



ENERGLOBE

Inspired by today's frequent disasters around the world, the project focuses on the psychological and physical health of children in disaster areas. Through a combination of software and hardware, it provides psychological comfort to children while helping parents to ensure their safety, trying to create a better life for people in disaster-prone areas.



Individual Project
2023.3-2023.6

Education Service
UI/UX Design
Product Design

Background

This is a scene from the Manchester slums, which depicts a disaster that occurred in 1969. In today's world of material abundance, disaster assistance and relief supplies are often no longer the biggest problem. However, psychological care for people in the aftermath of a disaster has long been lacking.



Data

As environmental destruction and man-made conflicts continue to escalate, the **number of disasters** in the world in the last decade has been alarming and on the rise as a whole.



Tens of thousands of people in the world are suffering from the disasters every day, and the number keeps rising. The constant stream of disasters is a common dilemma for all mankind.



Number of people affected by major disasters in 10 years (Unit: 10,000 person)

Research

It has been found that after a disaster, **children's sense of security is more seriously undermined** than that of adults [1]. A survey of 450 students in two secondary schools in the affected areas in the month following the Wenchuan earthquake also contributes to the similar conclusion.



200 students



1 month after
the earthquake

"When I think of earthquakes, it's very painful."

41.1%

6.0% "Emotions become numb."

"Have no vision for the future." 6.6%

39.5% "Become very alert and insecure."

[1] Orlee U., Boyle S., Yule W, et al. Risk factors for longterm psychological effects of a disaster experienced in adolescence: Predictors of posttraumatic stress disorder. J child psychiat, 2000, 41 (8): 969—979

Existing Solutions



Disaster Education

Bored

Long-term

Infrequent

Unsystematic



Relief Support

Dependent

Non immediate



Psychological Help

Unrecognized

Unaffordable

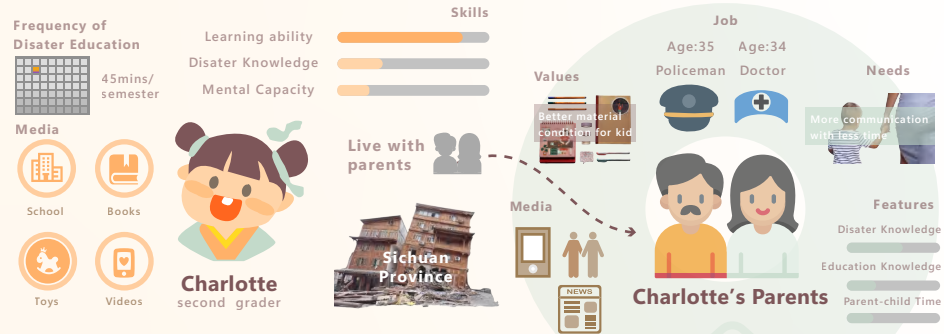
Unavailable

Goals

According to the analysis above, my design goals could be summarized as follows:

- Pre-disaster education
- Post-disaster comfort
- Store energy
- Environment-friendly

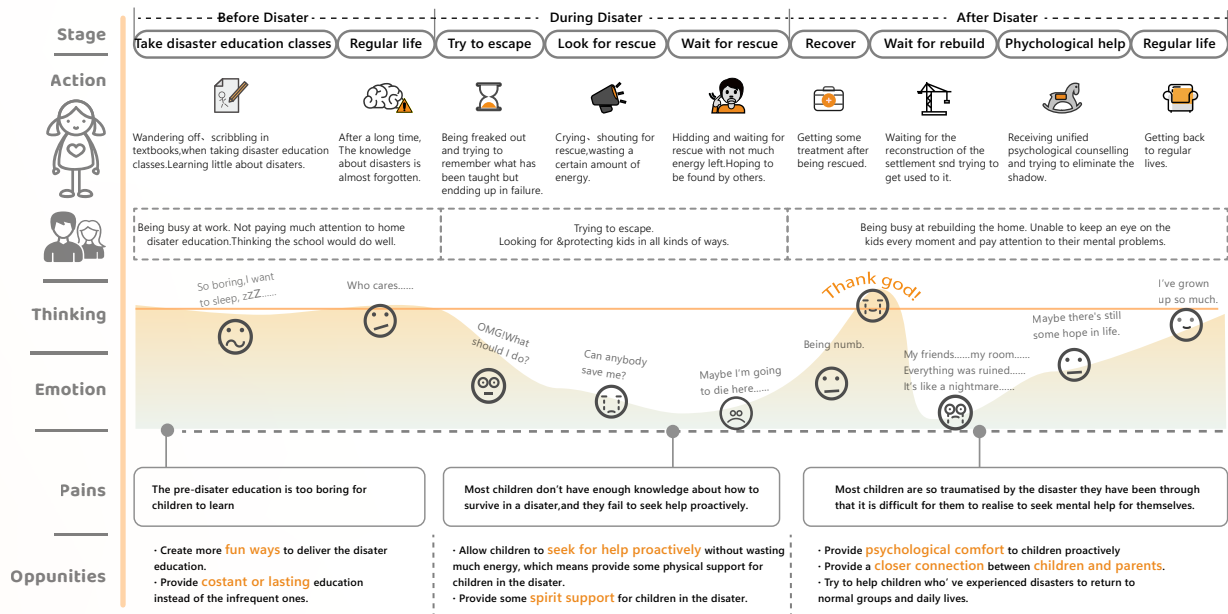
Persona



I don't like taking disaster education classes. Usually, teacher Wu just reads the same textbook and takes some photos, which makes my ears sound like a cocoon. Moreover, it always occupies our physical class time.

Normally we are busy with work and assume that Charlotte will learn all this common sense at school. If the disaster happens one day, I guess we'll all become busier and won't be able to keep an eye on her everyday.....However, there's nothing we can do about it.

User Journey Map



HMW

Goal 1

How might we make the disaster education more fun?

- games
- interactions
- videos
- hotspots

Goal 2

How might we provide users with physical & spirit support?

- convert losses into energy
- conditions for children to seek rescue

Goal 3

How might we comfort children after a disaster?

- connection between children&parents
- attention being paid
- decompression toy
- companions

User Description

Children (in disaster-prone areas)

Secondary Role

Parents/Teachers/Friends.....

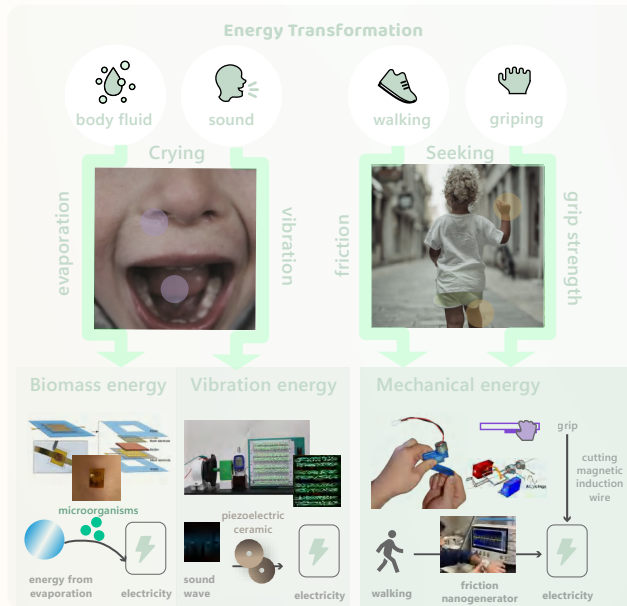
Multimedia

Generate energy

Hardware + Software

Summary

Field Research



Comfort Ways



Current Products

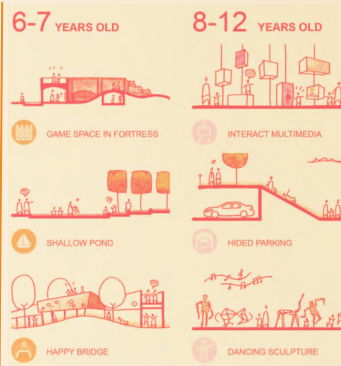


Character Analysis

Recognizing the school-age children(6~12) as the main target users, I have made researches about this group deeper and summarised as follows:



Children's Activity Needs



Common Sports

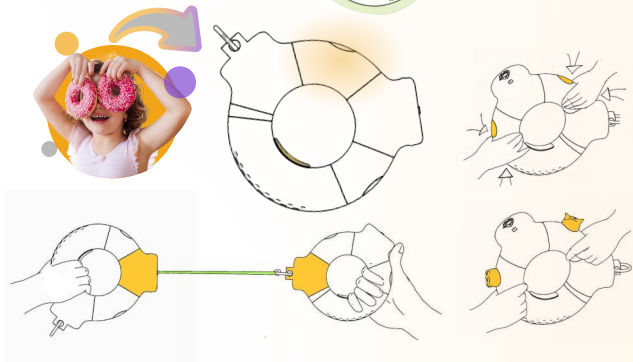
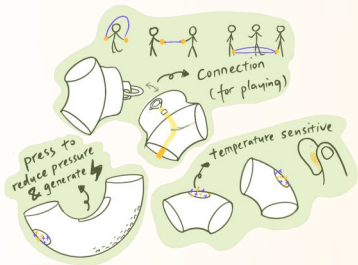


Concept

Actions → Electricity

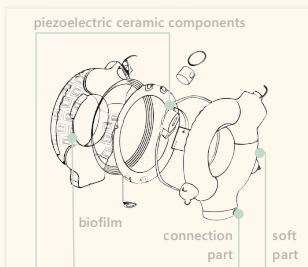
Play&Actual Use

Muti-activities



Structure&Material

Plan 1

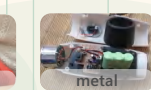
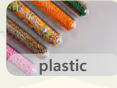
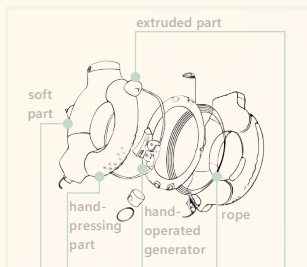


· high cost
· vulnerable

Impracticable



Plan 2



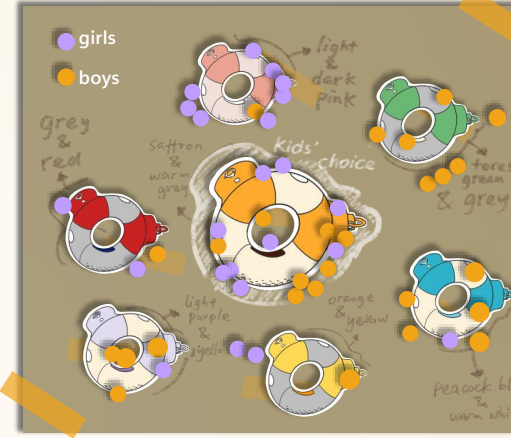
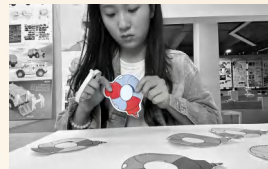
· lower cost
· child-friendly

Practicable !

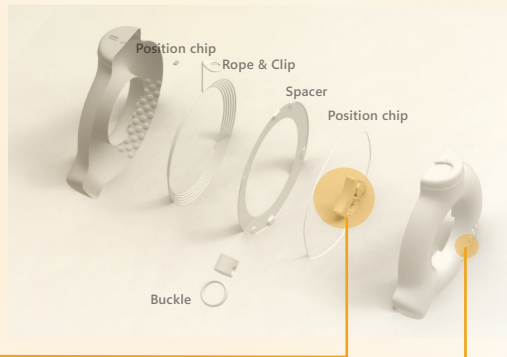


Mesh-up

I picked the color of the product through mesh-up and hold a **vote among children** in NJUST Experimental Primary School.



Modelling

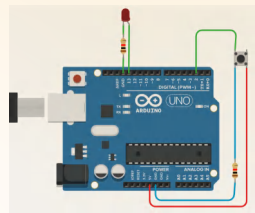


Functional Module



Generate electricity through pressing the mechanical structure to power the lamp of the product.

Coding

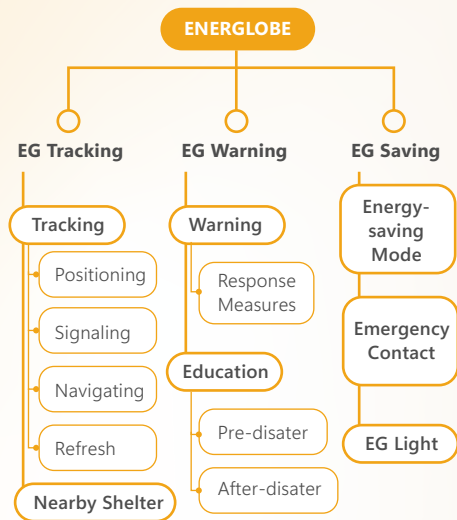


```
void setup()
{
  pinMode(13,OUTPUT);
  pinMode(2,INPUT);
  digitalWrite(13, LOW);
}

void loop()
{
  if(digitalRead(2)==HIGH){
    digitalWrite(13, HIGH);
  }
}
```

Interface Design

Information Structure



Low Fidelity Interface

Icons



Standard Colors

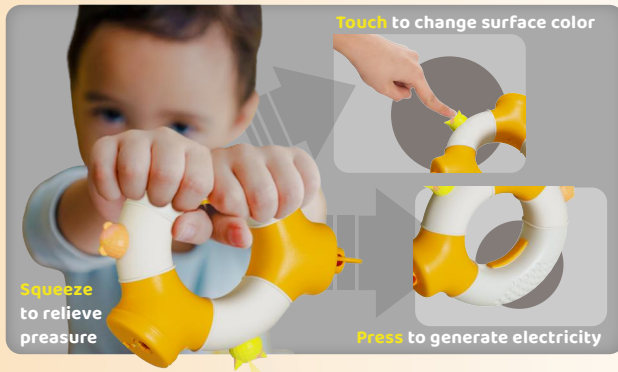


Other Elements

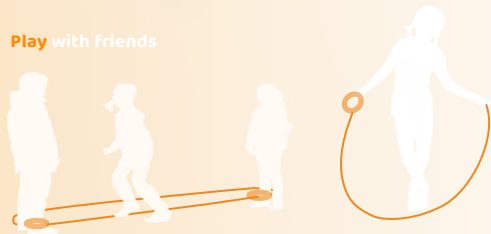


Design Elements

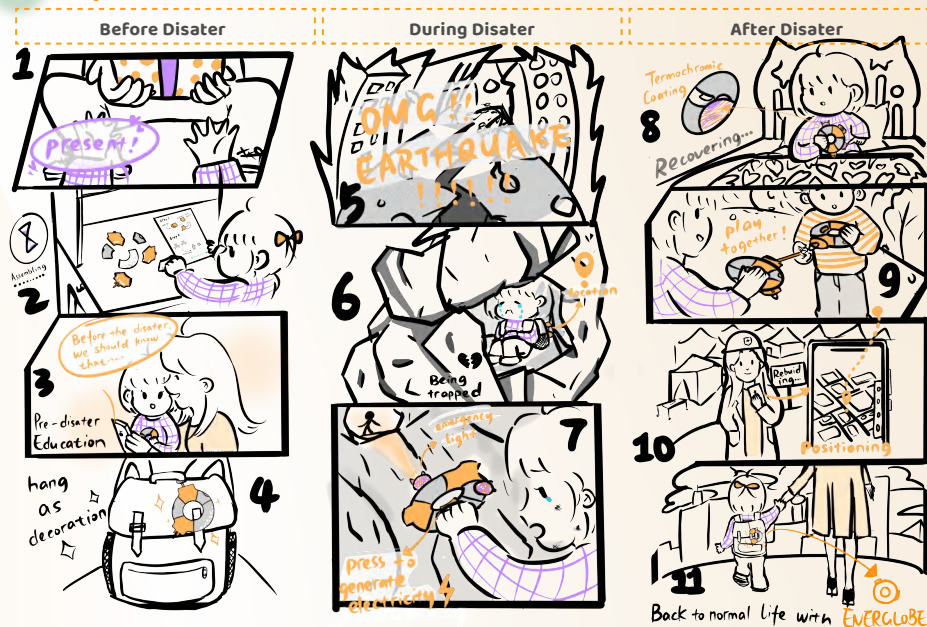
Scenarios



Play with friends



Storyboard



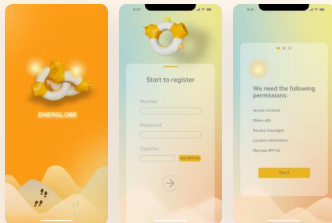
Interface Presentation

Logo

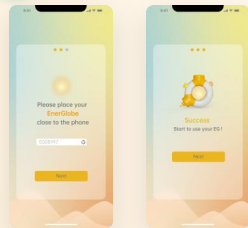


ENERGLOBE

Register

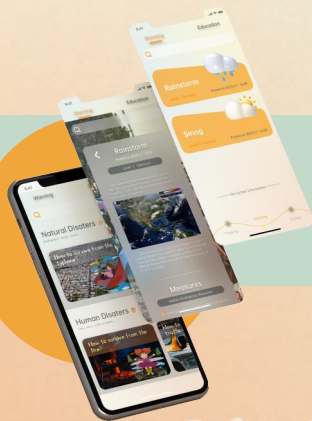


EG Connection



EG Warning

This section provides early **warning** of potential disasters and also the corresponding **measures** to help parents **teach** their children about disasters before they occur through **parent-child interaction**.



Before Disaster

EG Saving

This section provides emergency functions for parents in disaster, including **Energy-saving Mode**, **emergency contacts**, control of the **EG light** and more, helping parents deal with certain emergencies and find their children as soon as possible.



During Disaster

EG Tracking

This section connects primarily with the **ENERGLOBE** hardware. The location chip helps parents to track their child's **location** after a disaster and helps to provide the location of the nearest **evacuation points**.



After Disaster