# ELEMENTS OF FORM AND SPACE 3

PLAY SPACE, GAMES AND TOY DESIGN

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Special Thanks to: Prabhat Education Foundation - Mr. Keshav Chatterjee



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18BDI034 - Industrial Design Semester 6

February 12, 2021







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### ELEMENTS OF FORM AND SPACE - III

Course Code	IDSK 322
Course Title	Elements of Form and Space III (Unconventional Materials)

## Course Learning Outcomes (CLO):

At the end of the course the students will:

- 1. Innovate forms with new materials that are not part of the commercial and conventional practice.
- 2. Develop forms using natural fibres, regenerated materials, using various making processes such as bonding, interlacing, moulding, shaping etc.
- 3. Experiment with materials to repurpose them in combination with other materials.
- 4. Examine conventional materials forming and shaping qualities, hitherto unexplored.

#### What is unconventional?

Anything which is not aligned with the general trend or set of rules.

Basically, anything that's nonconformist or out of the ordinary can be described as unconventional. Unconventional materials include those materials which are not common and are out of the bounds of cultural and practicality norms.

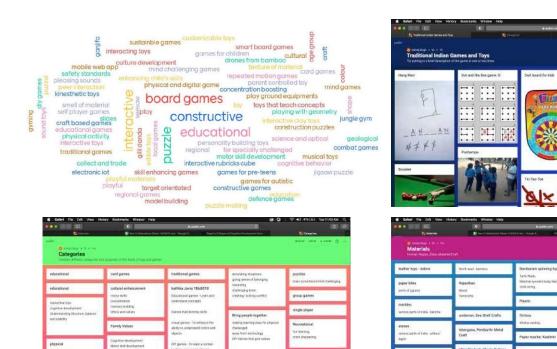
#### WHAT ARE FORMS?

What are forms? Form is defined as the shape or visual quality of something. It refers to aesthetics, how a piece looks. Form follows function is a principle that states the shape (form) that something takes should be chosen based on its intended purpose and function and not focus totally on just how it would look. If the object or product we intend to design is not comfortable to use or very functional, or if the target users are unable to figure out how it works, it becomes useless. We can rephrase, "what something does will dictate how it looks." It involves emotion and personal taste of the respective designer and ventures into that overlooked corner of industrial design. Imagine what the world would look like if we hadn't been gifted with the gene for exploring. By drawing out and looking variety of designs you can explore the shape and function of your product. When the time comes to make a choice about which way to go, having choices makes all the difference. Incorporating emotional value through forms into products has become an essential strategy for increasing a product's competitive edge in the consumer market. A good form can not be limited to good shape only, it could be achieved by colour, grip, relative shapes, emotions propagated by colour chosen, pattern, textures, how it feelssoft, hard, smooth, rough, prickly, glossy, cold etc., materials-wood, metal, cotton, plastic and so on. Some believe that depending on the product, materials with "see-through look" allowed them to appreciate the beauty of the inside components or structure, which creates an interesting visual impact. It is always an instinct to want to know a little bit more if you see something you do not understand fully, its human nature. One can manipulate forms better and to their advantage if they have full knowledge of the material and do the mapping of how it will be used while the activity is being performed.

In conclusion, to put it in simple words, 'form' is a tool. It becomes a second nature of a designer. Each designer has their own signature style and element that sets their design apart from the others. It's such that when you look at line of their pieces of work, you know that whose work it is just by seeing the personal touch in the design, may it be cooler, shape or pattern on it. Humans are trying to standardise everything which is taking away the flair. Only simple manipulation of form should be done and not overdone, it makes the design unnecessarily complicated and even more difficult than before to use. Use the skillset of form to give wings and shapes to your concepts and ideas, to turn them into tangible 'form'. Remember, a good design is "form-less".

# UNDERSTANDING & DISCUSSING; WHAT ARE GAMES, PLAY AND TOYS?

#### Starting off: Discussion and Opinions



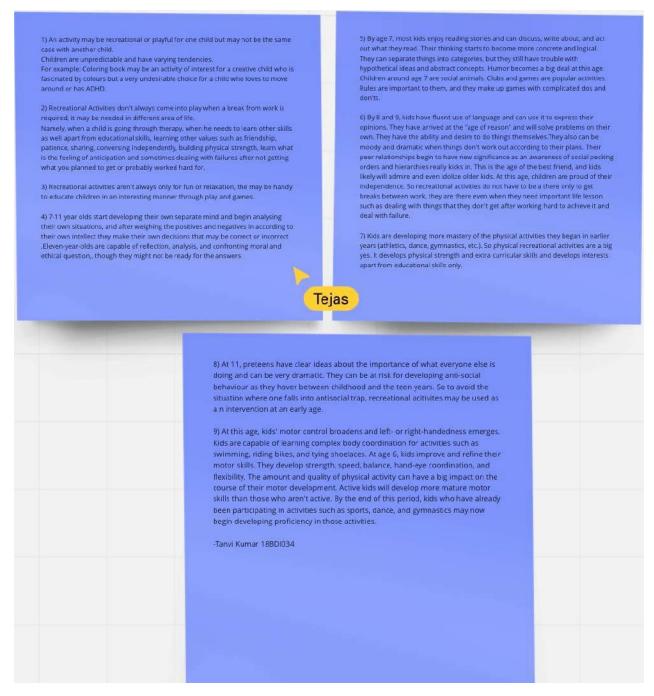
At the beginning of the course, to initiate, what are unconventional materials, games, traditional toys and games, what is play space we had a class discussion over platforms such as Padlet, Mentimeter. They are online platforms which allows various participants to post things at the same time simultaneously and it is visible to one and all present there. These were new, but very useful platforms that I learnt about during the course.

We added images and names of the games and toys we knew about. This process was an important stepping stone as It made sure we were not missing out on any important points and all opinions were coming from different perspectives and different backgrounds. Faculty scrutinised the content that we put up on the screen.

### Dividing into groups, picking area of work

We were given various options to pick a work area of our choice. A few options that were provided were traditional games, mythology, educational, play spaces for cognitive development etc.

I decided to pick recreational play spaces, games and toys for young children. I further narrowed down to working with children with "special needs" and "underprivileged children".



We noted down what "recreational" was activities were important. What was their

My insights.

according to us and why recreational "need"?

Second step was to jot down all the insights and what knowledge I had about the child behaviour of the respective age group.

-Children of the age group 7-11 years have their school and then tuitions. They can use the spare time in physical and mental refreshment
-In this age they have to learn fundamentals.
-To break the routine and help refresh the mind.

#### Insights

- Plays with no objective or end goal requires
   Imagination, games which require role-playing, or
   replicating activities (tea party, kitchen)
- Interactive play with an objective becomes Challenge may it be physical in outdoor games to mental in puzzle solving games.
- challenge that involves other people becomes conflict which then becomes a competitive play, eg. catch.
- 4) When conflict allows interference it becomes a game eg. cricket, football
- 5) Factors like Anticipation in games like hide and seek or catch

Thrill in riding bicycle or climbing a tree

Play is a powerful thing. For people dealing with a physical, emotional, or mental health issue, therapy in the form of recreation can be especially powerful.

https://www.healthline.com/health/rec reational-

therapy#;~:text=Play%20is%20a%20po werful%20thing recreation%20can%20

#### Tanvi Kumar

- Don't always come into play when a break from work is required, it may be needed in different area of life.
- Namely, when a child is going through therapy. Play therapy is a kind of therapy used specifically for children between 3-12.
- That's because children may not be able to process their own emotions or articulate problems to parents or other adults.
- A trained therapist can use playtime to observe and gain insights into a child's problems. The therapist can then help the child explore emotions and deal with unresolved trauma. Through play, children can learn new coping mechanisms and how to redirect certain behaviours.

#### BENEFITS

 taking more responsibility for certain behaviours
 developing coping strategies and creative problemsolving skills

3) Self-respect

4) Empathy and respect for others

5) Alleviation of anxiety

6) Learning to fully experience and express feelings

7) Stronger social skills

8) Stronger family relationships

Can also encourage use of language or improve fine and gross motor skills.

## FIND YOUR SPACE

Play Therapy is based upon the fact that play is the child's natural medium of self-expression. It is an opportunity which is given to the child to 'play out' his feelings and problems just as in certain types of Adult Therapy, an individual 'talks out' his difficulties.

Pondering over Play therapy as a possible area of work.

# PRABHAT EDUCATION FOUNDATION AND WHAT DOES IT DO?

# Prabhat 3 P's Promise, Power and Pioneers

We are committed to the national effort to help children with special needs to find their way to independent adulthood working in and around Ahmedabad. We work to bridge the gap between mainstream society and those with special needs. Our mission is to build the capacities of people with special needs to live with dignity and hope as productive and confident citizens.

The Prabhat Education Foundation reflects a journey that began in 2003 through the identification and nurturing of children with learning difficulties struggling in mainstream schools. In time, the widespread reality of physically and mentally challenged children in and around Ahmedabad became apparent, and Prabhat moved into serving special children, as well as their families affected by stigma, ignorance and denial. Realising the need for access to care, education and learning of this group, Prabhat conceptualised an institutional facility to provide systematic rehabilitation services that could be accessible for those challenged by poverty and mobility. Working with and through local communities became Prabhat's hallmark.

News of Prabhat spread, and children with a range of disabilities started arriving at its door, seeking assistance. Prabhat responded in 2003 with a summer workshop for special children and their families in cooperation with the Ahmedabad Education Society. The workshop provided an opportunity for exchanging experiences and ideas, and also revealed the extent and range of special needs within the city of Ahmedabad.

There was also a deep realisation of stigma and discrimination affecting the future of these children and their families. Prabhat realised the need for robust steps to make children with special needs visible, and to fight for their inclusion into mainstream society. Prabhat began work with one child and today its outreach touches more than 3000 persons with special needs in Ahmedabad as well as to their families, neighbours and communities.

Prabhat takes pride in the multidisciplinary approach it brings to reaching out to children with special needs. It starts with the team, which consists of professional from various fields including psychologists, physiotherapists, special educators, designers, communication and media specialist, artists, social media experts and many more.

#### ELEMENTS OF FORM AND SPACE - III

## **WORK AREA ANALYSIS**

Age Group: 4-7 year olds

Target audience: Underprivileged children and children with special needs.

Aim: Make an arrangement such that the children who cannot afford toys and are underprivileged or have special needs (mental / physical disorders or disabilities) can play and have fun while being interactive and have some educational experiences as well.

#### **Objectives**

- Includes any activity that stimulates your young child's senses: touch, smell, taste, movement, balance, sight and hearing. Development of physical abilities such as grasping and gripping, walking, other motor skills.
- Facilitate exploration and naturally encourage children to play, create, investigate and explore.
- Rehabilitation of them and making them independent up to a certain extent to do basic things on their own such as dressing up, eating, playing, doing their own buttons and preferably getting educated at the same time.
- Colourful, made with safe materials with no risk of injury.

  Includes activities that will stimulate your child's senses: touch, smell, taste, movement, sight etc.
- Several children can participate and interact while playing together.



Mood Board

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Toys and games that currently exist and are used commonly

### HOW I PLAN TO PROCEED FURTHER?

I was exploring primary and secondary sources of information to form my design brief. Prof. Krishna Amin Patel helped me by giving me contact and reference of Prabhat Education Foundation which is run by Mr. Keshav Chatterjee. It is a non-profit organisation which for underprivileged children and ones who need special needs; their health, education and upliftment.

Mr. Chatterjee was was open and involved with my work. He gave a lot of insight and ideas along with his field team. This helped me gain better light on their requirements and do's dont's and the children's behaviour and habits in the slums they visit on regular basis to make a difference in their lives and their families' lives.

Then I did some ideations and identified some unconventional material I spotted around could be put to up cycled use.

















Unconventional Materials

1)Tyres, 2) Wooden Crates, 3) Curling rollers, 4) Plastic pipes, 5) Shoe laces, 6) Cardboard tubes, 7) Velcro, 8) Plastic Bottles

Some basic feedback or pointer is was given were that since what I thought to develop would be used by the children in the slums and children who have special needs hence I needed to make sure that I used readily available mor as low cost materials as possible, because it is a non profit organisation and they usually do not have too much money to spend on fancy or expensive toys as a marginalised group of people in the society. They can be focussed upon and made into a great asset for themselves and their families as well.









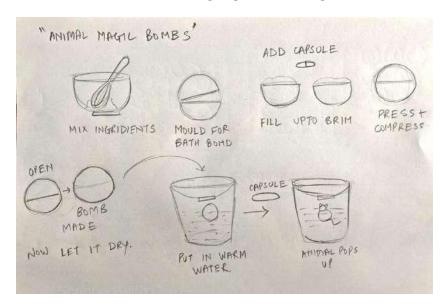
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Visit to the Prabhat Education Foundation's Vatva Centre. I had a session with the team there and gained insight and feedback on my design and model.

## **CONCEPTS PREPARED**

#### Concept 1: Bath Bombs

This concept consisted of bath bombs that would be prepared with easily available home based ingredients such as magnesium salt, baking soda, essential oil (optional), food colour, oil. You mix them according to instructions and dry them in a mould. The twist in this concept is that there will be a surprise capsule in the bomb that shows up when the whole bath bomb has fizzed away and the capsule slowly transforms into an animal or alphabets due to warm water. This adds the experience of anticipation, surprise, sound of fizzing, smell, visual stimulation as well as it had various colours going across making the water colourful.





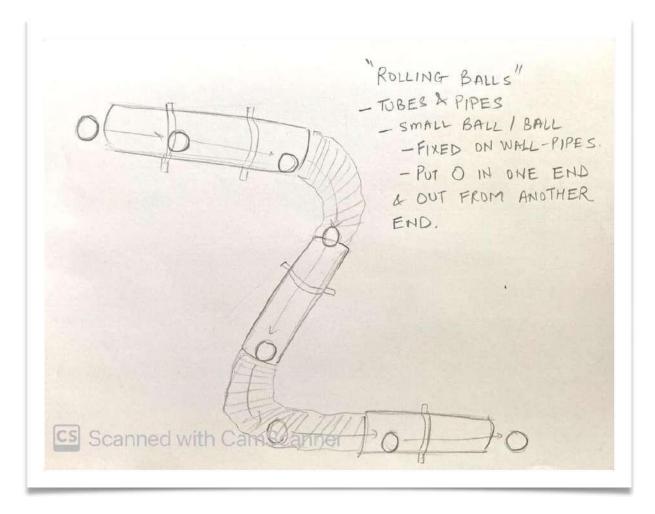


Preparing bath bombs



### Concept 2: Pipe and Ball Game

This concept consisted of old corrugated tubes or old plastic flexible pipes and balls/ marbles. The tubes would be fixed on a vertical surface or the wall itself. Then the child can insert the ball or the marble/s into the top end of the tubes and watch as they come out from the other end.

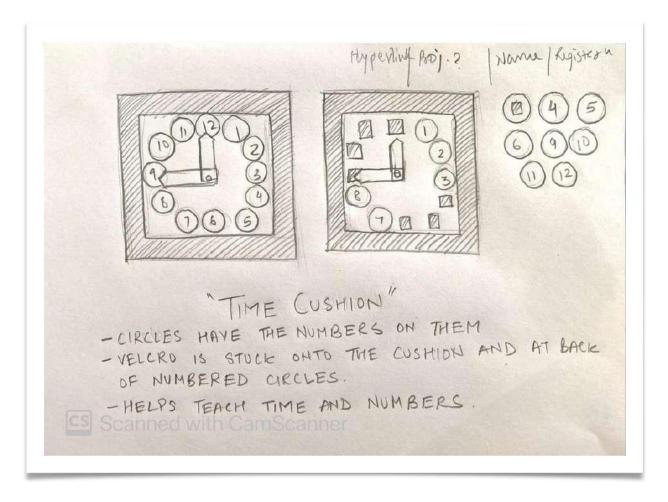


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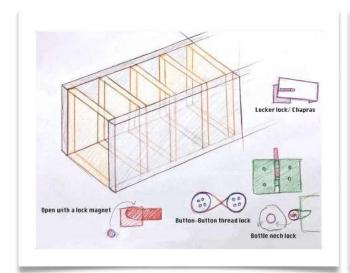
#### Concept 3: Velcro Cushion

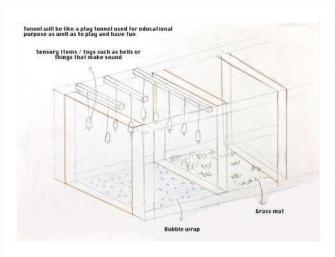
This concept consisted of connection and placing elements in their respective places with the help of velcro.

It could be a cushion with numbers on it which need t be stuck. This can teach them hoe to see time. It could also be a game where they have to arrange organs of a human body or organs on the face.

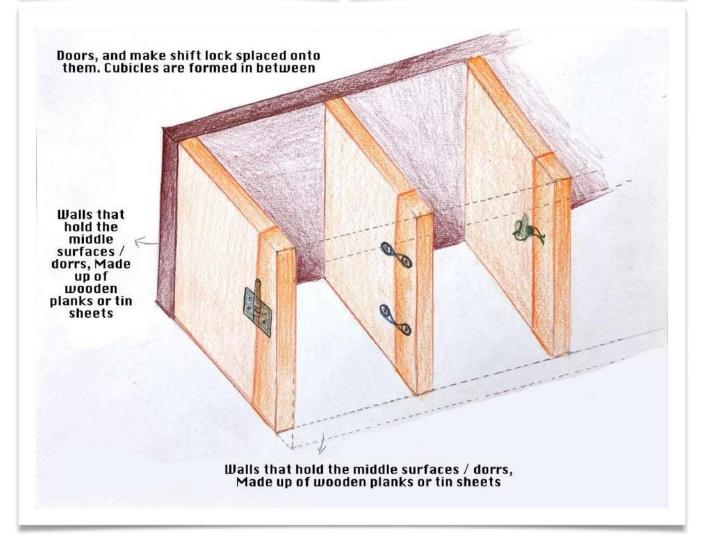


## Final Concept 4 : Sensory Play Tunnel / Play Space Installation

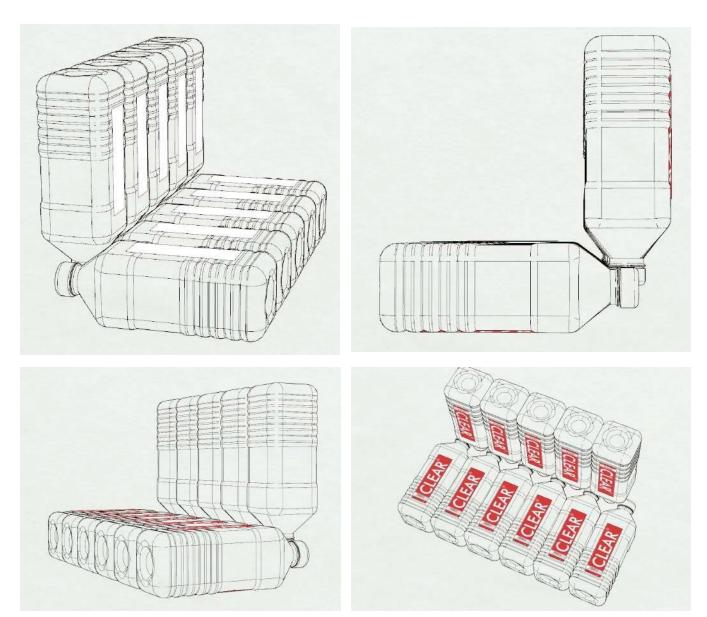




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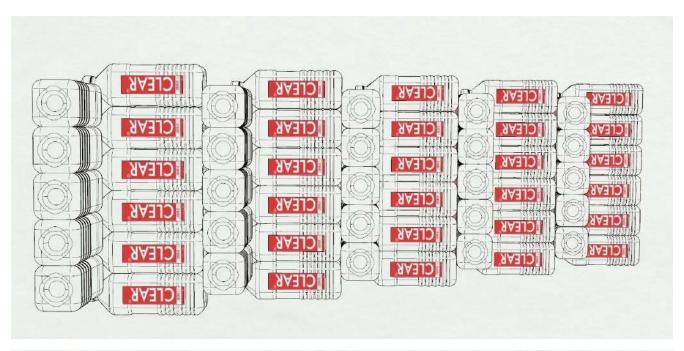


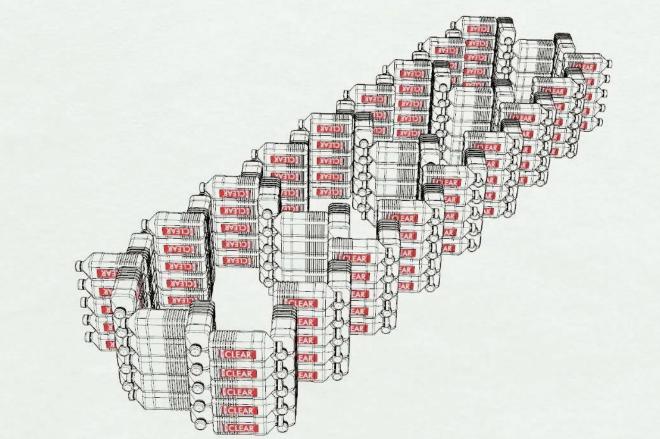
This concept consisted of tunnel like structure with multiple doors / separators, dividing it into various cubicle like structures using readily available, low cost, up cycled material in the slums.



The bottles assemble at 90 degrees, perpendicularly. When pushed at the neck, they get fixed by the rim of the bottleneck. One unit is of 5 bottles and the next would be of 6. They keep alternating in order to tesselate and form a surface that is self standing and strong.

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There are two surfaces placed at the sides, creating two walls, then placing multiple surfaces in between the walls to create separations into the tunnel. They are placed perpendicular.

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The outer walls hold the middle surfaces intact and vice versa.





#### Initial Thoughts to form a Base to the idea

My idea is about building toys / play spaces for underprivileged children who have special needs or have varying disabilities. They cannot spare money to afford toys, privacy, proper education and having some "special needs" just makes it even more difficult. They are poor, living in the slums and having parents who have to work all day and night on daily wages and cannot focus on their children and their development. They are a marginalise section of the society, whether disabled or not. By doing an intervention at an early age and in their areas where they live, we may turn them int assets for the future of the country and be successful in bringing them into the main stream. Eventually improving conditions of their families by being independent and educated.

They must be given good and safe play areas and spaces where they can be taught life skills and play in an environment that consists of things built from tings lying around in their vicinity such as used shoe laces, tin sheets, tyres, ropes, plastic bottles, wooden planks etc. they can be used very efficiently and successfully br upcycled into toys, play spaces and educational tools for these kids.

My idea consists of use of wooden tin/aluminium sheets and wooden planks, plastic bottles to create a walkway or tunnel like path with a series of doors that have different kind of makeshift locks on them. This forms cubicle like space in between. The doors will each have different kind of surface for sensory experience and different types of locks. The order of the doors can be changed. Or an alternative can be making simple walls with holes to go through. This can be created from scrap materials lying around. We can even add small elements like broken Bicycle ring and things that make sounds on the room like cubicles formed in between the doors in the tunnel or even colorectal things like ribbons and bells or things like thin rods lying around or bubble wrap for sounds. Hidden chocolates or plastic alphabets or number cards used by the educators that can be placed as well for rewards. Like find 10 hidden alphabet cards throughout the tunnel and you win.

The normal kids as well as the kids with special needs can play together in this play space setting. According to me, designing toys doesn't always mean mass producible fancy plastic toys, a Toy is a Toy.

#### **DESIGN BRIEF**

Design a playful product/toy which if sensory, interactive, and novel to the children helping them get independent in daily life skills as much as possible. It should be easy to manufacture at home and at economical cost with easily available materials. The children in the slums who do not have much to spare for toys and entertainment can have the best possible play, interactive early childhood learning experience.

Use readily available or as low cost materials as possible, because it is a non profit organisation and they usually do not have too much money to spend on fancy or expensive toys as a marginalised group of people in the society. They can be focussed upon and made into a great asset for themselves and their families as well.

Colourful, made with safe materials with no risk of injury.

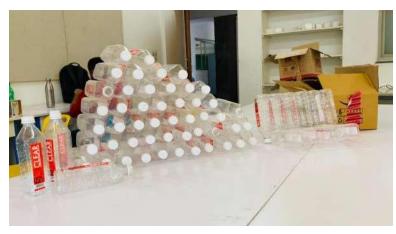
Includes activities that will stimulate your child's senses: touch, smell, taste, movement, sight etc.

Several children can participate in this play.

## Building plan of the final concept

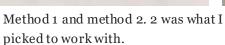
Decided to plan and make them with plastic bottles of square shape, of 500 ml. I started by experimenting with a small number of bottles that I was able to collect from K block Canteen at Nirma University.

I tried various methods to join them and finalised one a method that was strong, and easy to connect without any adhesive.



Collection of bottles for several days from all overthe campus.









1

#### How does it help?

It helps and fulfils most requirements,

- Transparency
- · No risk of injuries
- · Easily replaceable if damaged
- Low cost material
- Up-cycling and helping environment
- · Can be assembled by anyone, easy disassembly

- Can be decorated by children themselves and form a connect to the installation
- Filled with different sensory things and emptied out easily
- Light weight
- Easily unassembled and required action can be taken, in case if emergency or if some child is having some panicked or distressed state

I made a Model of 1x2 feet of my basic concept and took it to Prabhat and gained insight and made changes accordingly to fulfil the above requirements.





Model no 1 I prepared before the meeting at Prabhat

Includes doors and Two wall like surfaces to hold them together

## Initial sketches of idea

# HOW WOULD THE BOTTLE STRUCTURE LOOK LIKE?

Write White Paper Title Here

## **EPILOGUE AND LEARNINGS**

- For my unconventional material I used plastic bottles to completely build the play space, in a very modular and feasible method. It is like placing bricks, they tessellate and form the surfaces / walls.
- Just by collection of bottles for 3 days made me realise that they are throw everyday in huge quantities and may be not even recycled and add to the wastelands that are growing day by day.
- Putting them to good use, gives it a second life.
- They are transparent, lightweight, easily replaceable in case of damage and Low cost material.
- We can also use this building method in an alternative purpose, such as building shelters/houses.
- Transparency and easy building allows the special need children of the foundation to play in it with least risk of injury, feeling of being closed off and still have an interesting space to play, that they may even build on their own.
- I have also come to realise that there is also a section of the society we live in, which is not as privileged as us. We do not live in a world where they are properly acknowledged or given equal efforts. Doing something for development does not always mean manufacturing things or

Mental and physical Special Needs disabilities Focussed Special education Attention and Educators Slums Sensory toys Physiotherapy Therapy Recreational Play space Early Intervention Rehabilitation into & Acceptance the mainstream Low Cost Toys Recognition Made into assets Self made equipments Different kinds of play

Mind map

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goods that are always for profit and getting credit.

## LINKS AND REFERENCES

Fun & Function | Sensory Toys & Products for Kids funandfunction.com

<u>function of sensory toys for special needs hildren - Google Search</u> www.google.com

<u>Play Therapy: What Is It, How It Works, and Techniques</u> www.healthline.com

play space appropriate for play therapy - Google Search www.google.com

Recreational Therapy: Definition, Benefits, Activities www.healthline.com

<u>Play Therapy: What Is It, How It Works, and Techniques</u> www.healthline.com

https://www.google.com/search?

client=safari&hl=en&q=bath+bomb+recipe&sa=X&ved=2ahUKEwirmo3ntbbuAhWp4H MBHSmqD5oQ1QIoAHoECBMQAQ&biw=885&bih=760

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client=safari&bih=760&biw=885&hl=en&ei=LmAOYOoXo52aB-

DIv\_gC&q=are+bath+bombs+expensive+to+make&oq=bath+bombs+exensve&gs\_lcp =CgZwc3ktYWIQAxgCMgcIABDJAxANMggIABANEAUQHjIICAAQDRAFEB4yCAgAE AgQDRAeMggIABAIEA0QHjoECAAQRzoECAAQQzoCCAA6BQgAEMkDOgUIABCR AjoICC4QxwEQrwE6DgguEMcBEK8BEMkDEJMCOgYIABAWEB46BwghEAoQoAE6 BAghEBU6CQgAEMkDEBYQHICPtAFYpckBYLXiAWgCcAJ4AIABsQKIAdoOkgEHM C43LjluMZgBAKABAaoBB2d3cy13aXrIAQfAAQE&sclient=psy-ab

https://www.google.com/search?

q=sensory+toys&tbm=isch&ved=2ahUKEwi3zteD2bTuAhWgn0sFHS8DDEAQ2cCegQIABAA&oq=sensory+toys&gs\_lcp=CgNpbWcQAzICCAAyAggAMgIIADICCAAy BAgAEEMyAggAMgIIADICCAAyAggAMgIIADoFCAAQsQM6CAgAELEDEIMBOgoIAB CxAxCDARBDULuHAVj2mgFgs5wBaABwAHgAgAHIAYgB6w-

SAQYwLjEwLjGYAQCgAQGqAQtnd3Mtd2l6LWltZ7ABAMABAQ&sclient=img&ei=y3g NYPe8OaC\_rtoPr4awgAQ&bih=785&biw=1440&client=safari

#### https://www.google.com/search?

<u>q=8-12+autistic+children+toys&tbm=isch&ved=2ahUKEwjxmOzm2LTuAhUOVysKHW</u> yNBEYQ2-

<u>cCegQIABAA&oq=8-12+autistic+children+toys&gs\_lcp=CgNpbWcQAzoHCAAQsQM</u> <u>QQzoECAAQQzoCCAA6BQgAELEDOggIABCxAxCDAToECAAQHjoGCAAQCBAeUI</u> <u>v5AljAzgNg8M8DaAFwAHgCgAHcAogB9jSSAQgwLjMyLjMuMZgBAKABAaoBC2d3c</u> <u>y13aXotaW1nsAEAwAEB&sclient=img&ei=j3gNYLGVHl6urQHsmpKwBA&bih=785&bi</u> w=1440&client=safari

#### https://www.google.com/search?

<u>q=sensory+toys+for+autism+&tbm=isch&ved=2ahUKEwjJ8Li717TuAhULFHIKHRj-BooQ2-</u>

cCegQIABAA&oq=sensory+toys+for+autism+&gs\_lcp=CgNpbWcQAzIGCAAQBxAeMgYIABAHEB4yBggAEAcQHjIGCAAQBxAeMgYIABAHEB4yBggAEAcQHjIGCAAQBxAeMgYIABAHEB4yBggAEAcQHjIGCAAQBxAeMgYIABAHEB4yCAgAEAcQBRAeMggIABAHEAUQHjoCCAA6BAgAEB46BggAEAUQHlCCyg5Y1ugOYILqDmgAcAB4AIABwgGIAZ4LkgEDMC44mAEAoAEBqgELZ3dzLXdpei1pbWfAAQE&sclient=img&ei=KHcNYMk8i6jIA5j8m9AI&bih=785&biw=1440&client=safari

#### https://www.google.com/search?

q=toys+for+special+needs+children&client=safari&rls=en&source=lnms&tbm=isch&sa =X&ved=2ahUKEwiY\_PuP1rTuAhWZdn0KHdutDkYQ\_AUoAnoECAwQBA&biw=1440 &bih=785#imgrc=icj4F9B\_RWPlwM

https://miro.com/app/board/o9J\_IYSVyuE=/

Prabhat Education Foundation Videos and write-ups/ Articles. And their staff and centre.