

DISCOVER

Background

In China, 30% children aged 0-2 are taken care of by their grandparents. 40% children after the age of 3 are still raised by their grandparents.

Why



1. Demographic change

China's fertility rate is declining, which causes fewer children. Life expectancy in China has increased, which means the number of grandfathers has increased.



2. Traditional Chinese social culture

Chinese society values the importance of family. Thus grandparents treat inter-generational parenting as a family responsibility to pass on the family line.



3. Long working hours for parents

Based on a five-day work week, the average Chinese person works 9.2 hours a day, which cause parents do not have time to stay with their children.

The purpose of frustration education

The aim of frustration education is directed towards a psychological ability, namely frustration tolerance. Frustration tolerance refers to an individual's ability to withstand the shock and stress of a frustrating situation and to avoid psychological and behavioural disorders by escaping and resolving the situation.

The importance of frustration education for children

Early childhood is a critical period in the formation of a person's personality and there is a close link between the mental health of this period and children's ability to adapt to society and resist setbacks when they grow up.

The current situation

Children receive their education mainly in kindergarten and at home, but there is a large gap between grandparental education and kindergarten teachers' education.

Education in Kindergarten

The teacher's role in the nursery is to supervise children. During the day, children need to deal with frustrations by themselves. If the child is unable to solve the problem, teachers will guide the child how to solve it.



The polarisation of some grandparenting

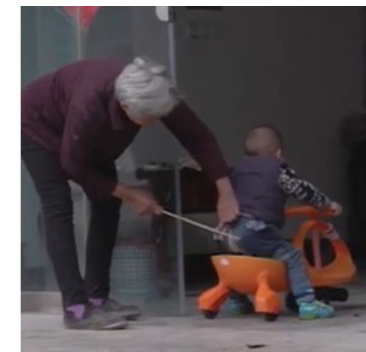
No teaching children how to deal with frustration and why some things cannot be done

Coddling



The grandparents will solve problems for the child during the day, making grandchildren have few chances to experience frustration.

Violence



If children make mistakes, the grandparents will punish the children by scolding them rather than telling them the reason for the mistake and how to correct it.

If the education and requirements received in kindergarten and at home are not the same, the effects of education will cancel, which is not only detrimental to the development of resilience, but also to the development of other aspects of children's personality and sociality.

Parents and teachers should be in agreement on how to educate and guide their children in the face of frustration so that effective home and kindergarten cooperation can be achieved.

DISCOVER

Determining the age of the target child



Children aged 3 to 6 years in kindergarten

1. As children in kindergarten begin to learn and live independently, their social life expands and they face frustration.
2. This is the critical period in which children's resilience to frustration develops at the fastest rate. The critical period is the period when individuals are most sensitive to stimuli, when they are most likely to acquire certain knowledge and skills or develop certain psychological traits.



Grandparental characteristics

1. A wealth of life experience. They can see the issue of gain and loss in a better way than younger people.
2. Grandparents are more patient and consider things more thoroughly than younger parents.



Characteristics of children

1. Children have a strong curiosity but can only maintain enthusiasm for a short time.
2. They cannot maintain concentration for a long time.

The ABC Theory of Frustration (Ellis)

A is the precipitating event, i.e. the frustration that the individual is experiencing.
 B is the individual's understanding and rating of the frustrating event in the context of the frustration.
 C is the emotional and behavioural consequences of experiencing and experiencing the frustration, and the perception of the frustration.

The theory focuses on the fact that an individual's behavioral expression of frustration is not caused by the frustration itself, but by the individual's perception of the frustrating situation.

To change children's perception of frustration as an entry point, guide children to correctly understand frustration, reduce the negative impact of frustration on children and improve their frustration tolerance

Resilience to frustration guide case study

(Frustration arising from conflicts between children and peers)



What happened: Bae, Lee and Lisa were stacking blocks in the same group when Lisa noticed that Lee's building did not look good and asked Bae to demolish Lee's building. Bui went to Li's building and was ready to tear down Li's building on Lisa's instructions. He was very anxious to protect his work and threatened Bui, saying: "If you tear mine down, I'll tear yours down too". Bae was very angry at this and tried to fight. At this point the teacher stopped Bae and started to communicate with him.



Teacher: Why did you grab the blocks Xiao Li built?
 Bae: Because he built it randomly and without everyone's consent.
 Teacher: Do you know how he feels that his toy will be taken away from him by you?
 Bae: Not happy.
 Teacher: And did you know he was unhappy when you were grabbing his blocks?
 Bae: Too excited and didn't gauge how he was feeling.
 Teacher: If he had told you that he was unhappy, would you have thought of something else?
 Bae: Yes! But how would I know if he didn't say anything.
 Teacher: What do you think you could have done to make him happy?
 Bae: I can help him to fix it better.
 Teacher: Then next time could you say to Li that you want to help him.

How to guide children to resist frustration



Encourage



Developing confidence



Exercise communication with others



Encourage focus on process



Fostering rational analysis

In this process, the teacher did not criticise Bae's behaviour directly, but talked to him to find out why he did in this way. The teacher then found out that Bae had not communicated his thoughts to his peers properly, and then she gave Bae advice.

Insight and opportunities

1. Grandparents have a wealth of experience in dealing with frustrations and they can guide children how to deal with frustration.
2. Grandparents need to encourage grandchildren to face frustration by themselves.
3. Some things can cause frustration, but we need to look beyond the surface of things to the root cause of the frustration and tell children how to analyse it.
4. The understanding and rating of the frustrating event is key to the emotional response to frustration.

DEFINE

What if



1. Grandparents and children role play together. Children experience the frustration of different situations.



2. Grandparents and children playing games together. In the game the child experiences frustration..

Why game?



Play can build parent-child emotional connections through more interaction. It was found that grandparents mainly play a supervisory and caretaking role in the child's life and are less involved in the child's activities.

Games for children

1. The difficulty of the game can be controlled artificially. This prevents the game from being too difficult or too easy, which makes children lose interest.
2. The rules of the game can be set up so that children understand the importance of following the rules.
3. There are cooperation and competition in the game. In cooperation, children can develop their communication and collaboration skills, and in competition, they can learn to accept failure and improve their tolerance for setbacks.



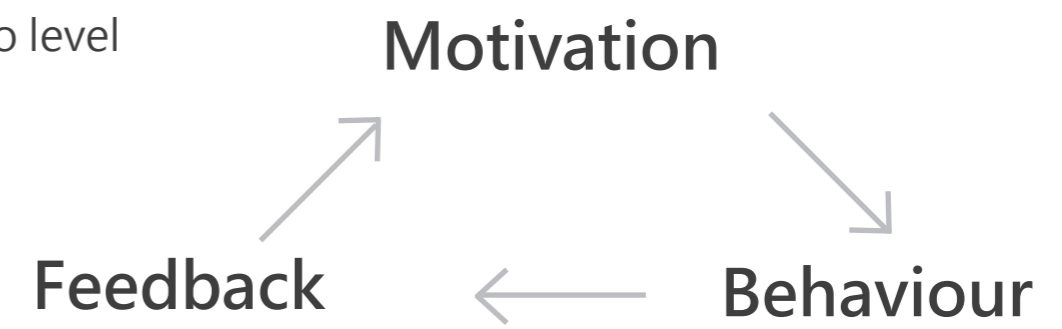
Games for grandparents

1. Games can be used to train grandparents' different senses, thus exercising their reaction and visual processing skills.
2. Playing games can help to reduce anxiety and improve psychological conditions.



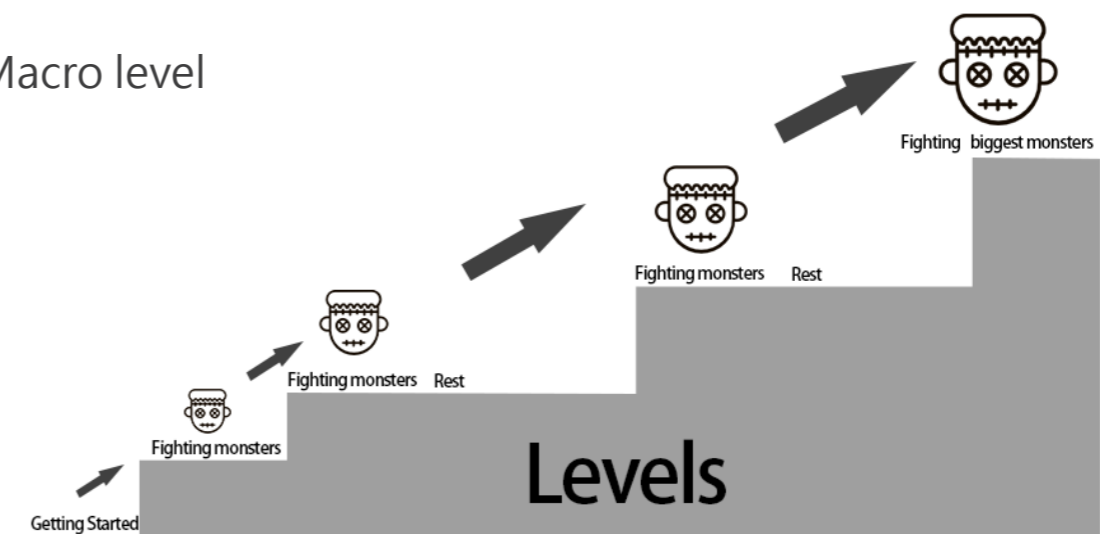
Game design

Micro level



The engagement loop describes the micro level: what your users are doing, why they are doing it, and what feedback the system gives.

Macro level

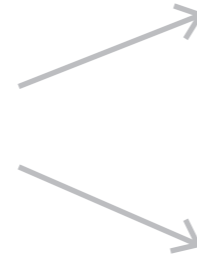


Each one will increase in difficulty over the previous one, thus stimulating the player to engage in the game. Secondly by varying the player's level during the game, it gives the player a sense of satisfaction. Finally the game should not be too difficult at the beginning and should give players time to familiarise themselves with the basic rules of the game.

DEFINE

Hand-eye coordination

Hand-eye coordination refers to the coordination of the fine movements of the human hand in conjunction with vision, and is made up of the ability of small muscles in conjunction with perceptual ability.



For children: Hand-eye coordination promotes the coordination of small muscle groups and perceptual movements, allowing children to better adapt to the demands of their environment and respond in a timely manner, thus promoting the development of their intelligence.



For the elderly: It is beneficial in slowing down the cognitive decline of the elderly and reducing the risk of Alzheimer's disease.

Case study

Toys for the elderly



Fine hand exercises such as grasping stimulate the cerebral cortex to slow down cognitive decline.

Children's educational toys

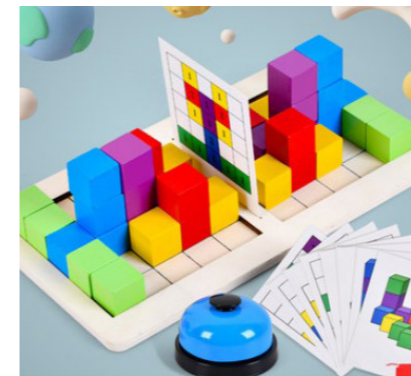


The toy is designed to engage children with a story theme and bright colors, allowing for hand-eye coordination training. The rules of the game are simple and thus easy for children to use.

Common points of consideration on products for the elderly and children

1. Ease of use: easy to learn.
2. Safety: Ergonomic, i.e. chamfered edges and safe, durable materials.
3. Educational: toys are designed to train and reinforce a particular skill.
4. Playability: the fun the toy can generate.

Parent-child interactive products

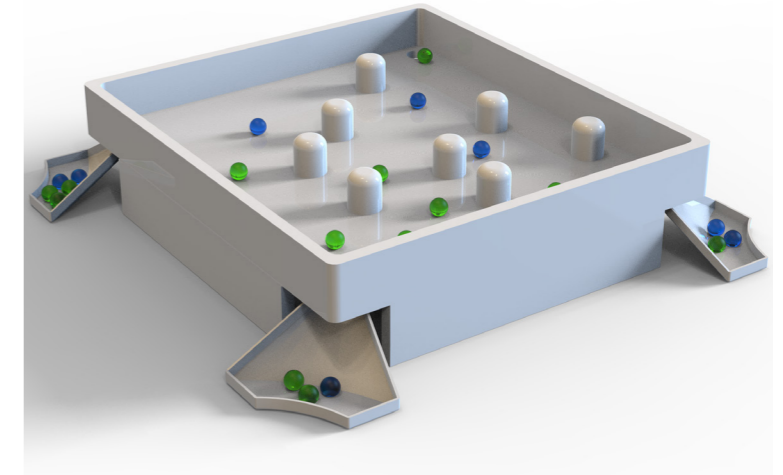
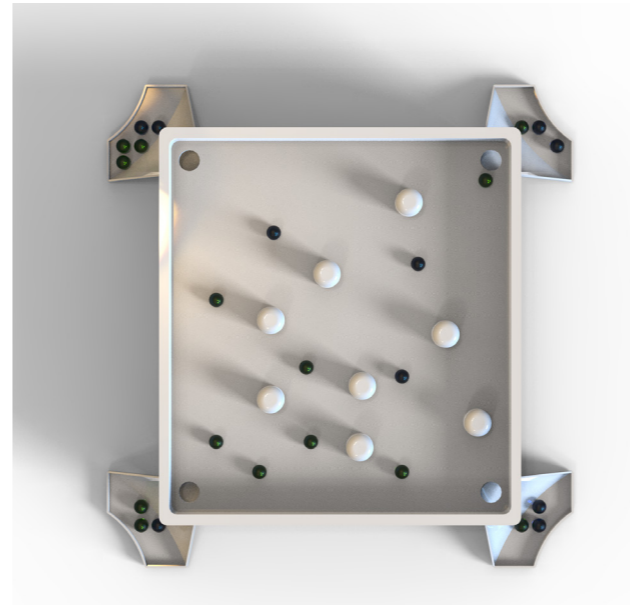


In addition to the points mentioned on the left, in parent-child interactive products there is an emphasis on **interactivity**, i.e. confrontation and collaboration in the process of playing and allows children to develop the ability to communicate with others.

DEFINE

Concept 1 Folk toy redesign

A modified version of the marble game where each player has the same number of marbles and the first person to bounce all the other player's marbles off the field wins.



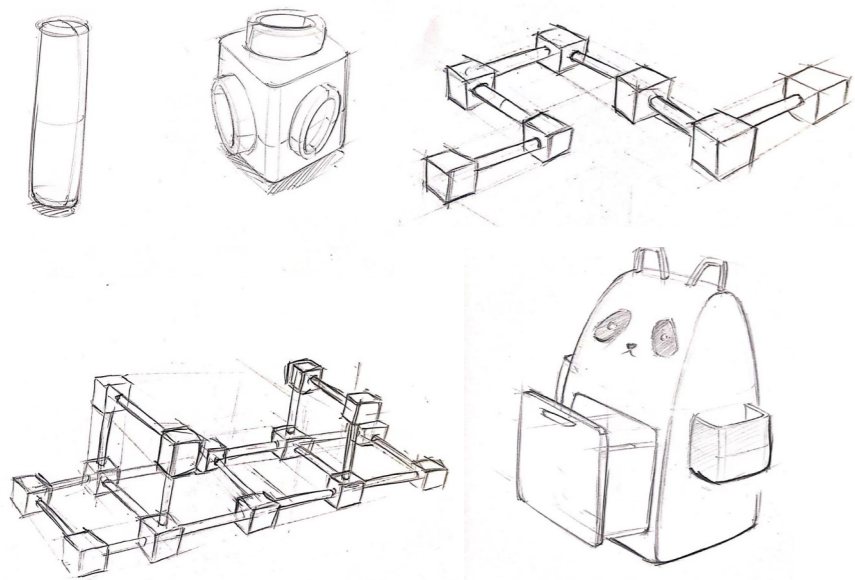
Concept 2 Module Games

Children and adults work together through the unit modules to put together recreational equipment such as baskets. Finally the child puts the modular components into a toy storage box.

1. Read the instructions and use the different modules to build different facilities

2. Children and grandparents play together

3. After playing, dismantle the facility and the child puts the modules into the storage box



DEFINE

Concept 3 The story of monkey family

The game is based on a story, which divided into different chapters. Under the different chapters there are different games. The difficulty of the games increases as the chapters change. Each game is designed with a specific training purpose, such as training hand-eye coordination. Finally, through competition, the child's resistance to frustration is trained. At the same time, through the games, the children are able to create communication activities with their grandparents, thus achieving an emotional connection.

Video prototyping



Selection criteria

	Weighting ratio	Pinball games	Module Games	Story games
Security	9	6	7	7
Playability	7	6	6	7
Ease of use	8	8	6	7
Interactivity	7	8	7	7
Educational	7	6	6	7
Total points		258	244	266

Concept 3 was chosen as the final solution on this basis.

DEVELOP

User test



The inner wall of the game box is too high and not very easy to use

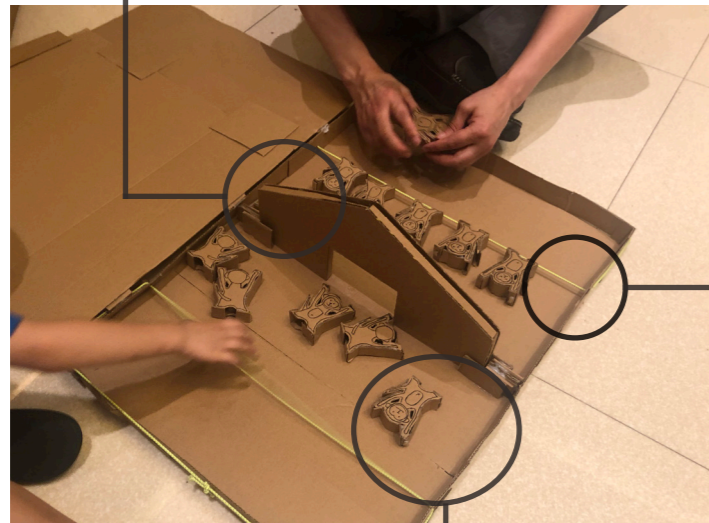


The stick tends to fall off during use.



Remove the sticks in view of the difficulty of machining them later.

Lowering the wall height of the game box



It is difficult to eject the monkey.

Changing the position and height of the spring rope

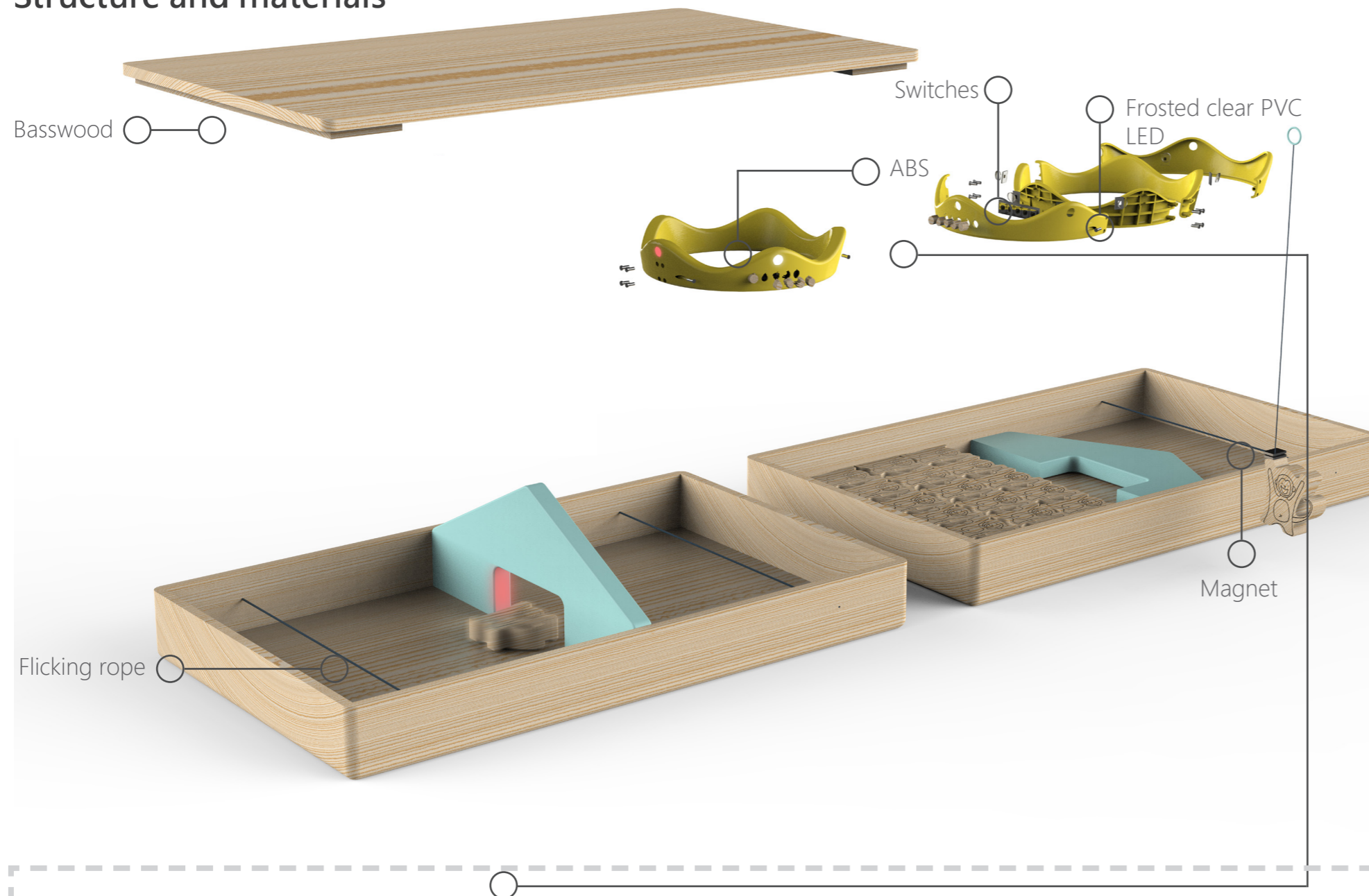
Corrugated models are prone to breakage after repeated testing.

Turning the monkey and the game box into wood



DELIVER

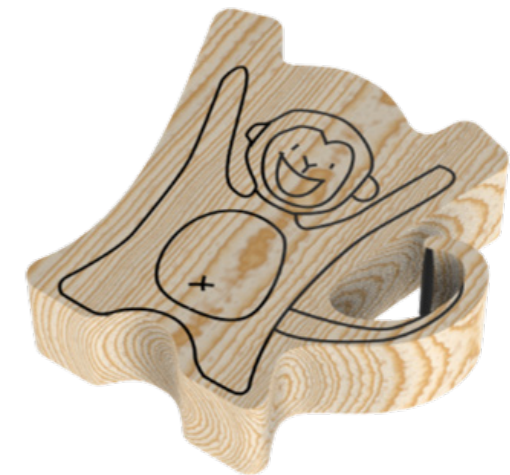
Structure and materials



Why choose the image of a monkey

Firstly, there is an 'isomorphic' relationship between children and animal thinking, which is determined by the psychological characteristics of children. Children's closeness to animals is a form of self-catharsis. The 'animal' figures in the stories and films have a rebellious character and a power far greater than they should have, showing children's expectations of animal figures.

Secondly, monkeys are group animals. This is in keeping with the subject of the game.



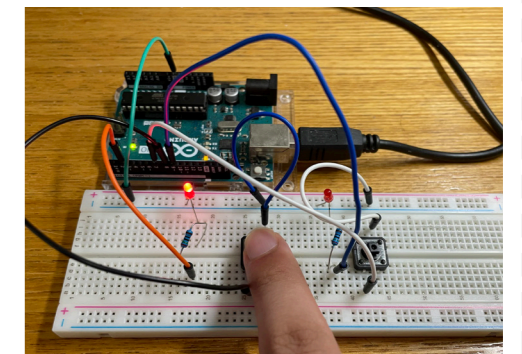
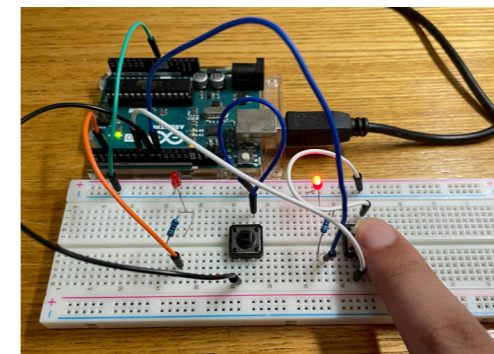
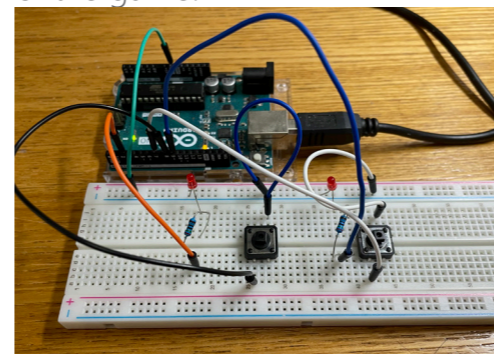
Crown

Grandparents and children each carry a crown. If whoever wins a game gets a fruit-shaped item and can use this to turn on the corresponding button to turn on the light of the corresponding color.



Why crown

1. It allows the child to become immersed in the game. By wearing a crown, the child will feel like a character in the game.
2. The child is motivated to participate in the game by earning "diamonds" from the competition.
3. The crowns allow the child to keep track of the scores and thus keep them in line with the rules of the game.



DELIVER

Story board



Scene 1

There are two groups of monkeys in the forest who don't like each other and are in constant conflict



Rule: Each player places the same number of monkeys in different formations and one person shoots, whoever shoots the most monkeys off their opponent wins.

Purpose of the game: to train creativity

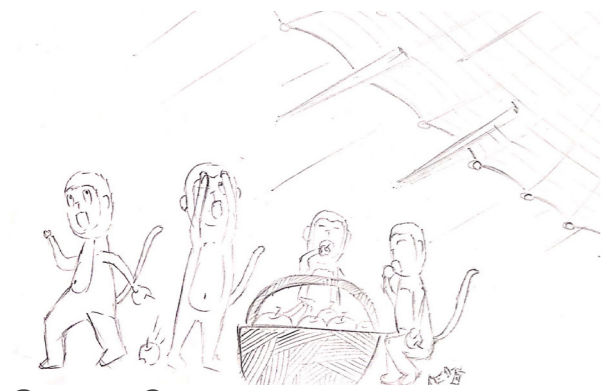
Difficulty: ☆



Rule: The basic rules remain the same and the game is made more difficult by adding a door.

Purpose of the game: Training creativity and hand-eye coordination

Difficulty: ☆ ☆



Scene 2

Story: One day the hunters lay a fruit trap and arrest two tribes of monkeys.



Rule: The winner is the one who sucks the most apples within the time limit, directly from the monkey.

Purpose of the game: Training agility and hand-eye coordination

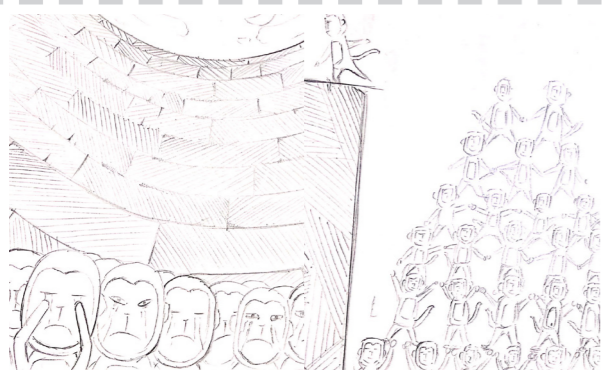
Difficulty: ☆ ☆



Rule: Adding to the original, the monkey is tethered to a rope to suck the fruit thus making it more difficult.

Purpose of the game: Training agility and hand-eye coordination

Difficulty: ☆ ☆



Scene 3

Story: The monkeys are locked up in a prison. At this point they put aside their past preconceptions and then escape by stacking blocks.



Rule: Each person has the same number of monkeys and the one who has the highest pile wins.

Purpose of the game: Training patience and hand-eye coordination

Difficulty: ☆ ☆

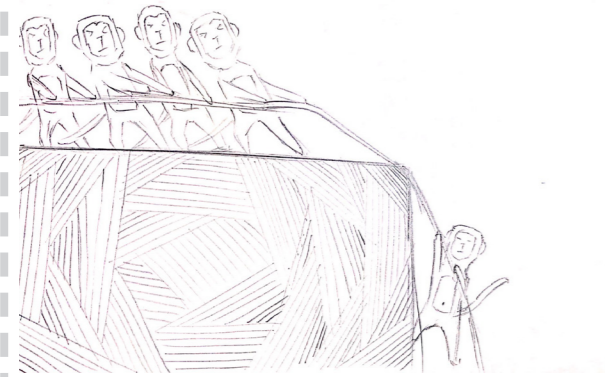


Rule: The winner is the one who can make monkeyes into the specified shape in the shortest time.

Purpose of the game: Training creativity and patience

Difficulty: ☆ ☆ ☆

DELIVER



Scene 4

Story: The escaped monkeys use the rope to free the rest of their companions.



Rule:The monkeys are sucked directly from a rope with a suction stone and whoever gets the most wins.

Purpose of the game: Practice agility and hand-eye coordination

Difficulty: ☆ ☆ ☆



Rule:The original rules remain the same, tie the rope to the pole and suck the monkey.

Purpose of the game: Practice agility and hand-eye coordination

Difficulty: ☆ ☆ ☆



Rule:The winner is the one who sucks the monkey with fishing rods, whoever sucks the most in one go.

Purpose of the game: Trains hand-eye coordination and creativity

Difficulty: ☆ ☆ ☆ ☆



Scene 5

Story: At the end two groups of monkeys live happily together



Rule:Using a fishing rods to suck the monkeys, each person sets the monkeys up in two rows in the box and the winner is the one who takes the least time.

Purpose of the game: Trains hand-eye coordination, agility and tidying up toys

Difficulty: ☆ ☆ ☆ ☆



Rule:The grandchildren put the lid on last and the game is over.

Reflection

1. Research and design should pursue quality rather than quantity. The design must not be formalistic.
2. The process of research should be logical and every word spoken should have a basis.
3. The output of design should be helpful, i.e. useful design, not rubbish.
4. The interviews or articles should be viewed from a dialectical perspective. You can't just use them arbitrarily, you have to think carefully about the logic behind them.