

02.05.2002

STAR SHINE 4:REPORT OF 2ND GROUP OF FARZANEGAN

MIRROR GRINDING & POLISHING REPORT

PREFACE:

Before writing about the process of our work, we wanted to thank you for letting Iranian students to take part in this project. Although we received the kit too late (thanks to our customs) we tried to do our best so your trust would be appreciated.

WORKSHOP REPORT:

At 8 o'clock in the morning (local time) all the sixteen students and two of our teachers (Mr. Jafarzadeh and Miss Azimlou) were present at our school's physics lab. After watching the description on the cd, we prepared two tables and divided into three groups. After examining the kit, the first two groups started to work (including our group).

Members of the group: Tina Kadkhodayan, Saghar Asadi, Sara Feizbakhsh, Sara Zonouzi, Hiva Pazira

Mirror number: 4-992

Start: 9:23 a.m. local time

Finish: 12:45 p.m. local time

PHASE ONE: Mirror Grinding

Due to the instructions, we prepared our table and Sara Feizbakhsh, who was the first to start, washed her hands. Using eight drops of the Aluminum Oxide slurry, she started grinding the mirror on the washed glass plate. According to their role in the process, the grinders' names are:

Sara Feizbakhsh	the first 5 minutes
Sara Zonouzi	the second 5 min.
Tina Kadkhodayan	the third 5 min.
Saghar Asadi	4 minutes
Hiva Pazira	3 minutes and washing

Not a perfect result. Although the blue color of the permanent marker was gone, but sides were still a little shiny and there were a few small scratches on the

sides. We also saw a large scratch in the middle, which was disappointing. So the team and our teacher decided that it would be better if we continue the grinding. Sara Z. continued the process after being reminded to wash her hands (!) for another 5 minutes. This time the result was very good. We dried the mirror with the special tissue you had sent us and waited for the third team to finish their grinding. (We didn't have enough space so we had to wait for the table!)

SECOND PHASE: Mirror Polishing

At 10:58 (when the table was free for us to work) Sara Z. started the polishing with the green paste after sticking the pad on the washed and dried glass plate. You see the polishers' names in the order of polishing below:

Tina Kadkhodayan	the first 5 minutes
Sara Zonouzi	5 minutes
Saghar Asadi	5 minutes
Sara Feizbakhsh	5 minutes

After 20 minutes we washed the mirror under the running tap water. The monotony was perfect but we saw some scratches on the sides. We decided to continue for another 5 minutes as Mr. Jafarzadeh suggested. So Hiva continued for 5 minutes. After washing the mirror we could count more than 13 scratches on the mirror!! We were totally confused and couldn't figure out the reason of so many scratches. But since we couldn't use more paste we sat hopelessly waiting to perform the third phase. Tina and Hiva tried to cheer the other teammates up but it seemed useless. We really wanted our mirror to be on Star Shine 4 and we were (and are!) craving to be a part of Star Shine 5.

POLISHING WITH THE BLUE DIAMOND PASTE:

We started performing at 11:40. Sara F. and Hiva started eating their lollipops and said they don't have the heart to work because it was so delicate and asked the other three to continue. Sara Z., Tina and Saghar worked on the polishing in the order below:

Tina Kadkhodayan	the first 7 minutes
Sara Zonouzi	the second 7 minutes
Saghar Asadi	the third 7 minutes

As we were polishing, we could feel (perhaps with our 6th sense) that some scratching was taking place. So without listening to our teacher we added up to

10 more drops of the Hyprez Lubricant (besides the first eight!!). So after washing the mirror we realized that we've been scrubbing the mirror (being so careful to use even force on every spot of the mirror) with out making good changes on the mirror. Although the scratches had became less, it wasn't a mirror yet and we couldn't see things clearly. We added a dot of the blue paste on our polishing pad and Tina continued polishing. After three to four minutes, we washed the mirror and showed it to our teacher hopefully (Sara Z. wasn't optimistic at all!). Mr. Jafarzadeh told us that everything was shown clearly in the mirror and that it was ready for the Newton test.

PHASE THREE: Mirror Flatness Testing

We were the first group to test, so we brought out the inspection flat from the kit box and started testing. Hopefully there weren't more than seven dark circles around each scratch (the least was five circles). Just when the testing was finished and we were hugging each other, Maedeh Maghsoodi, a member of the other group, skidded the inspection flat terribly on our mirror to get it to her group's mirror as soon as possible. And the result was thousands of scratches in the center of our mirror. We couldn't even think of how to deal with *her*. All we wanted was to make those scratches disappear. But there was nothing we could do but waiting to see if anything would remain from the precious blue paste. We couldn't believe our eyes when we saw that after the other two groups finished their job, there was still some of the paste left. The team asked Sara Z. to do her best and concentrate only on the mirror. She continued polishing for 5 minutes with using more force on the center (which was full of scratches) with out using the lubricant at all. While all the teammates were holding their breath, we washed the mirror. The result was very good. We could only see a few small scratches on the surface of the mirror.

The whole work was finished at 12:45 p.m. local time. Afterwards we spent half an hour taking pictures with our mirrors and signing our names on our name sheets!

As the final note we wanted to thank you again for all the fun and joy we had during the process. We're waiting to here from Star Shine 4 circling the earth next year.

WRITTEN BY: SARA ZONOZI