

# KALEIDOSCOPES

I chose to explore the 'kaleidoscope'. I know that this is not original and I know that it has been explored many times before but I chose it because I wanted to improve and maybe even invent my own designs. It all started when I went to my mother's work, mother a child care centre, I had to go there to see her about something and why I was waiting I went and sat with the little kids. They were excited because they were playing with kaleidoscopes and they were showing me all the pretty colours. I found this so interesting, that something as simple as a few little mirrors could bring so much excitement and fun to these kids. That's when I decided to stop making the love seat that I had originally decided to make and I started working on my new and more exciting project. I started researching kaleidoscopes, I never found who invented it or the year it was made, all I found was ways to make them and what to buy. This was no good to me, I wanted to start from scratch. I wasn't going to go to a hardware store and buy wooden cylinders or the pieces of plastic to make those pretty colours. I was going to recycle products and use a whole range of different things from food (sprinkles) to glitter etc. So my major project is going to be kaleidoscopes made from household items. Plus they are for children so they must be safe and unbreakable.

### **TERM 4 - 2001**

This is the first term of year twelve (12).

In this term we were told that we had to choose something to make for our MDP (major design project). We were told to choose carefully because this is what we would be doing all our work for the next three (3) terms. This was what the HSC makers would be marking and to be creative. I thought about this for a few days, what could I make that was original and fun??? I decided to make a Love seat; this was a seat that was made for two (2) that hung outside on the veranda. I researched this product and set out to make it. It was going to cost me \$230 not including cushions. The price was fine and I could get the material without any hassles. But because I was so busy in this term with all the new courses I was doing, I didn't do much work on my MDP. I decided to get the materials in the holidays and when I came back I would get to work on it straight away.

### **TERM 1 - 2002**

I started designing my love seat, I had all my sketches done they were all drawn to scale. I was going to Merrylands to buy the wood and I need to get some money off my mother. So I decided to go to her work and get it there rather than wait for her to get home at 5.30pm. When I went to her work she was really busy so she told me to go and play with the kids while I waited for her to finish. While I was waiting was playing with these little kids they were about 3 and they were showing me the kaleidoscopes they were saying look look, look at all the pretty colours. I found this so interesting that this little invention was so interesting to these children. I then started thinking that maybe I should do something like that. That was when I decided to make kaleidoscopes instead



of the love seat I had chosen. So my new aim was to make an original kaleidoscope that was suitable for young children of all ages. This means it would have to be safe and unbreakable. I started to research the kaleidoscope on the Internet. I couldn't find who invented it or why it was invented, maybe it was an experiment that had gone wrong, who knows. I'm sure that I could have found these things out but to me they weren't relevant.

## **TERM 2 - 2002**

Ok this was the term where I started working on the kaleidoscopes and I started experimenting with different things that were colourful and bright. I didn't want to spend too much money on this projects I decided to recycle used products, for example Pringles containers toilet rolls fish food containers etc... Once I found what I needed I started making the kaliedoscopes and I only used things we already had in the house except for the plastic mirror that I got from BBC. This term was spent experimenting and learning all the ways a kaleidoscope works.

## **TERM 3 - 2002**

This term was the get serious term! Now there was no more time to muck around, this was it. I spent this term finishing off my half finished kaleidoscopes that I had slackened off from. I made sure that the best ones were decorated better than the unsuccessful ones. All together I made fifteen (15) kaleidoscopes and five (5) were successful. I have done what I set out to do, I have made kaleidoscopes that are original and safe for children, and they are made from recycled products so it wasn't expensive.

## **MY KALEIDOSCOPE**

- First step was to find cylinders of all sizes. Pringles containers, toilet rolls, film canisters, fish food containers, etc...
- Then I had to buy mirror. I went to BBC Hardware and they gave me this plastic mirror, this was better for me to work with as it doesn't break as easy and it's very flexible. This makes it better for the children, so they're able to drop them as children do.
- I then had find out which angles worked best. I tried square, triangle, hexagonal and pentagonal. I found that triangle worked the best. So I decided to use triangles on all my kaleidoscopes.
- I had to be sure the materials I used let the light shine though.
- Because I had cylinders of all sizes I made triangles of all sizes. I found that the closer they were the better the effect. I have made five (5) successful kaleidoscopes, that's are not many considering that I made around about fifteen (15) kaleidoscopes.
- I found that if the mirrors weren't six (6) centimeters long it wouldn't focus, so they had to be longer.
- About ¾ of the way though I ran out of mirror, so I went back to BBC but they had none in stock but they told me that you can get the same effect by putting plastic on black cardboard. So I bought that.
- I found that it wasn't as effective as the mirrors. It was much darker and didn't bring out the colours.
- I wanted to make one that contained water, so I had to find a waterproof container that the light could come though.
- I then had to find things that were heavy enough to move by themselves but not to heavy so a child could pick them up.
- My next step. I wanted to make kaleidoscopes that would not need too much handling, so I made two (2) that turned at the top and three (3) that you just turned the whole thing.
- Though this Port Folio it show my progress, and I guess you could say my journey of the kaleidoscope.



## FINANCE

Item

\$

Pringles x 2	\$ 3.49
Plastic mirror - 2 metres	\$ 5.90
Black card board	\$ 1.75
Clear plastic	\$ 4.05
Glass beads - multi coloured	\$ 1.78
Sprinkles	\$ 2.07
Hundreds and thousands	\$ 2.07
Sparkling Cachaous	\$ 1.35
Wooden cylinders x 2	\$ 2
Stickers x 3	\$ 3.50
Contact	\$ 4.95
masking tape	\$ 4.70
Sticky tape	\$ 2.85
paints - 12 pack	\$ 13.95
Sequens	\$ 2
Fish food - x 3	\$ 6
A3 Folder	\$ 12.95

Total : \$99.85

# **HOW TO MAKE A KALEIDOSCOPE**

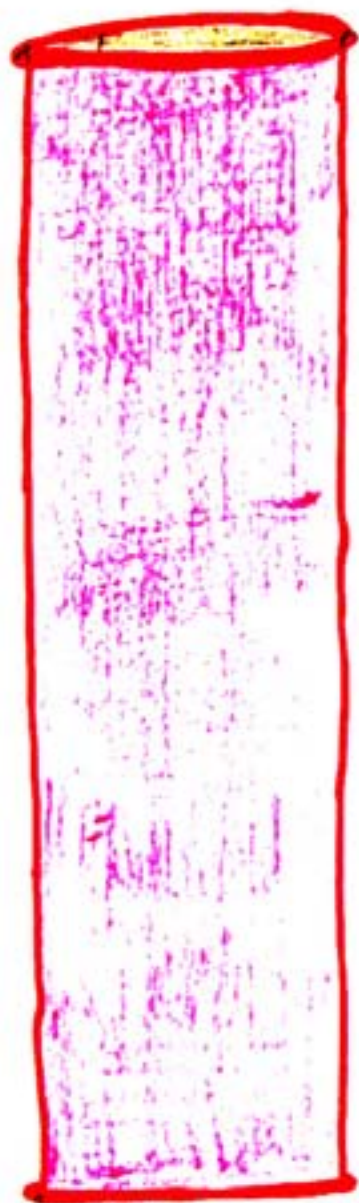
## **WHAT YOU NEED:**

- \* A cylinder that has at least a 3cm diameter
- \* Mirror plastic mirror (something that reflects off itself)
- \* Clear plastic
- \* Something that moves buy itself that isn't heavy and very colourful.
- \* Masking tape or sticky tape (thick)
- \* Glue (strong craft glue)

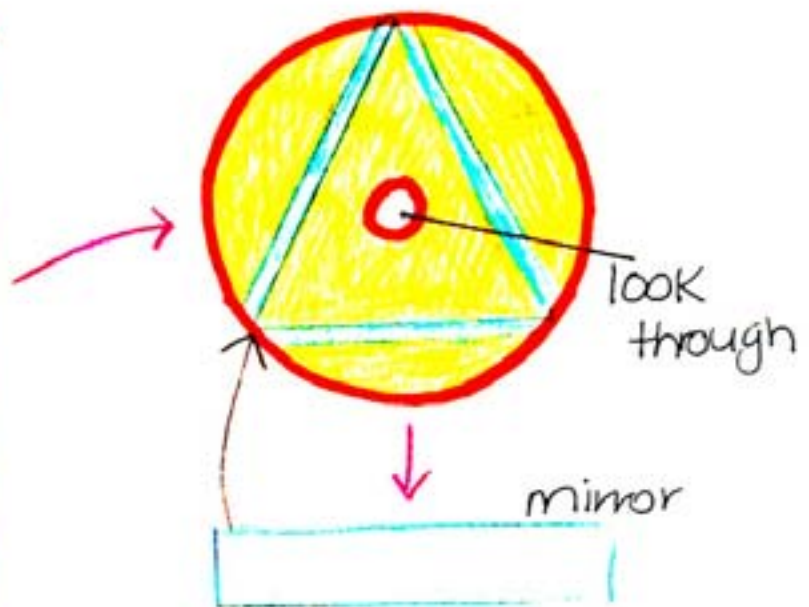
## **INSTRUCTIONS**

- \* First cut your mirror into three (3) even strips, but make sure to measure that the strips fit into the cylinder.
- \* Then tape the three (3) pieces together to form a triangle. When you look though you should see the effect already.
- \* Then put the glue on the outside of the triangle where the two (2) points meet.
- \* Then place the mirror inside the cylinder wait for that to dry. this should take about two (2) hours.
- \* While it's drying, cut a hole in the lid of your cylinder and glue the lid on.
- \* Once this is all dried put what you have chosen in a clear plastic sachet and tape it to the opposite end of the lid.
- \* Congratulations you've just made a kaleidoscope.

mirror inside cylinder



Cylinder



Sprinkles



Sparkling  
Cachous



water



Civic  
Sequins

flower,  
hearts  
and star  
sequins





# Kaleidoscope 1 (Yellow)



Pocka-Dot  
Sticker



music note  
Sticker



Key board  
Sticker



Black & white  
stripe Sticker



Plastic mirror



Glitter flower  
Stickers

Materials  
Used

Yellow Paint.





# Kaleidoscope 2 (Dark Blue)



Dot Stickers

Star Stickers



1  
Sparkling  
Cachous



1  
clear  
plastic



1  
Black  
cardboard

I also used  
Bear & lollipop  
stickers.

Materials  
Used

Dark Blue



# Kaleidoscope 3 (Green)



contact

— Colour Strips



Plastic mirror

masking tape



Colour plastic circles



cylinder wood



Stickers

Materials used

Green paint





# Kaleidoscope 4 (Light Blue)



balloon paper

Gold Glitter



Colour Sequins



Sticker strips



plastic mirror

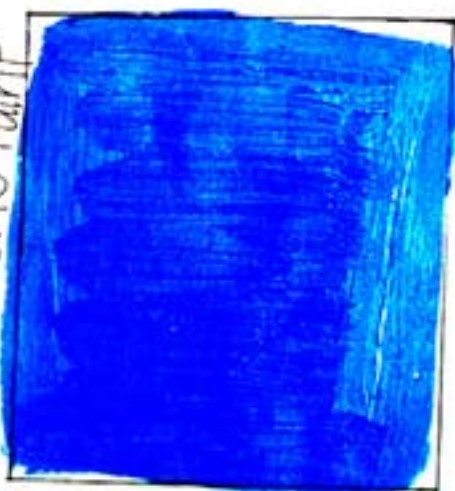
Balloons



stickers

Materials  
Used

Light Blue Paint



# Kaleidoscope 5 (Red)



Strip  
stickers



Sprinkle  
sticker



Pocka-dot  
sticker



Stripe  
sticker



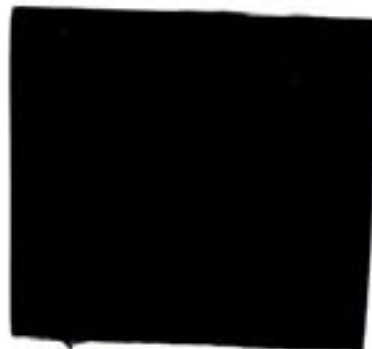
shape  
stickers



heart stickers



Sprinkles



Black  
shiny  
plastic

Materials  
used

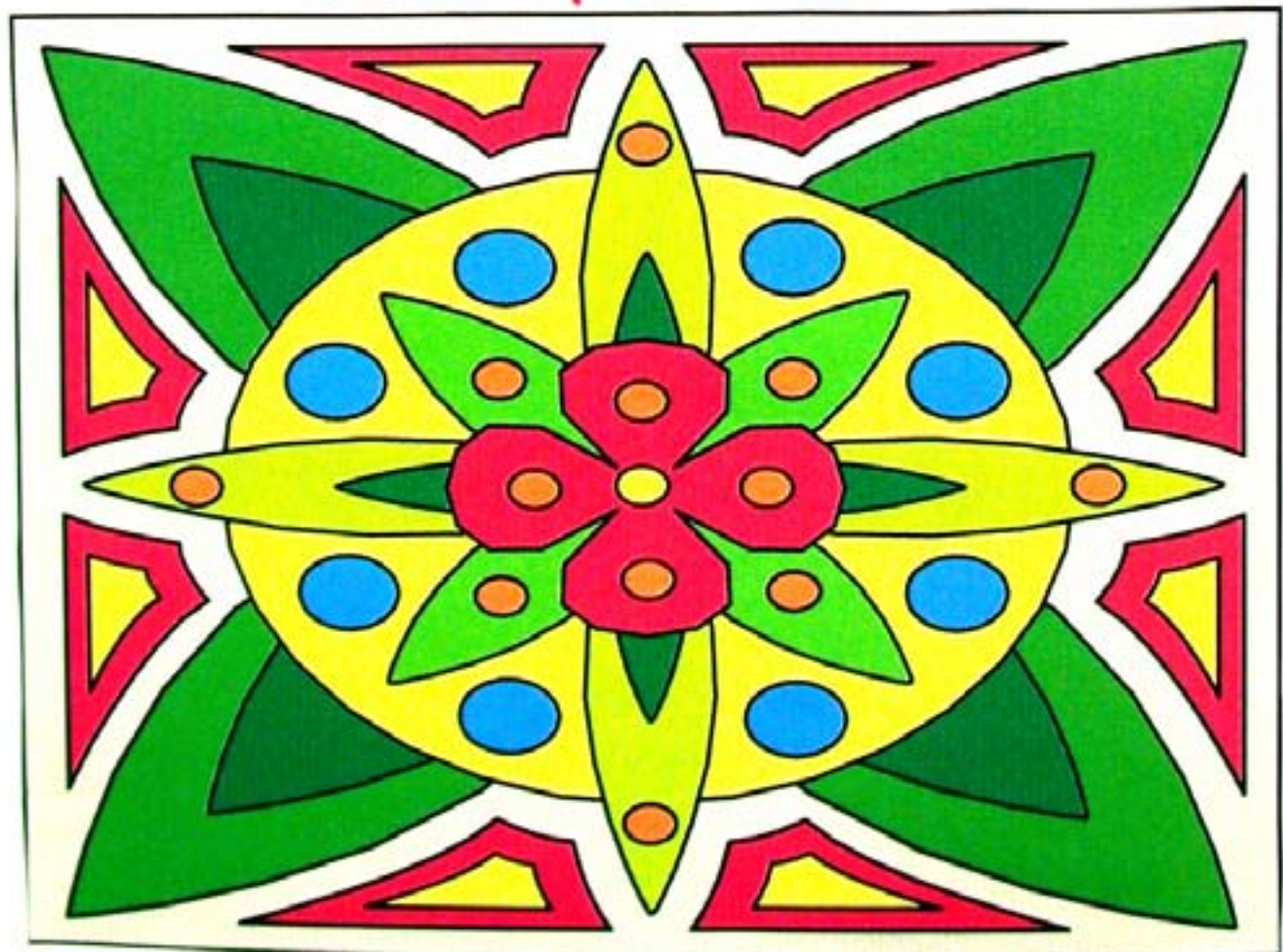
Red Paint





# Samples of Kaleidoscope designs from the internet

Sample 1





# Samples 2 + 3





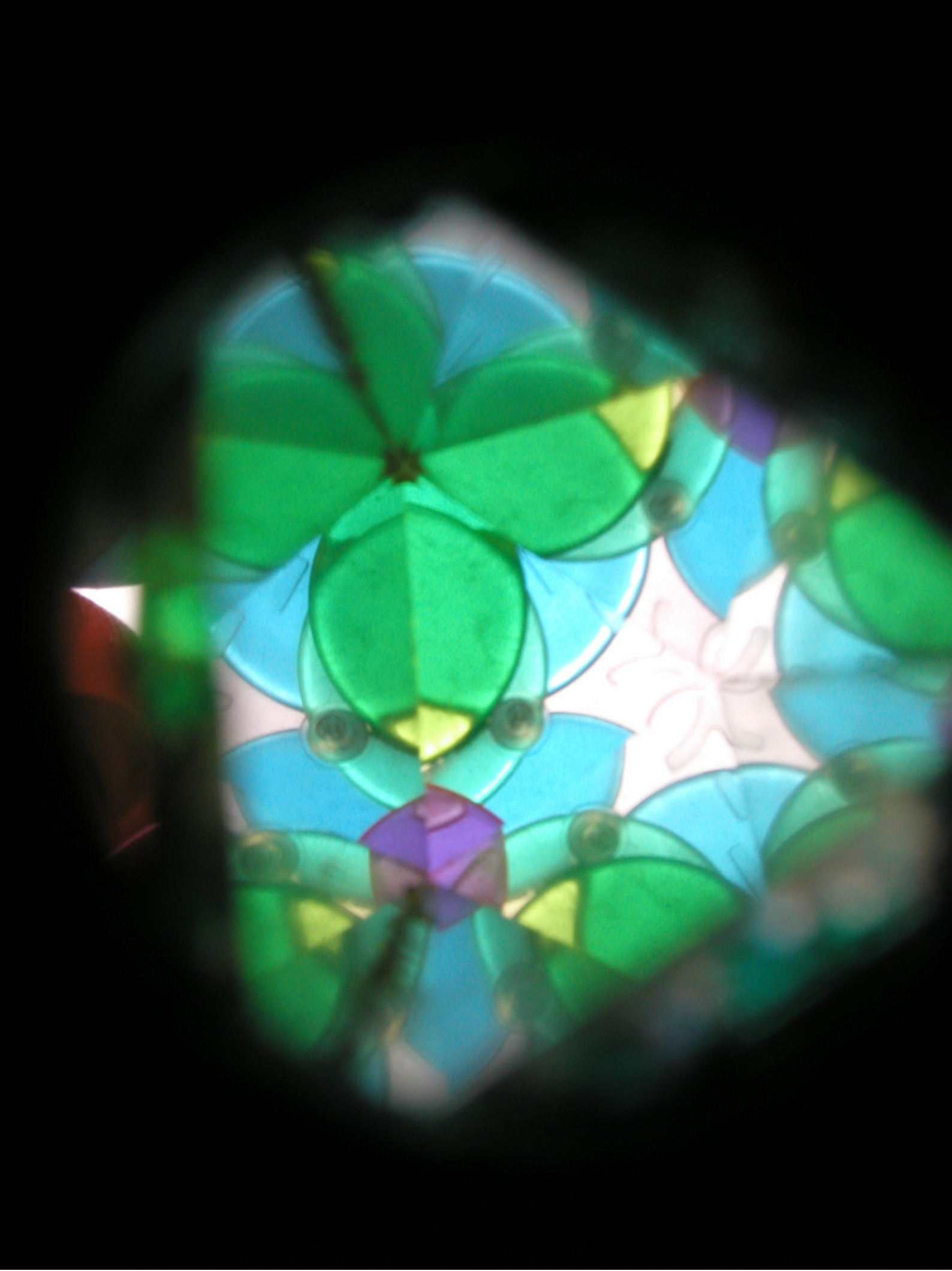
# Samples 4 + 5

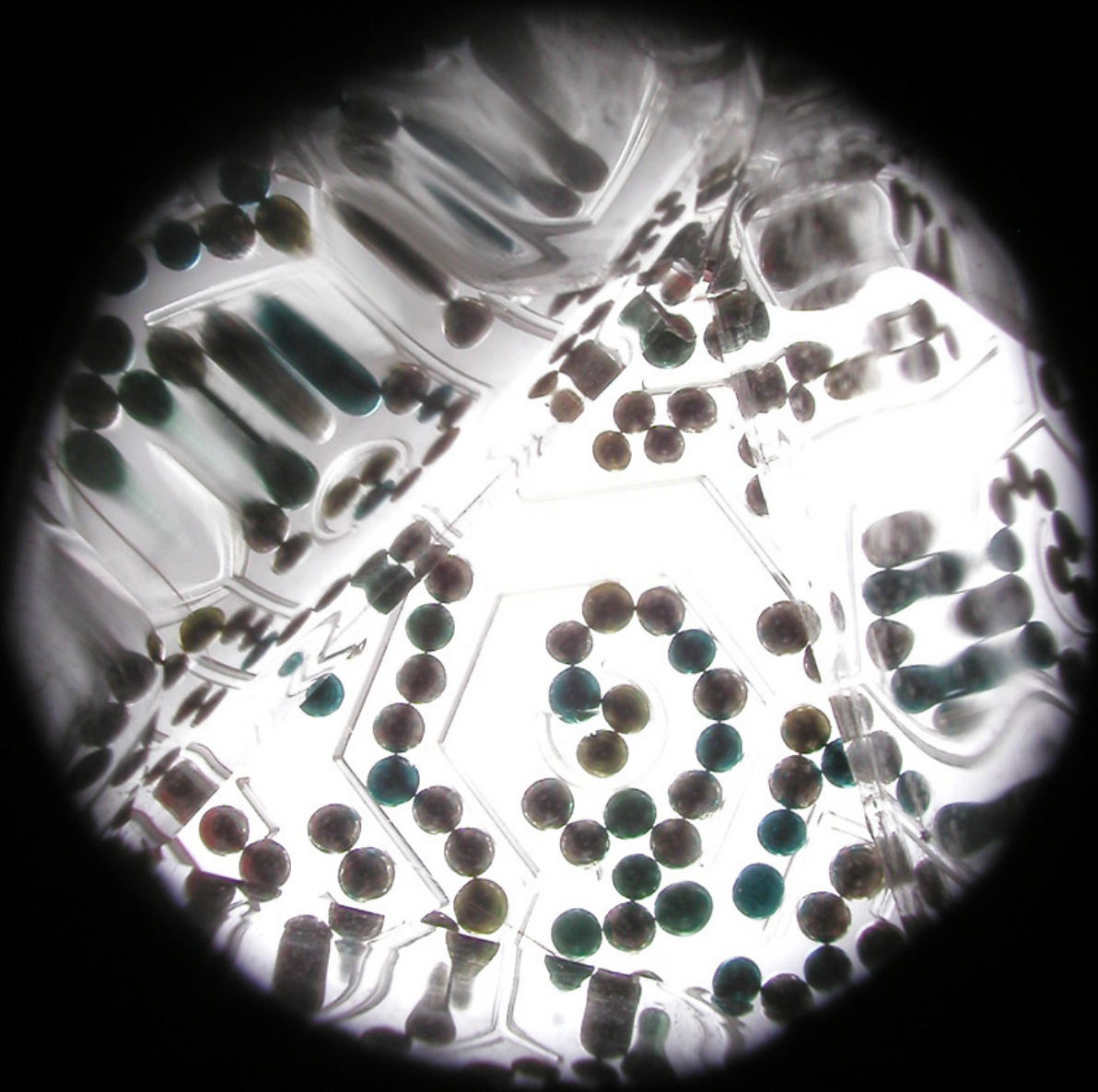




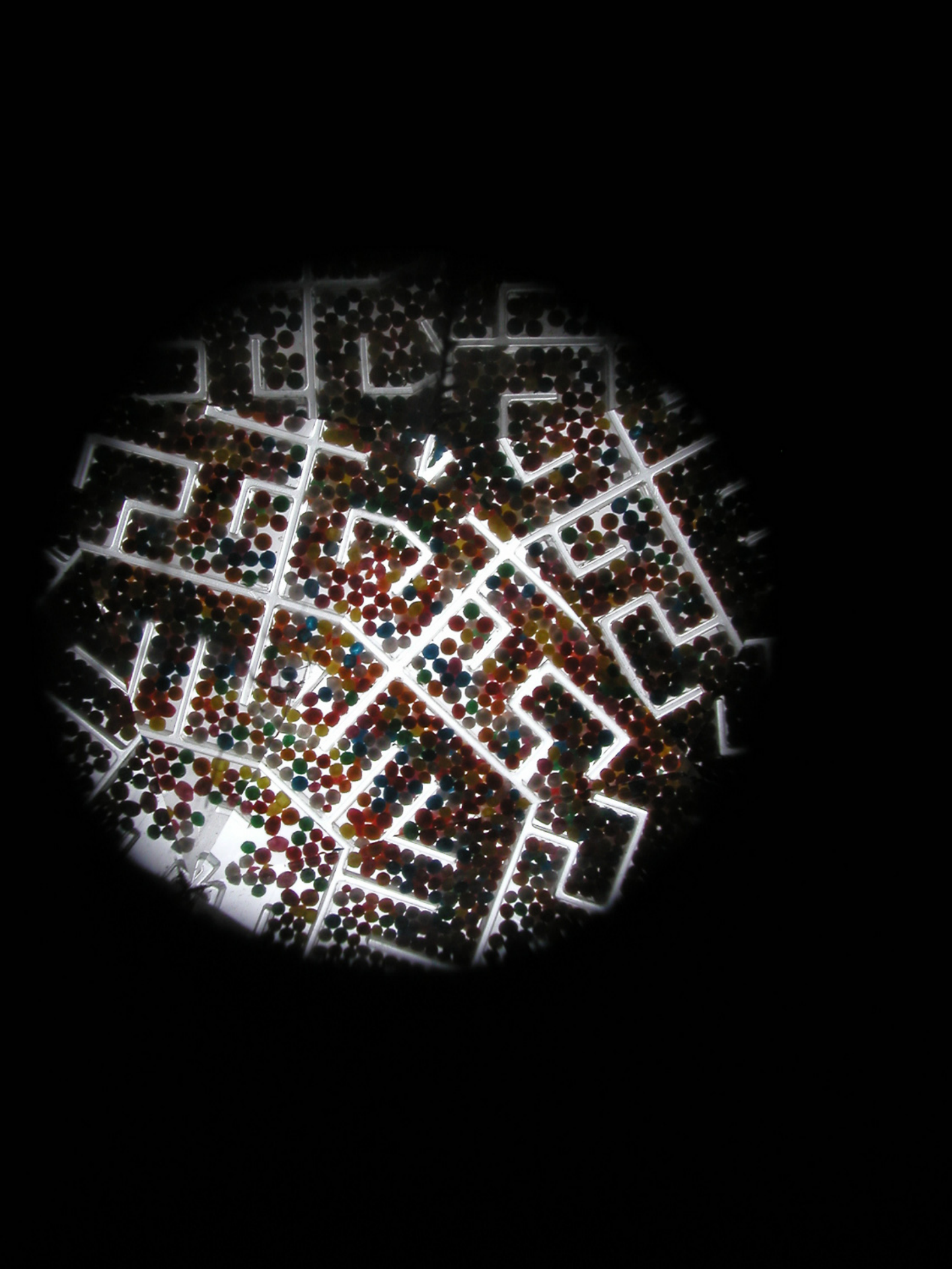












# HSC 2002 – Design and Technology

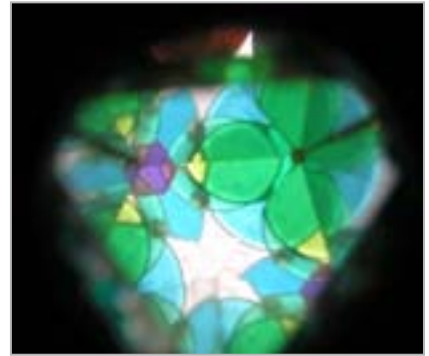
## Major Design Project

Band 1/2

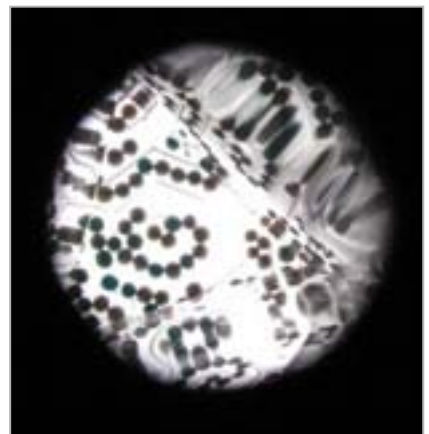
Sample 3



PRODUCT



DETAIL 2



DETAIL 3



DETAIL 1



DETAIL 4

- the student shows awareness of management , but demonstrates Ineffective time planning [CLICK TO VIEW \(P3\)](#), "Term 3 – 2002".
- materials used are listed and prices noted.
- limited research and application, minimal experimentation of the working principles of a kaleidoscope.
- aesthetic features are appropriate, and developed with extensive explanation. Functional criteria not developed.