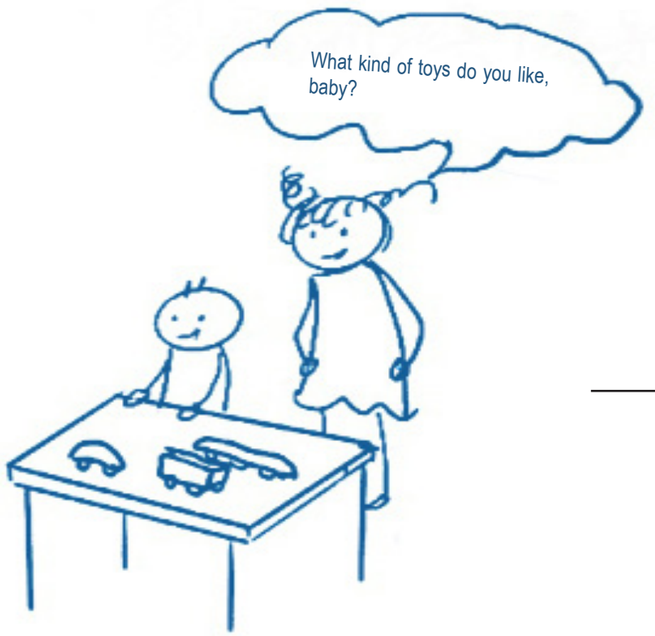
Wonder Grow Bundle

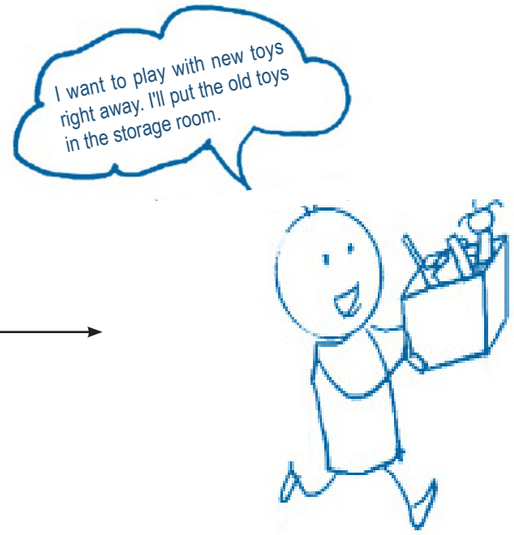
Idea generation-A toy's life

-Background-

Figure 1

Every child will have many toys in his life, so what will the life of toys be like?

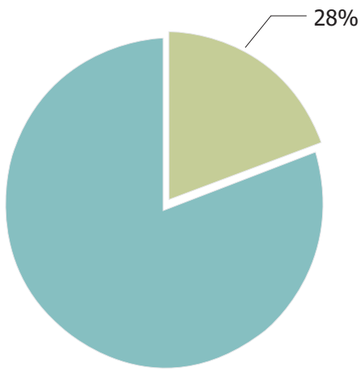




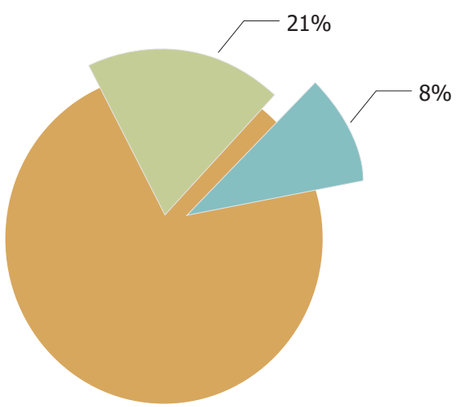
Storage Room

Do children still open the storage room and play with old toys?

Data analysis of children discarding toys



From Buzz Lightyear to Mr Potato Head, the British Heart Foundation's survey found that **28%** of UK parents admitted to **discarding toys in perfect working order.**



Over one in five (**21%**) parents admitted their **children lost interest in a toy** in the first 11 hours of play, while a further **8 %** said their offspring **got bored** of a toy in less than 60 minutes.

Figure 2.1

Lucia mentioned that unwanted toys often end up in landfills, which is not good for the environment at all considering how many toys are made of plastic, and that buying toys you don't play with is a huge waste of time, money and energy.

Figure 2.2

The UK website WHIRLI lists some data as follows

1. **69% of parents say that their children have too many toys**.

2. Parents estimate that they spend an average of £250 per child throughout the year on toys, and children receive over 30 toys each year. On average, parents will spend up to £25 on a toy as a gift for someone else's child.

3. 77% of parents say that toys are cluttering up their homes. 1 in 7 parents feel this toy clutter is out of control.

4. In total, **61% of children's toys are un-played with**. That's 27 toys going neglected at any given time.

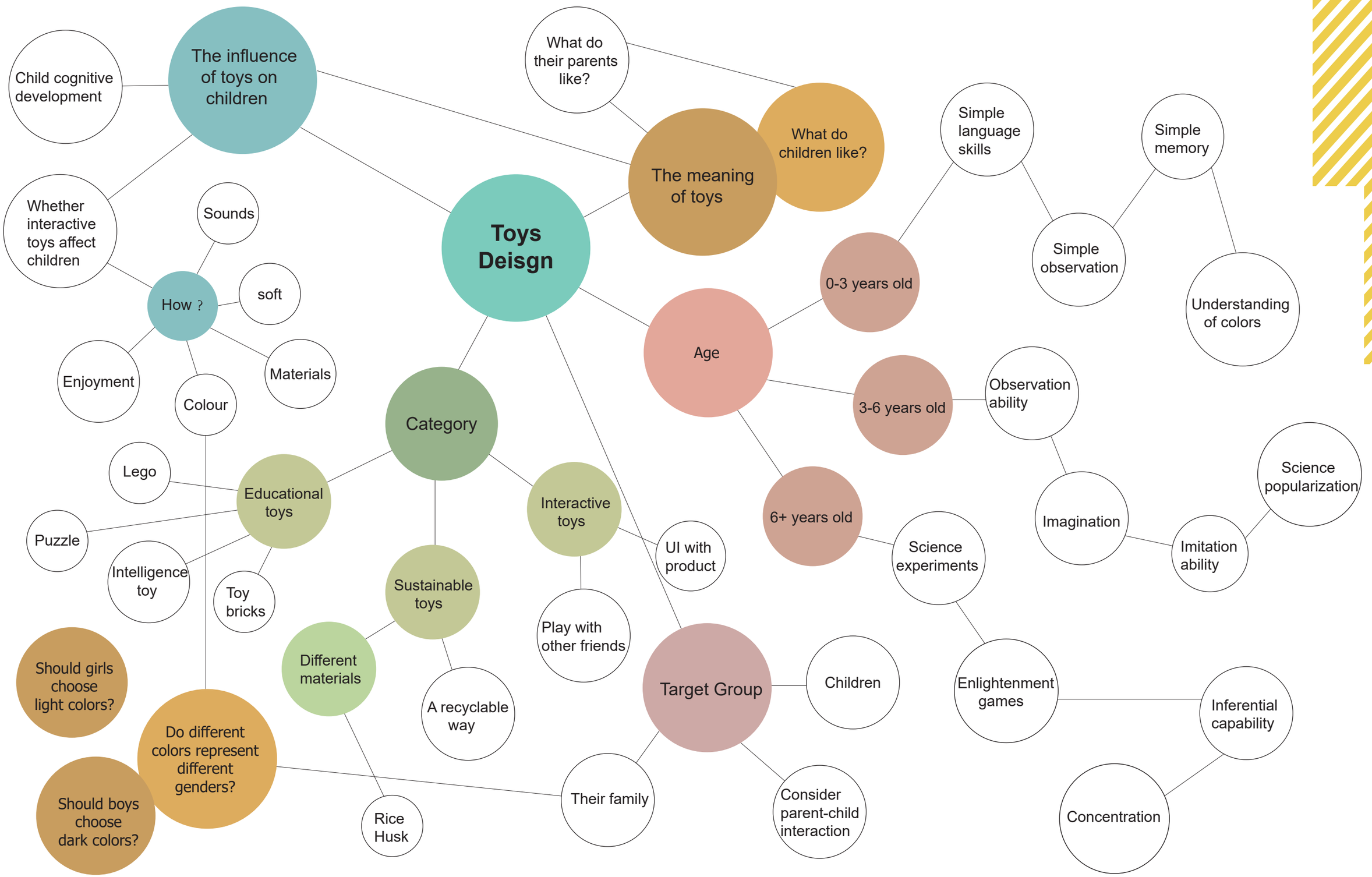
5. 56% of parents think high street prices for toys are too high.

6. 52% feel packaging for toys is excessive.So what can we do to reduce.

How do we design for children or their parents?

https://www.mygreenpod.com/articles/toys-in-landfill/ [Accessed 27 Feb. 2024]
https://whirli.com/blog/10-stats-about-toy-neglect-and-how-to-reduce-waste-in-2022 [Accessed 3 Mar. 2024]

Brainstorm


Toys Deisgn
The influence of toys on children
Child cognitive development
Whether interactive toys affect children
The meaning of toys
What do their parents like?
What do children like?
How ?
Sounds
soft
Enjoyment
Colour
Materials
Category
Educational toys
Lego
Puzzle
Intelligence toy
Toy bricks
Sustainable toys
Different materials
Rice Husk
A recyclable way
Interactive toys
UI with product
Play with other friends
Should girls choose light colors?
Should boys choose dark colors?
Do different colors represent different genders?
Target Group
Children
Their family
Consider parent-child interaction
Age
0-3 years old
Simple language skills
Simple observation
Simple memory
Understanding of colors
3-6 years old
Observation ability
Imagination
Imitation ability
Science popularization
6+ years old
Science experiments
Enlightenment games
Inferential capability
Concentration

Toy needs of children of different ages

Figure 6

Toys for young infants—birth through 6 months
Babies like to look at people—following them with their eyes. Typically, they prefer faces and bright colors.

Toys for older infants—7 to 12 months
Older babies are movers—typically they go from rolling over and sitting, to scooting, bouncing, creeping, pulling themselves up, and standing. They understand their own names and other common words, can identify body parts, find hidden objects, and put things in and out of containers.

Toys for 1-year-olds
One-year-olds are on the go! Typically they can walk steadily and even climb stairs. They enjoy stories, say their first words, and can play next to other children (but not yet with!). They like to experiment—but need adults to keep them safe.

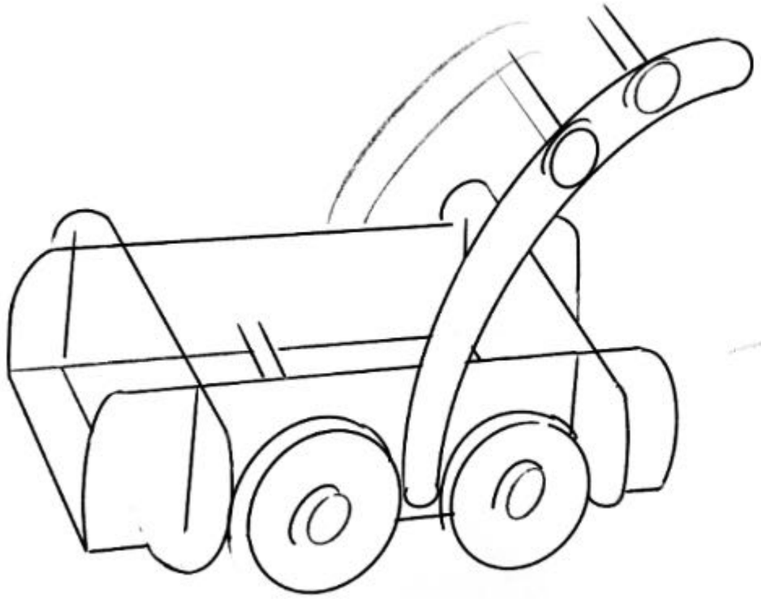
Toys for 2-year-olds (toddlers)
Toddlers are rapidly learning language and have some sense of danger. Nevertheless they do a lot of physical “testing”: jumping from heights, climbing, hanging by their arms, rolling, and rough-and-tumble play. They have good control of their hands and fingers and like to do things with small objects.

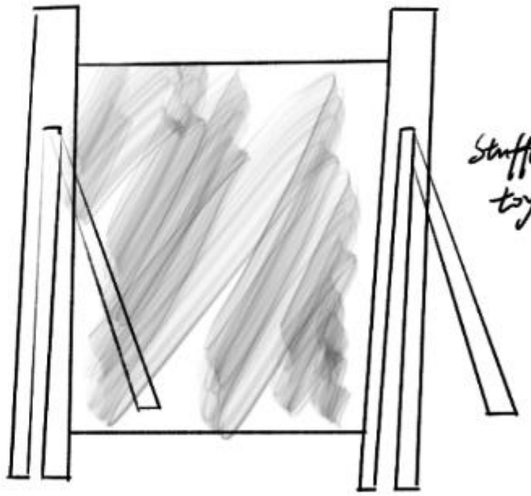
Toys for 3- to 6-year-olds (preschoolers and kindergarteners)
Preschoolers and kindergartners have longer attention spans than toddlers. Typically they talk a lot and ask a lot of questions. They like to experiment with things and with their still-emerging physical skills. They like to play with friends—and don’t like to lose! They can take turns—and sharing one toy by two or more children is often possible for older preschoolers and kindergarteners.

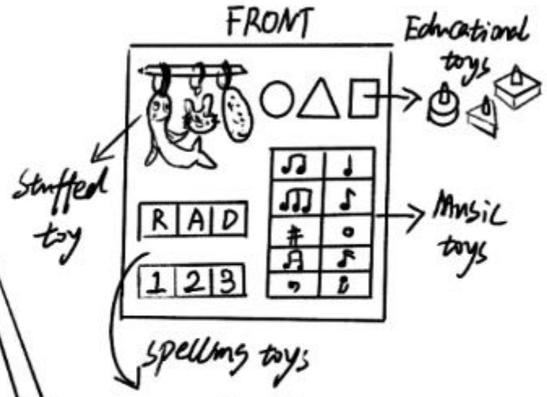
Age	What can they do?	Suitable toy type
Birth through 6 months	Reach for, Hold, Suck on, Shake Make noise with	Rattles, large rings, squeeze toys, teething toys, soft dolls, textured balls, and board books
	Listen to	Books with nursery rhymes and poems, and recordings of lullabies and simple songs
	Look at	Pictures of faces hung so baby can see them and unbreakable mirrors
7 to 12 months	Use their large muscles with	large balls, push and pull toys, and low, soft things to crawl over
	Drop and take out	Baby dolls, puppets, plastic and wood vehicles with wheels, and water toys
	Build with	Plastic bowls, large beads, balls, and nesting toys
	Play pretend with	Large soft blocks and wooden cubes
1-year-olds	Read	Books with simple illustrations or photographs, simple stories, and pictures
	Role play	Toy phones, dolls and doll beds, baby carriages and strollers, dress-up accessories
	Create with	Wide non-toxic, washable markers, crayons, and large paper
	Build with	Cardboard and wood blocks (can be smaller than those used by infants—2 to 4 inches)
	Use their large and small muscles	Puzzles, large pegboards, toys with parts that do things (dials, switches, knobs, lids), and large and small balls
2-year-olds (toddlers)	Solving problems	Wood puzzles (with 4 to 12 pieces), blocks that snap together, objects to sort
	Pretending and building	Blocks, smaller (and sturdy) transportation toys, construction sets, child-sized furniture
	Create with	Large non-toxic, washable crayons and markers, large paint brushes and fingerpaint
	Use their large and small muscles	Large and small balls for kicking and throwing, ride-on equipment, tunnels, low climbers with soft material underneath, and pounding and hammering toys
3- to 6-year-olds (preschoolers and kindergarteners)	Solving problems	Puzzles (with 12 to 20+ pieces), blocks that snap together, collections
	Pretending and building	Many blocks for building complex structures, transportation toys, construction sets
	Create with	large and small crayons and markers, large and small paintbrushes and fingerpaint, large and small paper for drawing and painting
	Use their large and small muscles	large and small balls for kicking and throwing/ catching, ride-on equipment including tricycles, tunnels

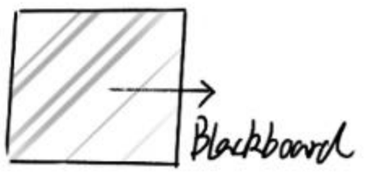
https://www.naeyc.org/resources/topics/play/toys [Accessed 6 Mar. 2024]

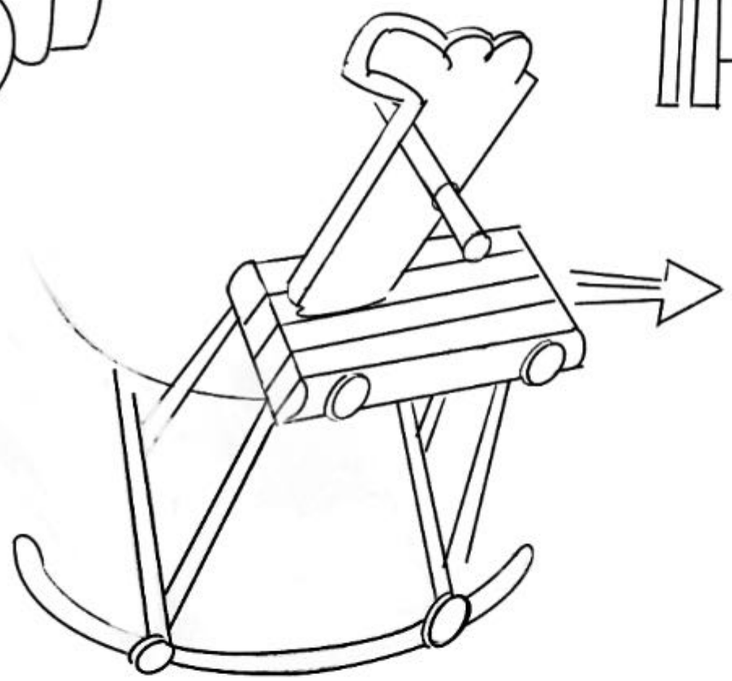
Further detailed sketches

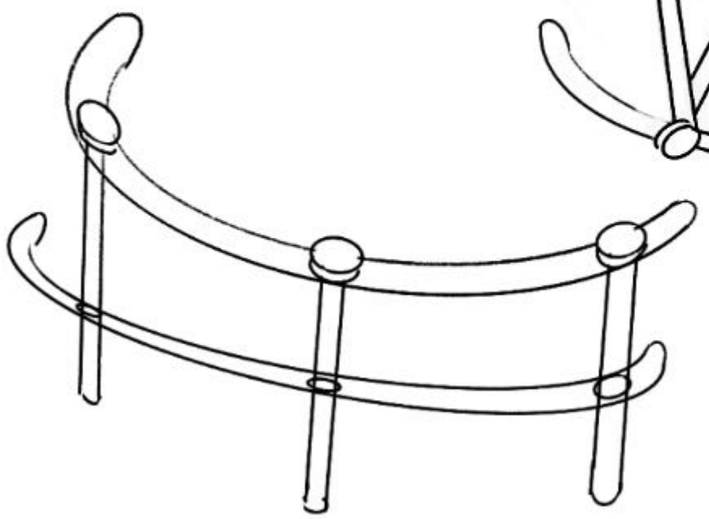


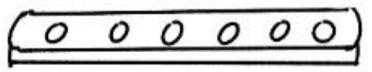


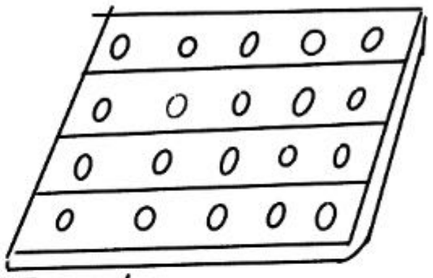




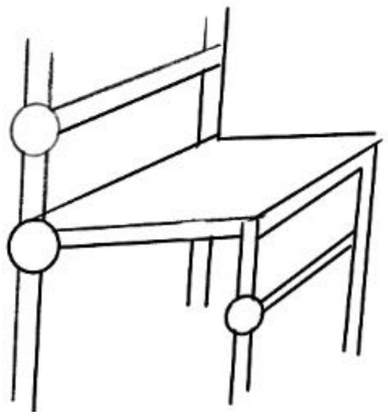








Board game



Working process-Kids Wooden Rocking Horse

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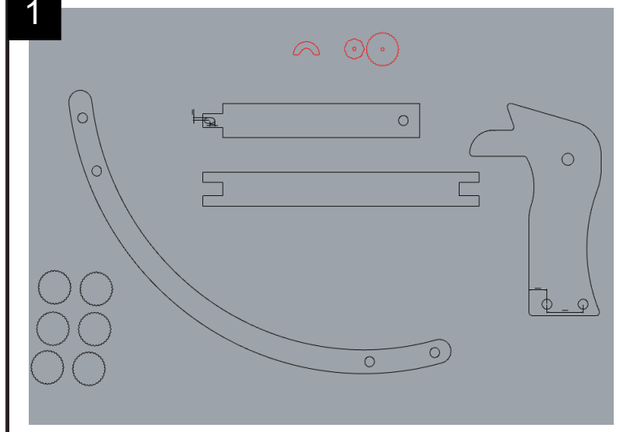

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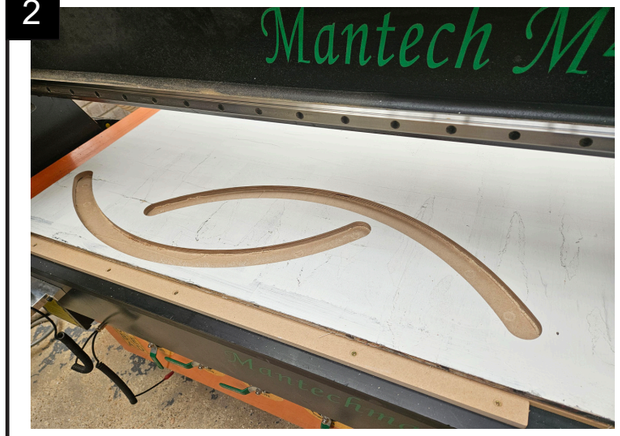

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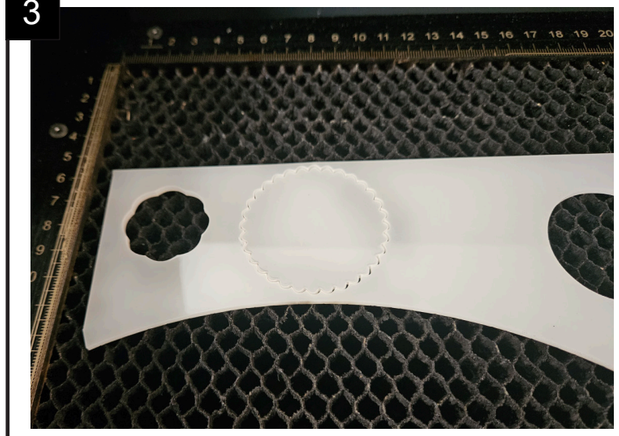

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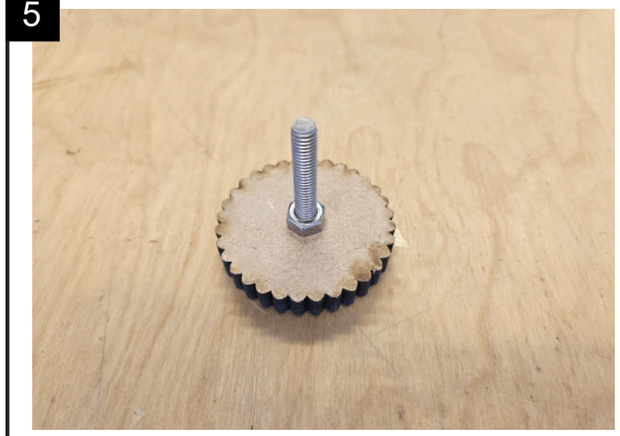

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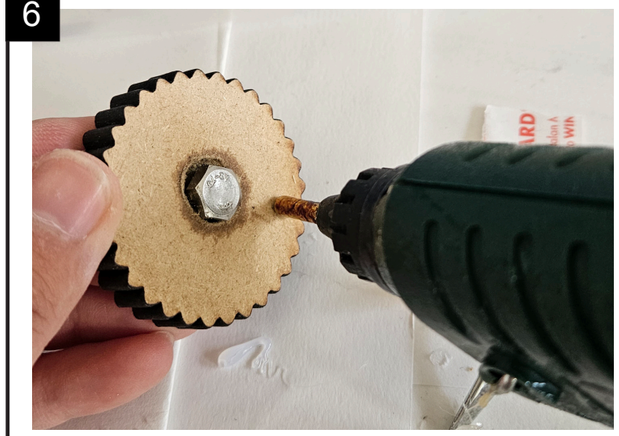

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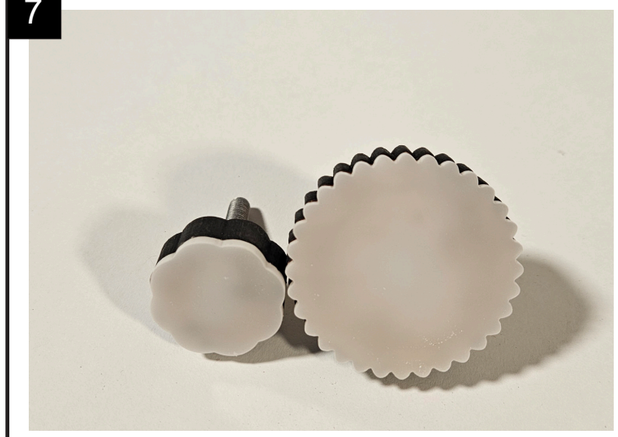

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1 AUTOCAD drawing

2 CNC machine cutting

3 Laser cutting knob - using two different materials (acrylic, density board)

4 Hole the knob

5 Attach M6 screws

6 Use hot melt glue to stick the acrylic and density board together. The acrylic will look better on the outside

7 Eight large knobs and four small knobs all combined

8 Cut into equal parts and punch holes for each of them

9 Test whether the stick can be combined with the knob. During the test, it was found that once the hole was drilled very small, when the M6 screw was rotated into the stick, the stick would be cracked, but if the hole was drilled too large, the screw could not be fixed.
After several rounds of testing, it was found that filling the holes with glue could increase the friction of the sticks, thus achieving the effect of rotation fixation.

Working process-Kids Wooden Rocking Horse

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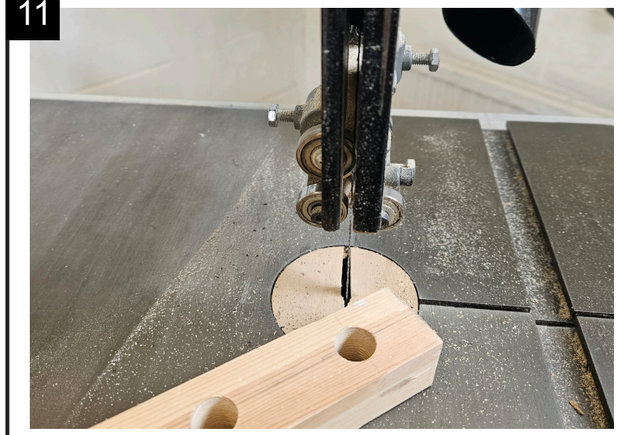

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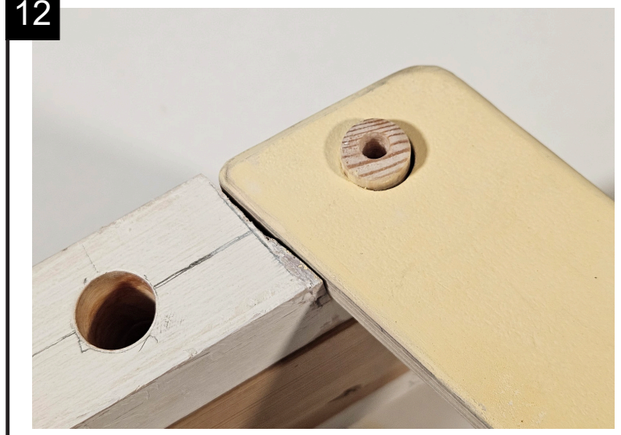

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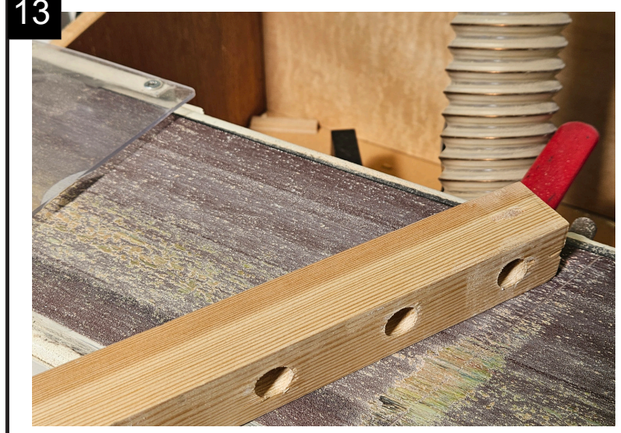

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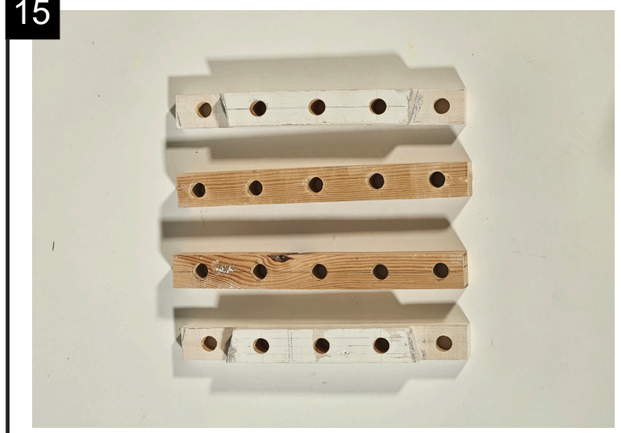

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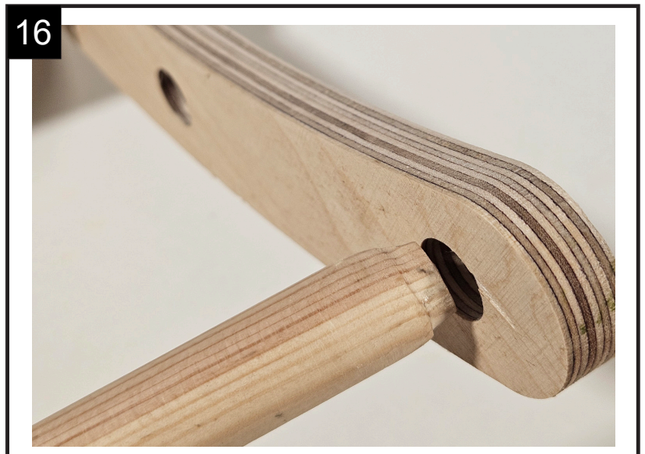

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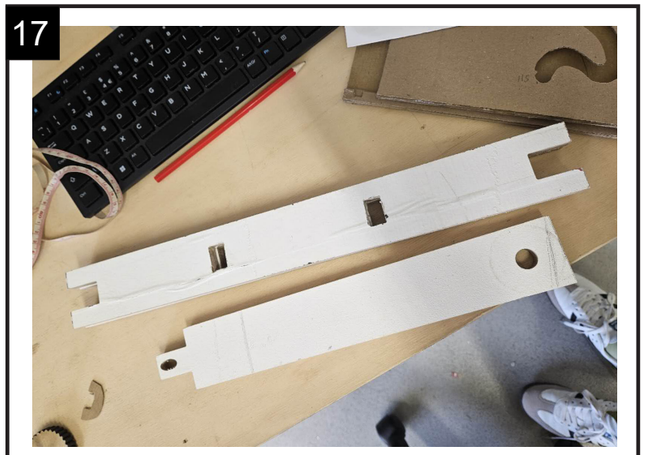

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10 Cut the wood strips to the appropriate size and select the appropriate drill bit to make the holes

11 Cut off the excess wood to ensure that the rocking horse does not rock back and forth

12 Put the upper part of the rocking horse together and test whether it shakes

13 Polishing the rocking horse seat

14 Color the two blocks next to it so they can be more clearly marked

15 The two middle pieces are in natural wood color, which makes it easier to find their positions

16 Polish the joints of the sticks to make them easier to join and less likely to separate

17 Drill holes in the two horizontal boards

18 Determine where to cut

Working process-Kids Wooden Rocking Horse

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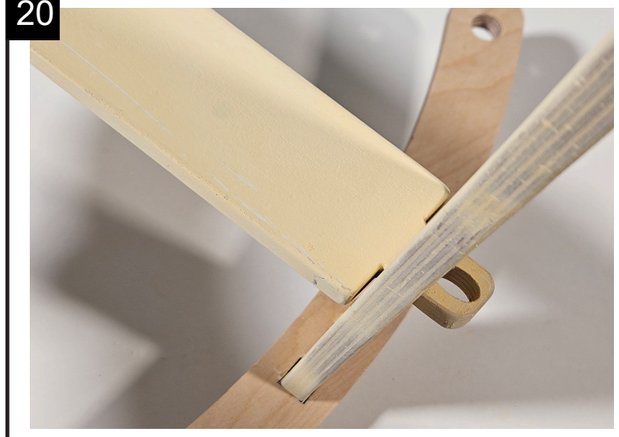

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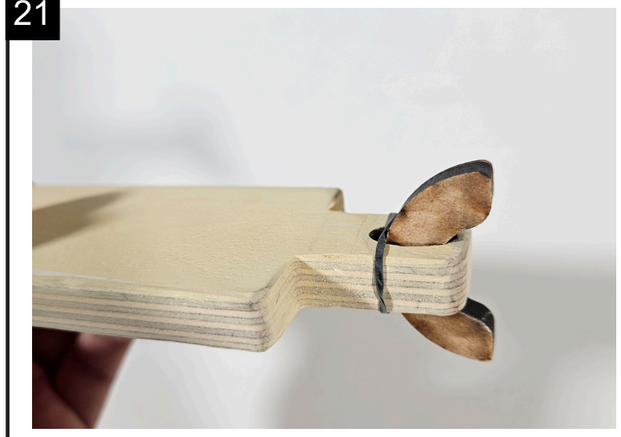

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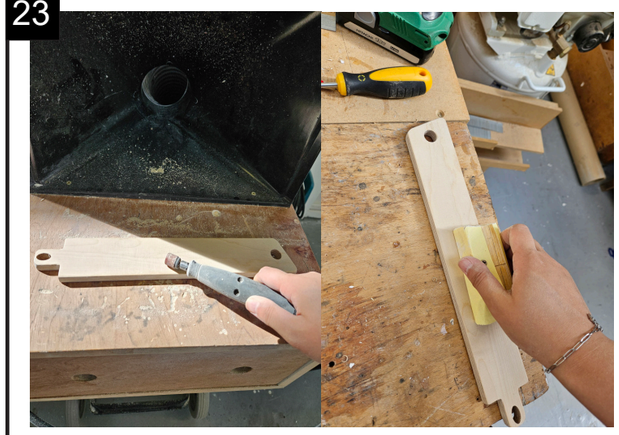

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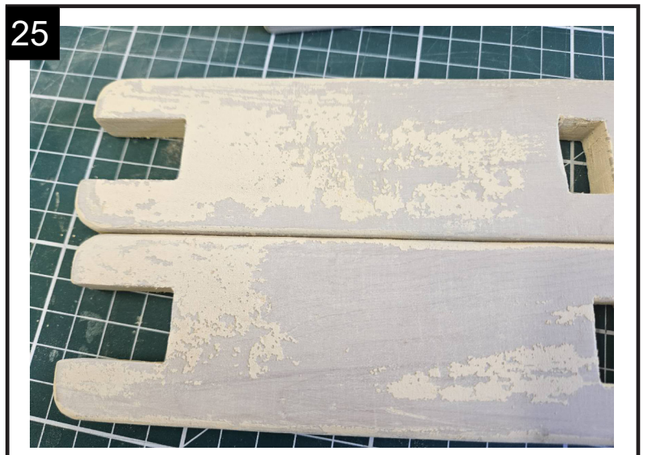

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19 Determine the location of the insert and drill holes

20 Try to assemble

21 Three arcs of different sizes were laser cut to make the buckles at the bottom of the rocking horse. After testing, it was found that this size was more suitable.
However, since the side is easy to slide out, it needs to be fixed with a rubber band

22 Try to assemble all the parts

23 Trim and sand all parts

24 I was thinking about which one is better, spray paint or paint, so I bought both to try

25 After trying to paint, there are several possible reasons (painting problems, grinding problems, wood itself problems)

26 After re-sanding and cleaning the surface, I sprayed the paint again. This time the effect is better than before

Rocking horse detail and final effect

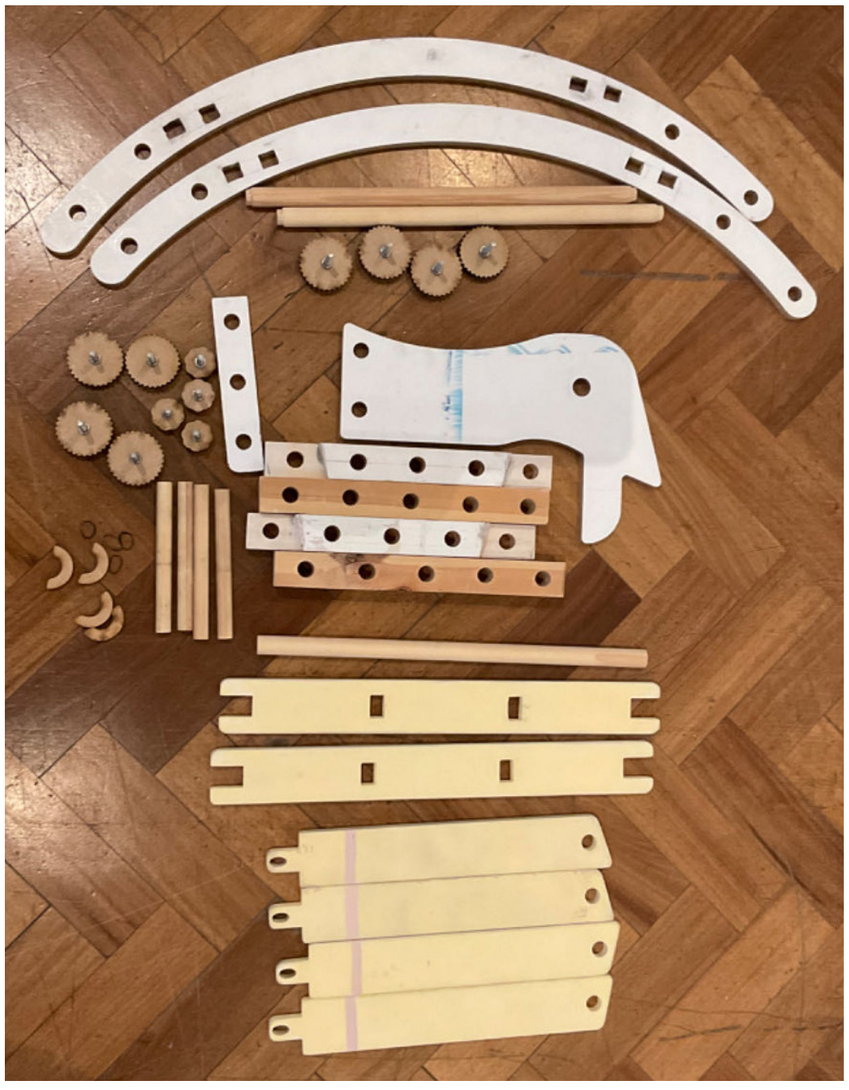
Some details

Final effect

Scan the code or click on the link to view the assembly instruction

https://youtu.be/LYIp_-P6s84?si=kICdYjGxEfRuPBB7

Final model-Kids Wooden Rocking Horse



Working process-Baby Walker

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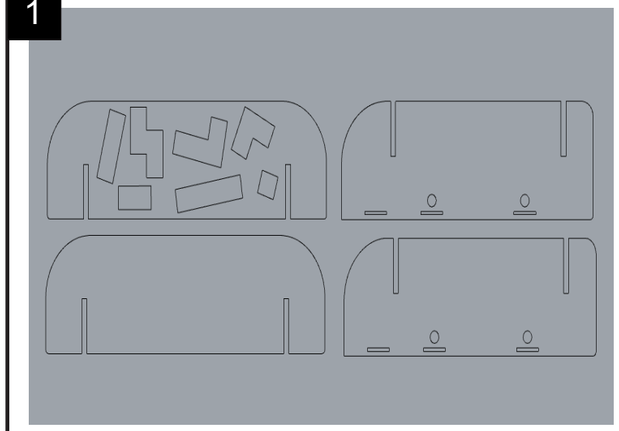

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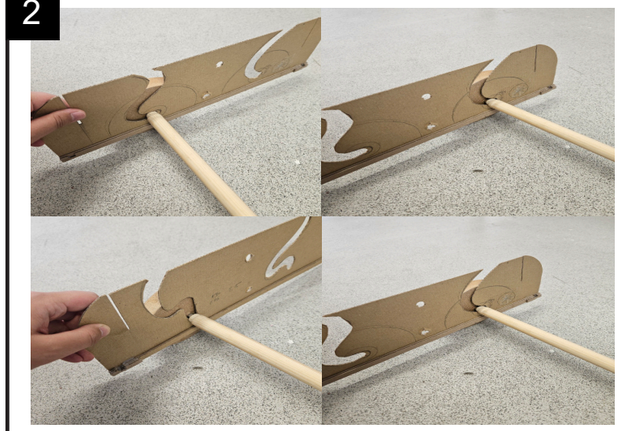

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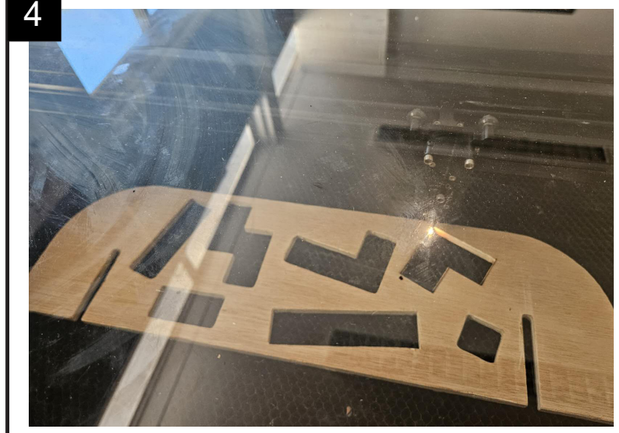

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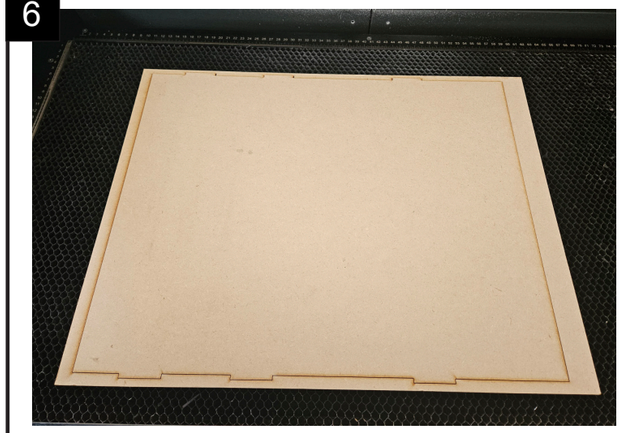

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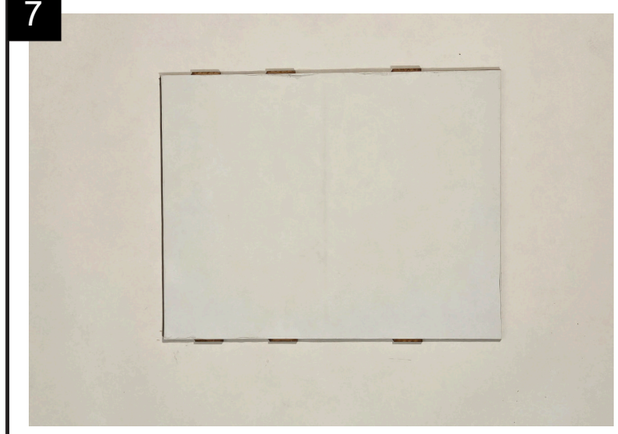

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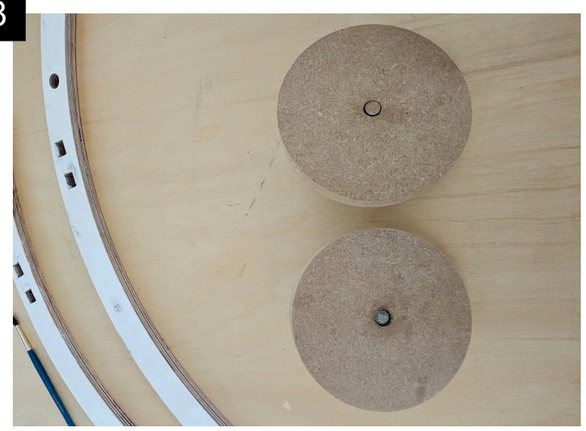

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1 AUTOCAD drawing

2 I thought about how to put the wheels more appropriately, and finally decided to just punch holes as per the original plan, which would be the most convenient and also serve as support

3 CNC cut wood board and then polished

4 Laser cutting some details

5 Laser cutting can be done according to the size of the drawing. Since the CNC drill bit is too thick to cut some details, laser cutting is used for secondary processing to achieve the final goal

6 Laser cutting magnetic whiteboard

7 Attach the laser cut board to the magnetic whiteboard

8 After the CNC cutting wheel is installed with M6 screws, the circle after laser cutting is used to fill in order to be beautiful

9 Combine the wheel with the stick and the board on the side

Working process-Baby Walker

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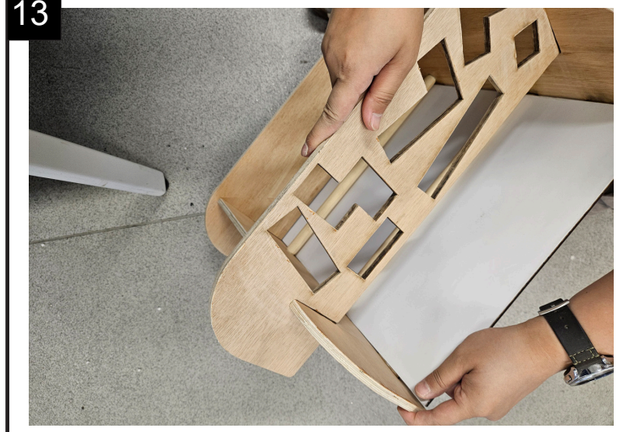

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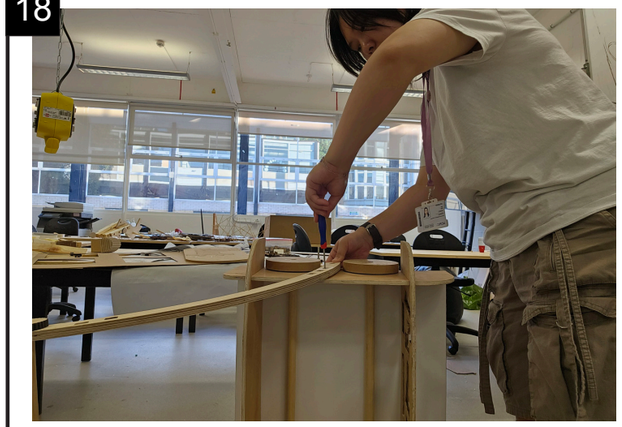


10 Combine the wheel with the stick and the planks on the side

11 Insert two sticks into the two wheels and tighten them

12 Connect the magnetic whiteboard and the two side boards

13 Insert the remaining two boards, with the one with the graphics in front

14 Tighten the wheel

15 Four boards splicing effect

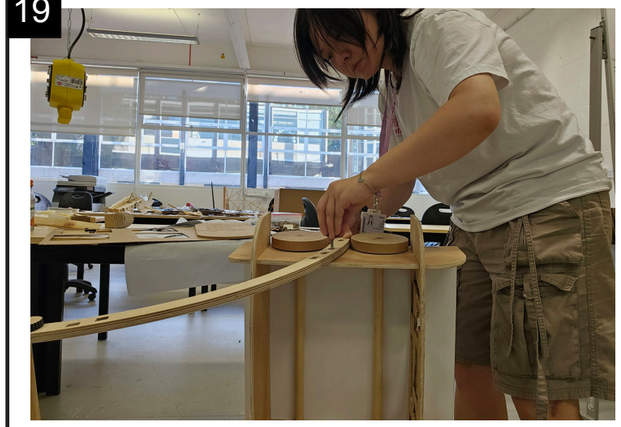
16 After splicing, as shown in the figure

17 Connect the four knobs with the two sticks and two curved wooden boards

18 Find the location where the hole needs to be drilled and drill it

Working process-Baby Walker

19



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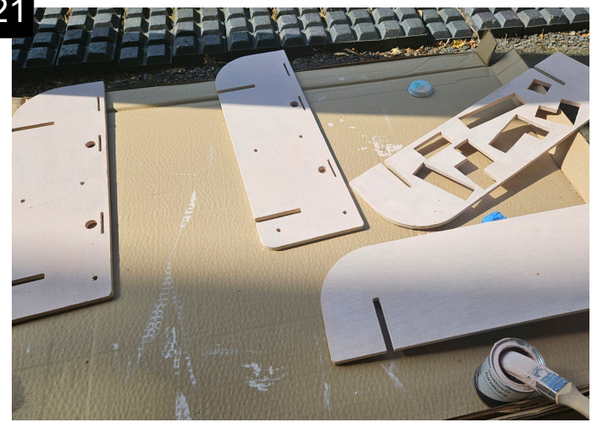


22

23

24

25

26

19 Check whether the punched hole can be inserted into the knob

20 Paint the four wooden boards with wood paint

21 Apply two coats on each of the four boards and dry them for more than 24 hours

22 Insert the punched wooden board into two knobs, one large and one small. The small knob is between the two wheels

23 After installing the knob, it looks like the picture below

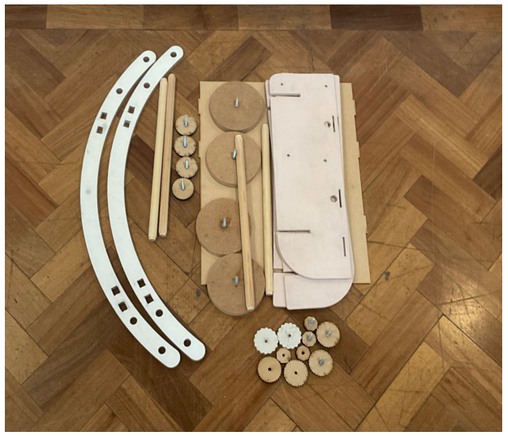
24 The position after installing the wheel and knob is shown in the figure

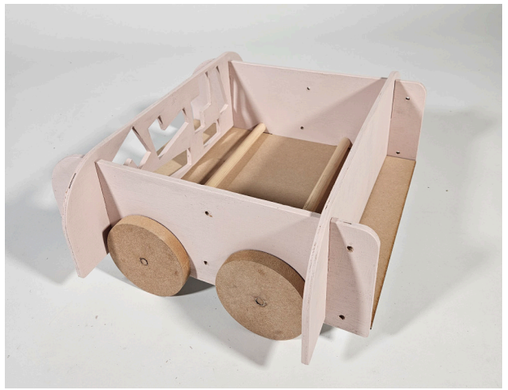
25 Test whether it can be pushed smoothly and whether the wheels will slide out when pushed

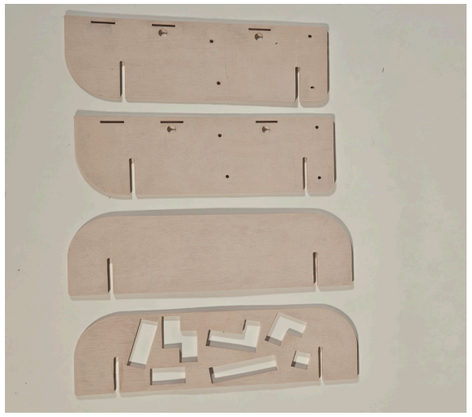
26 The final product is shown in the figure

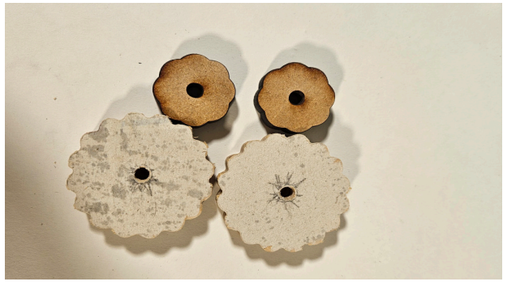
Baby walker detail and final effect

Some details







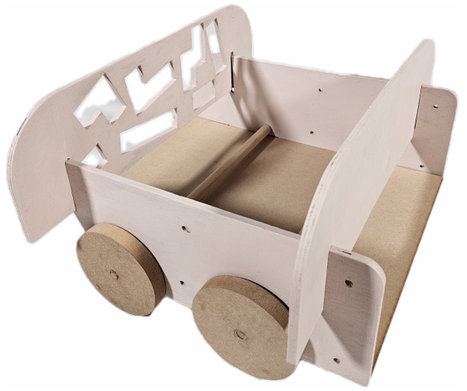


Final effect

Scan the code or click on the link to view the assembly instruction

https://youtu.be/uOB9L8__yDE?feature=shared

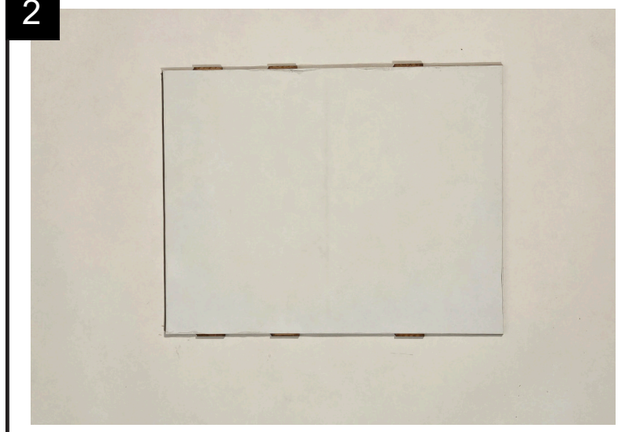
Final model-Baby Walker



Working process-3 in 1 Kids Art Easel

1

2



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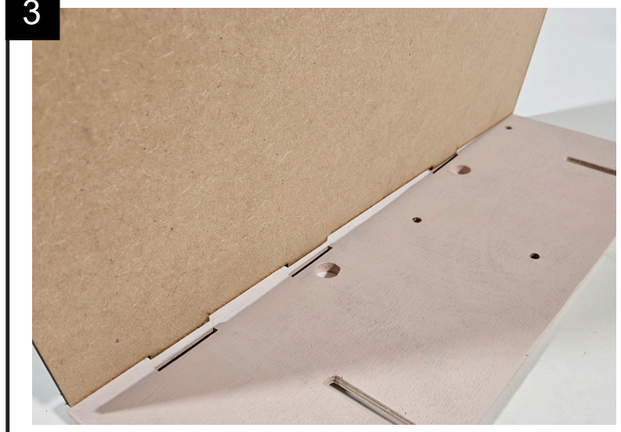

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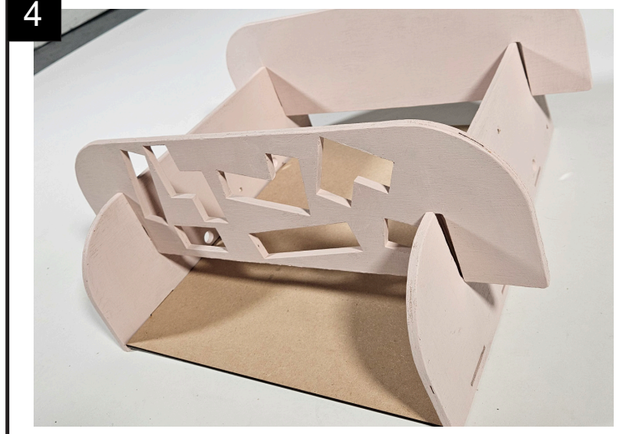

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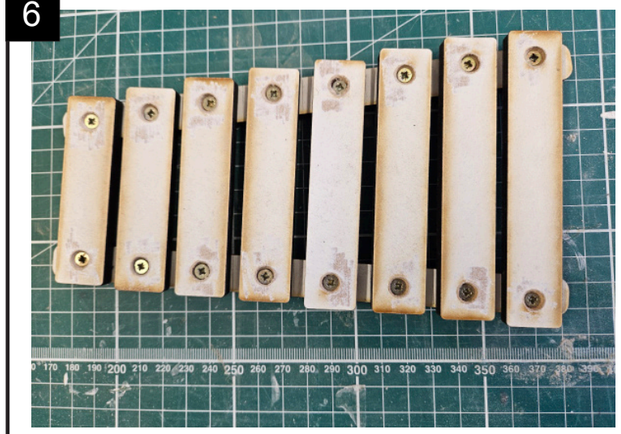

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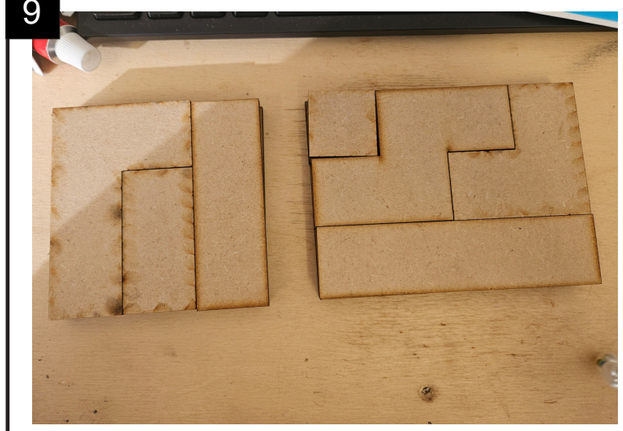
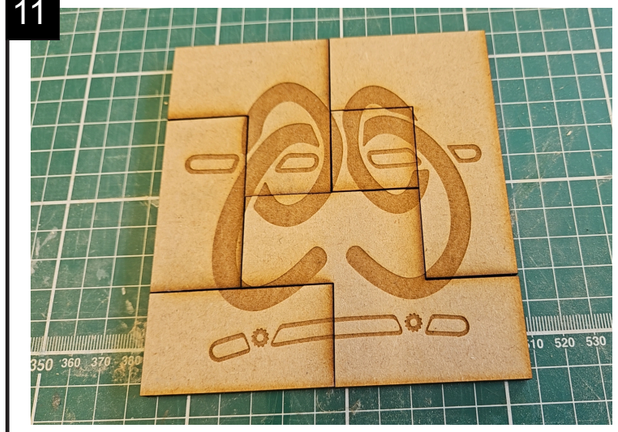


1. Take out the four cut wooden boards
2. Prepare the magnetic whiteboard that has been cut
3. Put the two pieces together
4. Put the four boards together
5. Try to use ceramic to make music percussion toys, considering the nature of ceramic is not resistant to falling, it may cause secondary damage to children, so change the material
6. Try using laser cut wood blocks to make music percussion toys and fasten them with screws
7. Color the music percussion toy
8. Laser cuts out Scrabble cards and sticks magnetic stickers on the back
9. Laser cut out the puzzle

Working process-3 in 1 Kids Art Easel

10

11



10 Paint the cut model with different brightness, which helps children learn basic color knowledge

11 Laser cut my own LOGO as a puzzle

12 Place scrabble toys and puzzles on a magnetic whiteboard

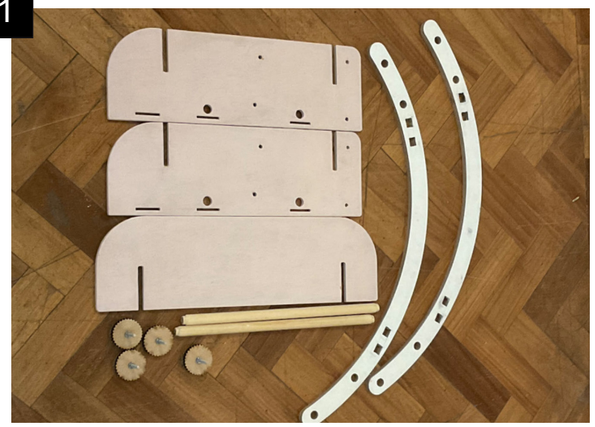
12

click on the link to view the assembly instruction

https://youtu.be/vqQmCsLbbMk?si=su5MLPM1dvFqb1Mr

Working process-Baby play gym

1



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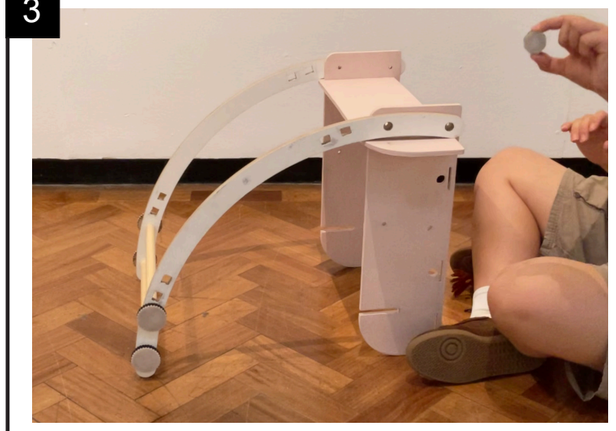
3



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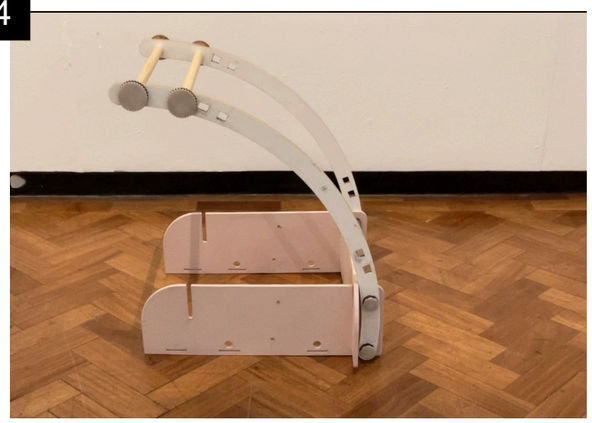

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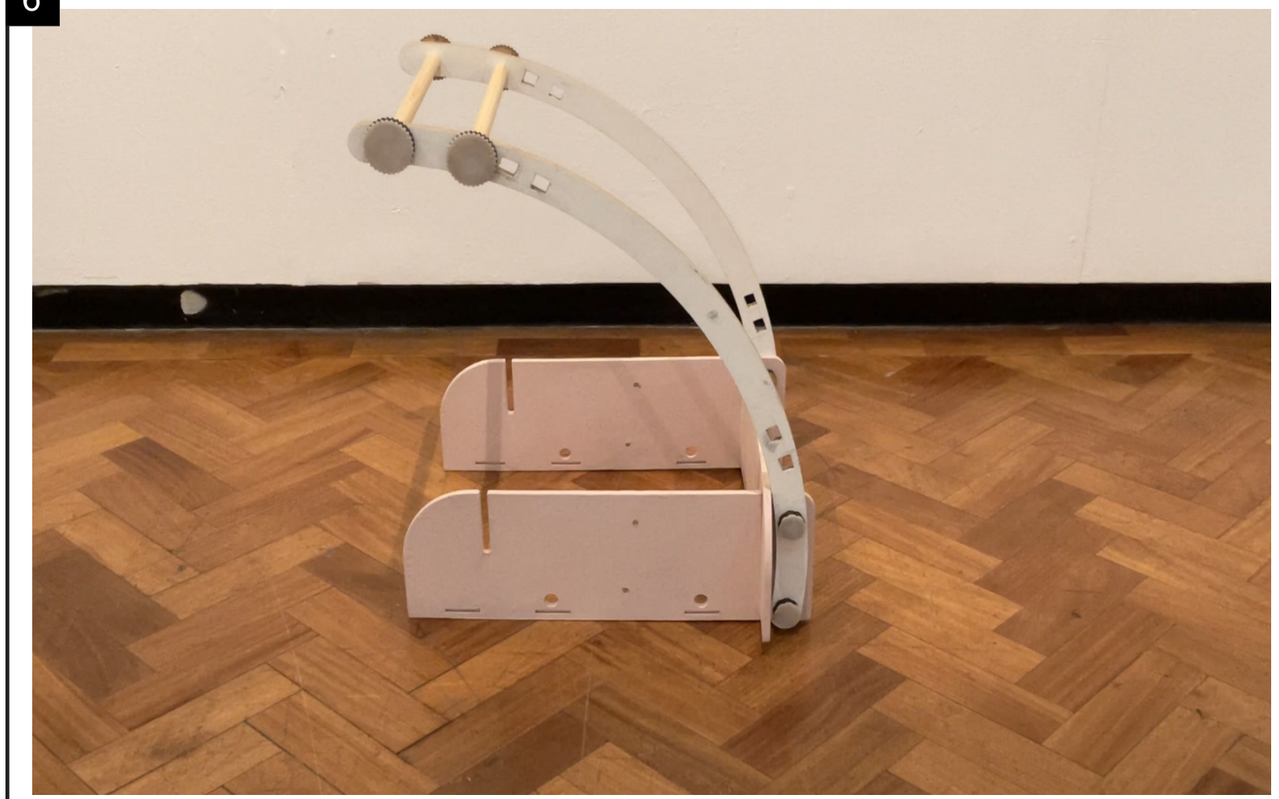


click on the link to view the assembly instruction

https://youtu.be/tr6E4COa0IE?si=-RIk_cGgAv8-gXe6

1 Prepare these materials

2 Assemble the three boards together

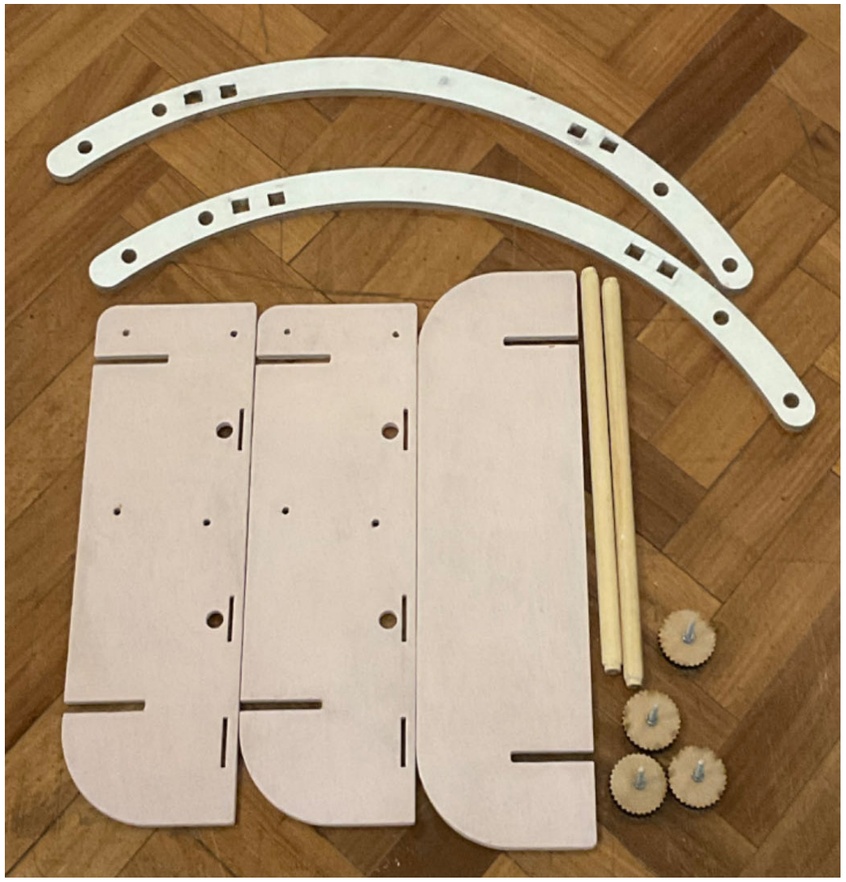
3 To connect the assembled board to the curved board, we need to use four small knobs and their corresponding hollow knobs

4 After the stitching is completed, it is shown in the figure

5 Hand-sewn toys filled with rice, pistachio shells and cotton

6 Combine a baby gym with Hand-sewn toys

Final model-Baby play gym



Logo and product name

Figure 17.1

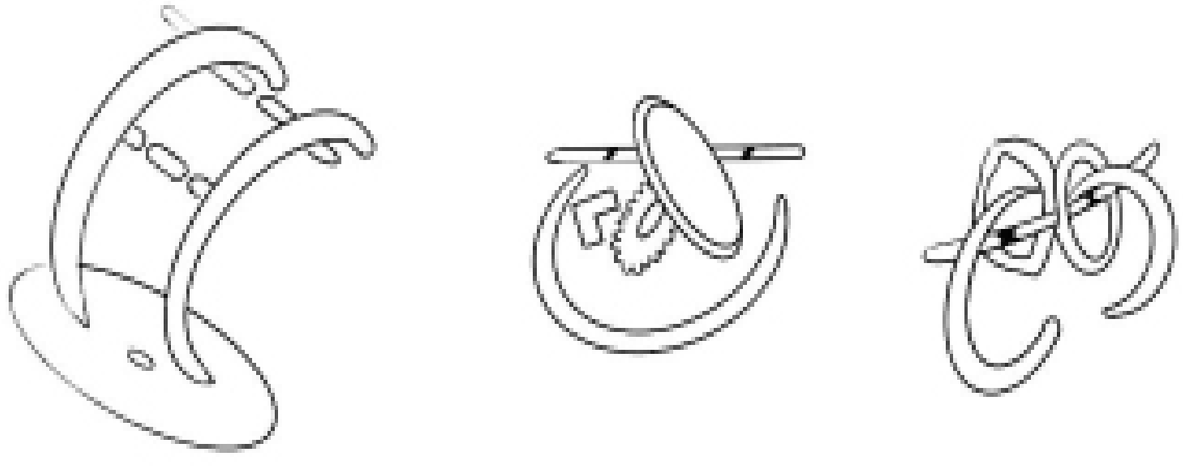
Figure 17.3

Figure 17.2

Logo Description for Wonder Grow Bundle

Product Name: Wonder Grow Bundle
The name conveys the idea of a magical, versatile toy set that children can use as they grow.

Product Description: Wonder Grow Bundle is a sustainable toy designed to cater to different stages of a child's development. This versatile toy aims to reduce waste by evolving and adapting to the growing needs of children, fostering their overall development without the need for multiple, separate toys.



Final LOGO

My logo is mainly created by the shape of the product I designed, expressed by some simple patterns, creating childlike fun through simple patterns.

Laser cut LOGO