching arm, but it was too bulky and took a lot of pieces to construct it. We decided to take the arm apart and reconstruct it to make it look slicker without having to use too many parts. We brainstormed a way for the robot to find the objects. Our best idea was to have a light sensor find the objects as the object went into the ball catching arm.

Action Items:

- Built an activation gear.
- Built a ball catching arm to catch the objects.

Resolved Items:

- Pickup method of the robot.

NOVEMBER 18, 2004

TIME: 3:30 PM - 4:30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, MATTHEW RODRIGUEZ, TARUN, ANTHONY,
ALAN

In this meeting, the Course Designing Group brainstormed course designs ideas. We decided that there should be two buildings on the course that would represent points B and C. Those buildings would be a round dome-shaped building and a pentagonal-shaped building with a dome. We decided to use Styrofoam or cardboard to make these buildings.

Action Items:

- Brainstormed ideas for the buildings that are going to represent points B and C.
- Brainstormed ideas to build the buildings.

NOVEMBER 20, 2004

TIME: 3:00 PM - 9:30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
RODRIGUEZ, ANTHONY, ALAN

We held today's meeting at Joseph Corry's house. We decided not to have pentagonal and round dome-shaped buildings. After everyone arrived, we went to Rag Shop to shop for materials to construct the buildings as well as get some ideas of how our buildings are going to look like. In Rag Shop, we found out that we could use Styrofoam shapes and pieces to construct the buildings, and use the poster boards to cover the buildings. When we got back from Rag Shop, we decided to cover the course with pieces of papers that had the surface of Mars. We thought about it like this because we wanted the robot to seem like it was riding on the surface of Mars. So, we printed out papers that had the surface of Mars, and then laid them on the course, like mosaic tiles. After we were finished taping the pieces together and taped them on the course, the course did not look good. After we took the pieces out of the course, we brainstormed ideas on how to make the course look like the Martian surface. We then decided to paint the course. We also decided to have mountains in the background that would be made out of cardboard. These mountains would look as if they were of the mountains in Mars. We planned to paint the course next week after we buy the paints.

Action Items:

- Changed the building designs.
- Bought Styrofoam and poster board to construct the buildings.
- Printed out Mars' Surface.
- Decided to paint the course instead of using the pictures.

Resolved Items:

- Bought building Materials.
- Planned to paint the course.

NOVEMBER 22, 2004

TIME: 12:30 PM - 2:00PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, ANTHONY, ALAN

We received the Q&A email update where we had a problem with one of the questions that was asked. The question said that we needed all three objects on the floor of the course, and that we had to pick them up from the floor of the course. We saw that we couldn't use our cylinder mechanism, the balls, and the trough because the items wouldn't have been on the floor of the course. We all brainstormed on how to pick up the objects from the floor of the course. There were two ideas proposed by us, which were the scoop idea and the lance idea. So, in turn, we couldn't use the balls as our three objects. We decided that we should stick with the scoop idea, unless we found another idea.

Action Items:

- Brainstormed how the robot would pick up items.
- Decided on having the objects picked by a scoop
- Changed the objects.

Resolved Items:

- Finalized the idea of having the objects picked up by a scoop.

NOVEMBER 23, 2004

TIME: 1:30 PM - 2:00 PM

ATTENDEES: SHREEMAYEE, DAVID, ANTHONY, ALAN

Since on the last meeting we decided on a scooping technique, we had to decide what our objects were going to be. We decided that we should use tables of different sizes that would start off stacked on top of each other. The robot would come up to the place where the tables are and scoop each table at different heights. First, the scoop would be at the highest height that would enable it to pick up the top table. Then the scoop would be positioned at the second highest height to pick up the medium-height table. Finally, the scoop would be near the ground to collect the third table. We decided that the third motor should be used for the scoop, since the first motor is used for the robot to move and the second motor is used to control the hinge motion.

Action Items:

- Designed objects as different sized tables.
- Decided to use the third motor for the scoop.

Resolved Items:

- Finalized the idea of using the third motor for the scoop.

NOVEMBER 26, 2004

TIME: 1:30 PM - 8:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID

This meeting was held in Joseph Corry's house. After everyone arrived, we all decided to change the scoop and object designs. The scoop design was changed to a mixture of a scoop and lance. The scoop looks like a lance, but it would act like a scoop. As for the objects, we changed them to triangles without a base. The objects were built out of K'nex pieces. That way, the lance would come under the triangles, move up vertically to pick up the objects, then move the lance down to deposit the objects. The triangles represent ores known as Xenium, a fictional material that we proposed would be mined for energy (within the story, which was in its beginning phases at this point). The triangles each had a piece of white electrical tape attached to them. These electrical tapes are used to let the robot know that it is near an object. We used a light sensor to aim at the objects as the robot moved by them. We used the other light sensor to see where the robot was on the course. The course has white electrical tapes for the robot to pick up with its second light sensor. At this point, the robot was completed in its construction.

The Course Designing Group constructed the two buildings that represent points B and C. One of the buildings will be a refinery station where the Xenium ores (the three objects) are going to be deposited together to be refined. The other building is going to be an international space agency of Mars where the ores are going to be deposited individually, and the siren is sounded. The course was also painted. After it was painted, the course looked almost like the surface of Mars. The Programming Group developed a test program for the robot to pick up one object and move back a little. They were able to fine-tune the program to make the robot work almost all of the time very efficiently.

Action Items:

- Built the robot.
- Painted the course.
- Constructed the buildings.
- Made objects out of K'nex that would represent a fictional element called Xenium.
- Started Programming.
- Built the scoop on the robot.

Resolved Items:

- Finished constructing the robot with the scoop.
- Painted the course.
- Constructed the buildings.
- Finalized and constructed the objects.

NOVEMBER 30, 2004

TIME: 1:15 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

We were informed that the PowerPoint should include how we handled our defensive programming and architecture. We have the robot recalibrate itself so that the battery level wouldn't affect the performance. We also adjusted the sensors so that it was in a proper position to sense the electrical tapes, as well as able to control the motor speed. The Course Designing Group made good progress from last Friday. They have started carving out the first half of the mountains from cardboard. The Course Designing Group also started looking up some datasheets for chips that are going to be used for the chaser light circuit that is going to be mounted on the course. By looking up these chips, we would be able to know how to implement each chip into the protoboard.

Action Items:

- Making the mountains as the background of the course.
- Started designing the chaser light circuit that would be mounted on the course.
- Continued to program the robot.
- Programmed the robot to recalibrate itself.

Resolved Items:

- Programmed the robot to recalibrate itself.

DECEMBER 1, 2004

TIME: 1:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

Today, we concentrated on the course and the programming. For the course, we have both pieces of cardboard mountains cut out. All we need to do is to paint the mountains. For the chaser light circuit, we wanted to order sample chips, but decided not to since we had some of those chips at our disposal. The Programming Group had problems getting the robot to move. Fortunately, they were able to come up with a solution. However, we ran out of time as soon as the Programming Group came to the knowledge on how to fix it.

Action Items:

- Cut out the cardboard mountains.
- Programmed the robot.

Resolved Items:

- Finished cutting out the cardboard mountains.

DECEMBER 2, 2004

TIME: 1:15 PM - 2:00 PM

TIME: 3:30 PM - 5:30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, MATTHEW RODRIGUEZ, TARUN, ANTHONY,
ALAN

During class time, the Course Design Group were able to lay out the mountains along one long side of the course to see if the mountains fit the side. The protoboard circuit for the chaser lights is completed; they just have to implement the siren into the circuit. The group knows how to implement the circuit into the course but they couldn't get to work because they did not have a drill at their possession to drill holes for the LEDs.

After school, the entire team collaborated to form the storyline for our robot:

Year: 2069 AD

On Mars, we have a newly civilized habitation as well as a refinery. There are supply lines to transport miners and materials. But, an unprecedented dust storm cuts off the supply lines. The mining operations can no longer continue, and, as a result, the habitation can no longer acquire energy-rich Xenium. The existing supplies are dwindling. The habitation sends a distress call to earth and they send "The Salvation" (the robot) to brave the perils of the dust storm and acquire the much-needed Xenium ore.

We also have an outline for the movie we would show along with the PowerPoint presentation:

- Show course, show people mining
- Dust storm footage - Total Recall
- Distress call - satellite with backdrop of audio of distress call
- Response of ground control
- Show rocket taking off
- Space Macromedia Flash clip
- Robot landing (also using Flash)

Action Items:

- Chaser light circuit completed.
- Storyline finalized.
- Brainstormed movie outline.

Resolved Items:

- Chaser light circuit completed.
- Storyline finalized.

DECEMBER 5, 2004

TIME: 2:00 PM - 6:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, ALAN

This meeting was held in Alan Mooiman's house, where we made the introduction of the movie. First, we constructed a launching tower using K'nex pieces. Then, we went out to a parking lot to start filming our movie. We first took frame-by-frame shots of astronauts (Lego characters) going up to the rocket through an elevator. Using Alan's model rocket, we filmed the rocket being launched. All of these frame-by-frame shots and film clips would be put together to make the movie that we would show to explain the storyline of our robot.

Action Items:

- Started the movie for the presentation.

DECEMBER 7, 2004

TIME: 1:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ALAN

The Programming Group programmed the robot to pick up and deposit the objects. The Course Building Group worked on the chaser light circuit. They started the process of moving the circuit from a temporary protoboard to a smaller and final protoboard. The group saw that they should put the chaser lights running along the sides of the course itself. The Course Building Group also decided to make flags of various countries. These flags would represent modern countries of Earth that were finally able to have a united settlement in Mars. There would be six flagpoles, each representing continent, except for Antarctica. Each pole would have four flags of four countries from a specific continent. The group started looking for the flags. They even thought of putting the flagpoles along the sides of where the habitation was going to be.

Action Items:

- Transferred the chaser light circuit onto a final protoboard.
- Decided to put the chaser lights along the sides of the course.
- Started printing flags (which will be mounted on the course) to represent countries.

Resolved Items:

- Transferred the chaser light circuit onto a final protoboard.

DECEMBER 8, 2004

TIME: 1:30 PM - 2:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

Today's meeting was pretty much a continuation of our previous engagement. We continued working on the flags for the course. We went a step ahead for the chaser light circuit. We started to drill holes for the LED's to fit into the course. We didn't finish drilling all of the holes, but we made the holes wide enough for the LEDs' leads to fit down through the circuit and narrow enough so that the LED's would not fall through.

Action Items:

- Continued working on the flags.
- Started to drill holes for the LED's on the course.

DECEMBER 9, 2004

TIME: 1:15 PM - 2:00 PM

TIME: 3:30 PM - 5:30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, MATTHEW RODRIGUEZ, ALAN

The PowerPoint/Flyer Group worked on the PowerPoint and the Course Designing Group worked on the flags and chaser light circuit. The PowerPoint Group implemented the storyline into the PowerPoint. The Course Designing Group drilled all of the holes for the LED's to go through, and drilling bigger holes at the bottom of the course.

After school, we finished drilling the bigger holes on the underside of the course so that we could start connecting the leads from the LED's to the circuit itself. The circuit is on the smaller protoboard, which was mounted the protoboard onto the bottom of the course. The group also made the circuit for the siren on the same protoboard. The PowerPoint/Flyer Group completed 90% of the PowerPoint. The Course Designing Group started soldering the LEDs onto the bottom of the course. We tested the first four pairs of LEDs; they worked perfectly.

Action Items:

- Continued working on the flags.
- Started the PowerPoint.
- Drilled holes for all the LED's that will be mounted on the course.
- Mounted the protoboard on the bottom of the course
- Started to mount the LED's onto the course.

Resolved Items:

- Mounted the protoboard on the bottom of the course.
- Drilled holes for all the LED's that will be mounted on the course.

DECEMBER 10, 2004

TIME: 2:00 PM – 3:30 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ALAN

The Course Designing Group has finished soldering all the LEDs to the course. We tested the chaser light circuit to see if all the LEDs turned on at certain time and whether there were any loose connections. The circuit worked perfectly as we expected. The Programming Group had some problems getting the robot to work properly. The robot was doing fine when it deposited the three objects at point B, and taking the first object and depositing at point C. When it was time to deposit the second object at point C, the robot drops the scoop right on top the first object, brings the scoop up, and goes back beyond point C as if it was going to deposit the first or the second object. This was because the robot detects the white tape on the first object while carrying the second object, and thinks that it should pick the object as it was programmed to do so. We also made a list of things that need to be done tomorrow when we meet at Joseph Corry's house, which are listed below:

1. Paint the mountains
2. Paint the two buildings
3. Revise the journal entries that were made so far
4. Finish the PowerPoint Presentation
5. Finish the Flyer
6. Finish at least 85% of programming the robot
7. Mount the Siren
8. Decide Costumes that we are going to wear on the day of the competition

Action Items:

- Soldered all of the LED's onto the course.
- Chaser light circuit worked perfectly on the course.
- Continued programming the robot.
- Made a task listing for the next meeting.

Resolved Items:

- Soldered the LED's to the course.
- Chaser light circuit worked perfectly on the course

DECEMBER 11, 2004

TIME: 1:30 PM – 10:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, MATTHEW RODRIGUEZ, ALAN

Today's meeting was held at Joseph Corry's house. Joseph Corry composed a theme song for our presentation. The PowerPoint/Flyers Group finished 95% of the PowerPoint as well as 95% of the flyer. The group was finishing up the movie that we left of creating from last week. Today, they took frame-by-frame shots of the space ground control on Earth getting a distress call from the habitation on Mars about the dust storm. The ground control and the crews were all created with Lego pieces and Lego characters. What we need on the flyer is a picture of the robot itself and the course. Since we did not have a big, white poster board that would be used as a background, we couldn't take the picture of the robot and the course.

The Course Designing Group and the Journal Group made great progress today. The two buildings, which are going to represent the habitation and the refinery station, were painted. The mountains, which are going to represent those in Mars, were painted too. We could not mount the siren, on account that we forgot to bring it from school. We also drilled holes on the sides of the so that we could mount the flagpoles on the sides of the course. The journal entries made so far were all revised. The whole team decided on costumes that we are going to wear on the day of the competition. We decided that everyone is going to wear a white shirt or T-shirt, with black dress pants, and red neckties. As for the Programming Group, they continued programming the robot to pick up the three objects individually and put them on the area where the coffee lid is going to be placed.

Action Items:

- Composed a theme song.
- Continued working on PowerPoint and Flyer.
- Continued working on the movie.
- Painted mountains and buildings.
- Revised the Journal entries made so far.
- Decided on the costumes.

Resolved Items:

- Theme Song.
- Costumes.
- Painted mountains and buildings.
- Revised journal entries made so far.

DECEMBER 13, 2004

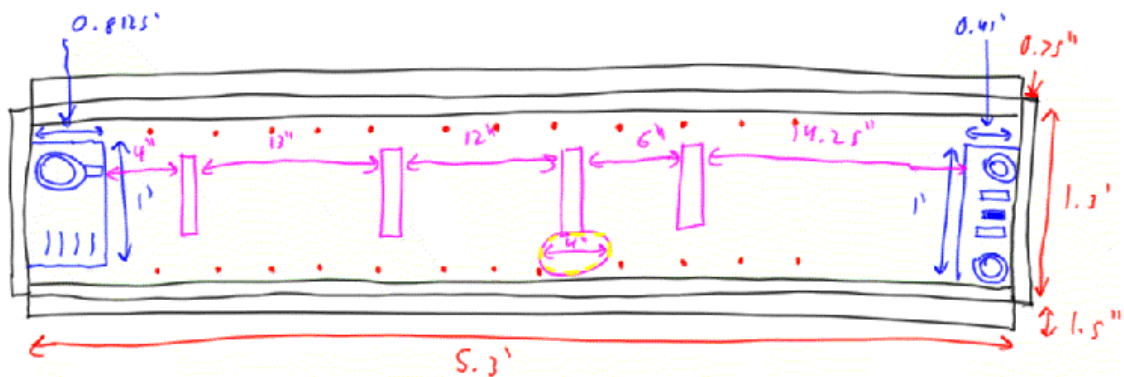
TIME: 1:15 PM – 2:00 PM


TIME: 3:30 PM – 6:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

One of our team members brought in a coffee can lid, in which the objects are going to be placed by the robot, as stated in the requirements. We nailed the lid down where we wanted it to be, and glued one-fourth of the can on the lid using hot glue gun. The Course Design Group mounted the siren on the corner of the course. They even connected the siren to the circuit mounted on the bottom of the course. After school, the Programming Group continued programming the robot. So far, they got the robot to carry the three objects, drop them, pick them up individually, and drop at least two of the objects on the lid. They still have to add the program that simulates the robot to dance, which they have done earlier, into the main program.

Below is the sketch of the final course layout:



White Electrical Tape - 

LEDs - . . .

Blue are the buildings

Black is the course outline

Action Items:

- Mounted the siren.
- Mounted the coffee can lid and glued it on the course.
- Continued Programming.

Resolved Items:

- Mounted the siren.
- Mounted the coffee can lid and glued it on the course.

DECEMBER 14, 2004

TIME: 3:30 PM – 7:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

The Course Design Group attached the mountains on one of the long sides of the course using staple gun. The flagpoles were also attached to the course. We even mounted a push-button on a piece of wood, but not attached to the course. The push-button is going to trigger the siren when the robot pushes it after it deposited all three objects into the lid. The Programming Group added the program that simulates the robot to dance in the main program. There were few problems adjusting the robot to dance after it placed all three objects at point B and before it picks up the first object. After school, the Programming Group got the robot to work 95% of what it is programmed to do. The group has to finish fine-tuning the dance to make the robot work 100% of what it is programmed to do.

Action Items:

- Attached the mountains and the flags to the course.
- Started constructing the push-button for the siren.
- Programmed the robot's freestyle.
- Continued Programming.

Resolved Items:

- Mountains and flags attached to the course.

DECEMBER 15, 2004

TIME: 1:15 PM – 2:00 PM

TIME: 2:45 PM – 3:00 PM

TIME: 3:30 PM – 5:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, ANTHONY, ALAN

The Programming Group fixed the whole program, including the portion that simulates the robot to dance. The robot now works completely. The whole team was proud of the group for finishing this task, which took several days. Shreemayee De started making the nametags for everyone in the team. These tags are going to be worn on the day of the competition along with our costumes. The PowerPoint and the Flyers were both completed. So far, we have to:

- Finish and print two copies of the journal
- Print 100 copies of the flyers
- Print our Logo that is going to be displayed on the day of the competition
- Print a picture of our robot on a glossy paper
- Attach the building on the course

Action Items:

- Completed the program.
- Made a task listing for the tasks needed to be accomplished before Friday.
- Started making nametags.
- PowerPoint and Flyers completed.

Resolved Items:

- Completed the program.
- PowerPoint completed.
- Flyers completed.

DECEMBER 16, 2004

TIME: 1:15 PM – 2:00 PM

TIME: 3:30 PM – 5:00 PM

ATTENDEES: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, MATTHEW RODRIGUEZ, ANTHONY, ALAN

The Course Design Group attached the buildings on the course, using a hot glue-gun. They even made final touches on the course by adjusting the electrical tapes on the course, which are used by the robot to sense in order to make its movements, and giving final paint touches on areas where there are scratches. After school, everyone in the team came up with ideas of how to present in front of the judges on the day of the competition. The Programming Group tested the robot several time to make sure that it works 100% of the time.

Action Items:

- Attached buildings to the course.
- Made adjustments to the electrical tape on the course.
- Finished fine-tuning the program.
- Painted scratches on the course.

Resolved Items:

- Attached buildings to the course.
- Final electrical tape adjustments.
- Fine tuned program.
- Touched up on the course.

DECEMBER 17, 2004

TIME: 12:30 PM – 2:00 PM

ATTENDANCE: JOSEPH, SHREEMAYEE, DAVID, MATTHEW
ROTHBERG, MATTHEW RODRIGUEZ, TARUN, ANTHONY, ALAN

Today was our final meeting. We listed all the things we need to have with us when we go over to the place where competition is going to be held. We printed 100 copies of the flyers that were completed on December 15. We even printed our logo, and a picture of the robot on a big, glossy paper. After this journal entry is finished, the Journal Group is going to print two copies of the journal. We went over how our team is going to present in front of the judges on the day of the competition. After we were done, we made sure we finished every task as well as made sure if we followed the requirements of the competition. We all hope that the robot works on Monday at the competition. We are confident that it indeed will, and hopefully we will win first place this year.

Action Items:

- Finished the Journal.
- Printed 100 copies of flyers.
- Printed 2 copies of the journal.
- Printed our logo.
- Printed the picture of the robot.
- Practiced the presentation.

Resolved Items:

- Finished the Journal.
- Printed 100 copies of flyers.
- Printed 2 copies of the journal.
- Printed our logo and the picture of the robot.
- Practiced the presentation.