## CHINA ASSOCIATION OF INVENTIONS





CAI No.04

Invention: Multi-functional High-strength Building Blocks

Inventor(s): Chi-Hui Tsou; Jian-Hua Du; Chung-Sheng Huang; Fei-Fan Ge; Ji Ma;

Pranut Potiyaraj; Hang Luo; Kai Gao; Xue-Fei Hu; Chih-Yuan Tsou

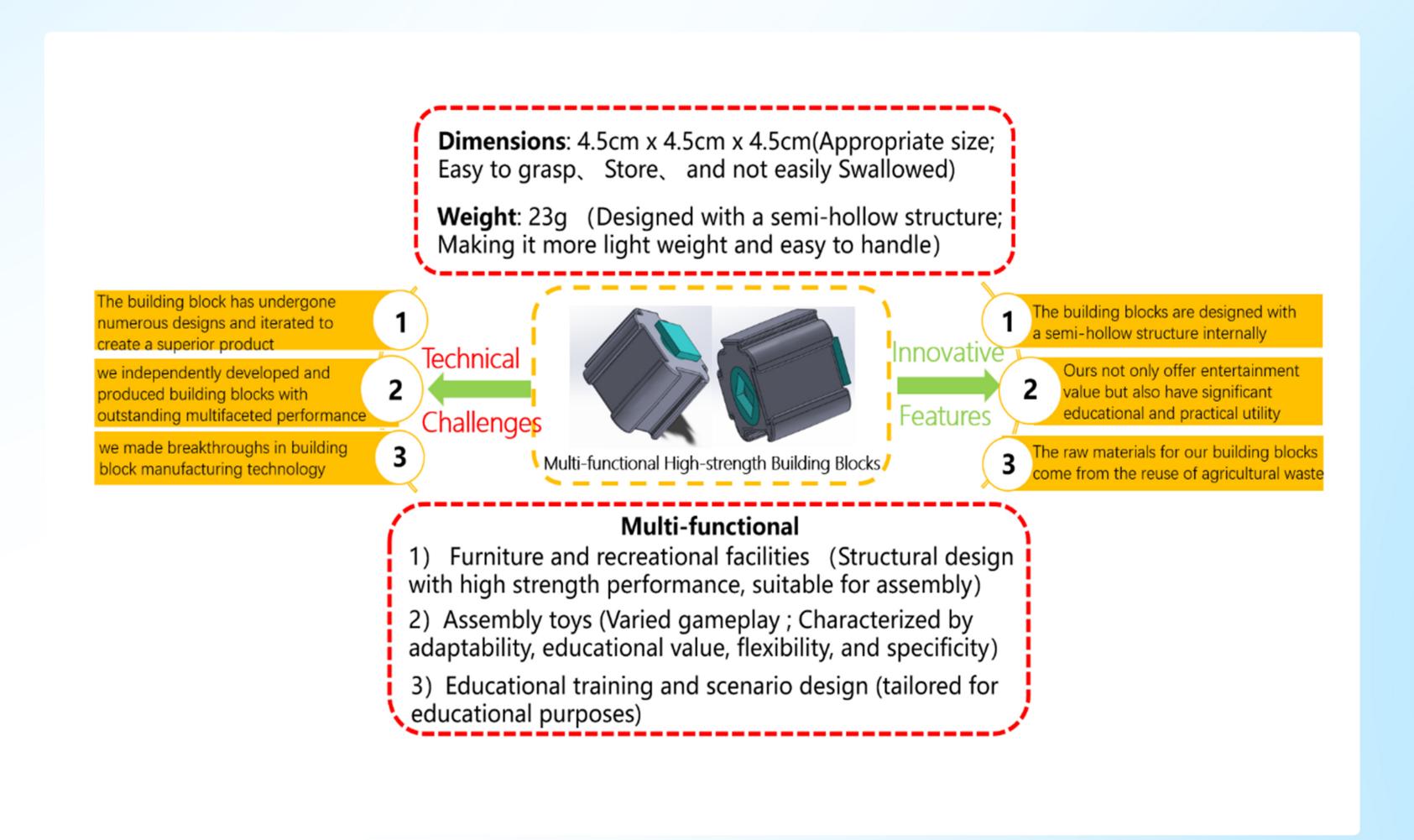
Patent No.: 202211150505.7; ZL202222501535.X (China); 112136099 (Taiwan, China)

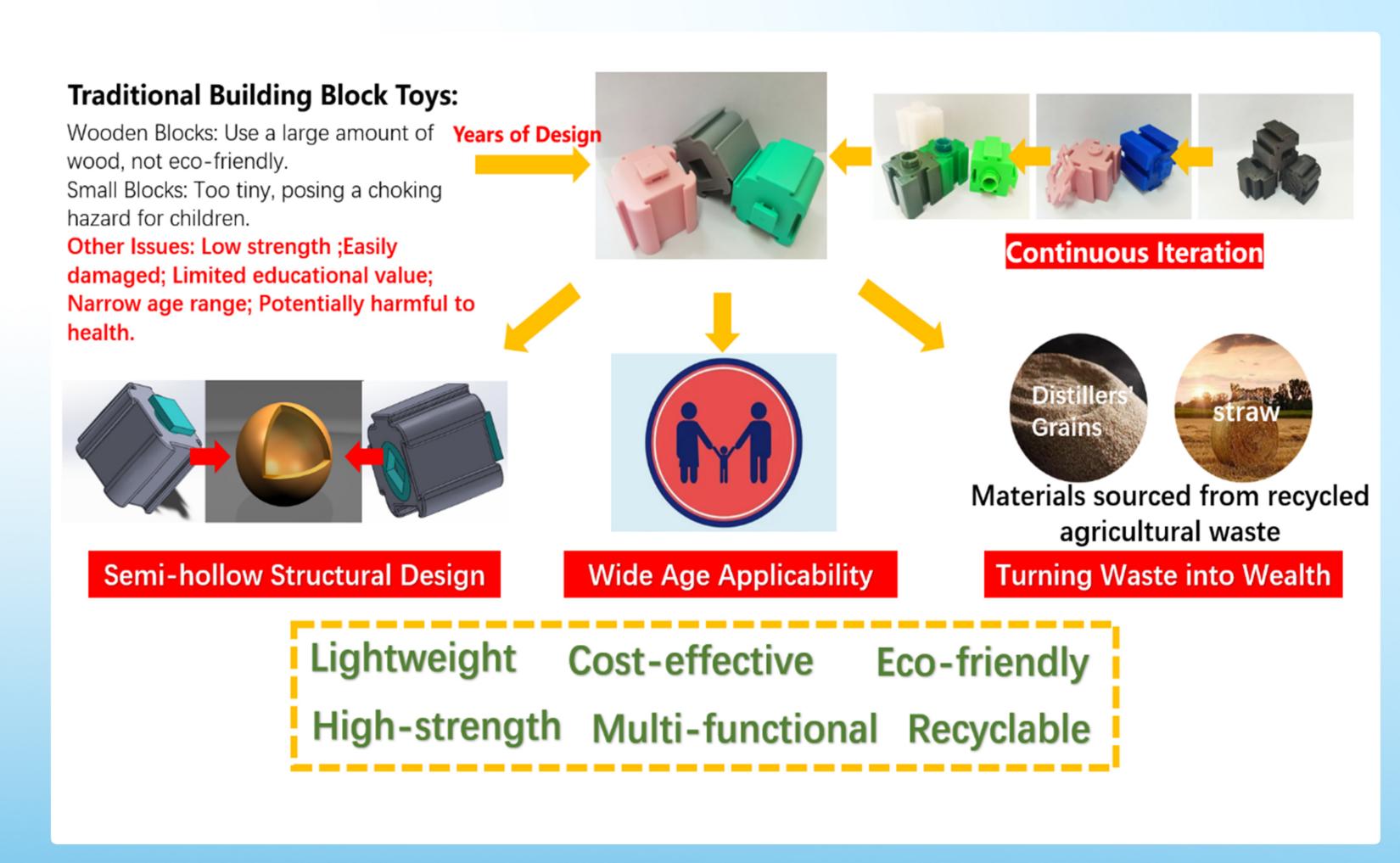
## Introduction:

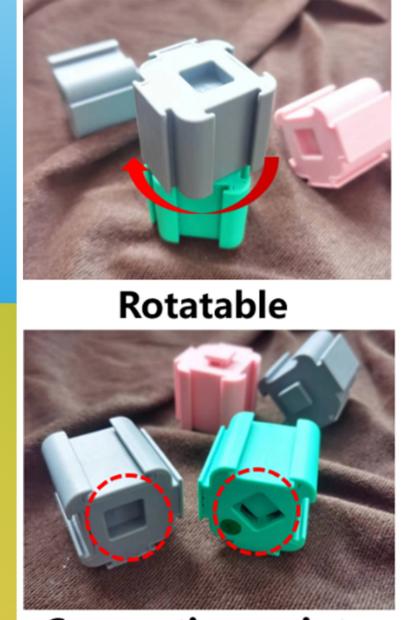
The building blocks currently available on the market suffer from low connection strength, are easily damaged, and are primarily for entertainment purposes, lacking significant educational value. Moreover, they are not very practical and have a limited age range for use.

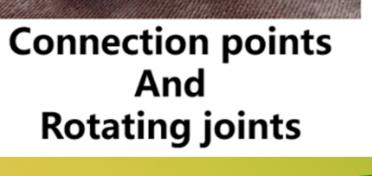
To address these industry pain points, we have developed the world's first multi-functional, high-strength unit components. These are the only globally available building blocks that offer multi-directional high-strength connections. They are easy to assemble and disassemble, and importantly, can be mass-produced. The raw materials can be sourced from agricultural waste, and a semi-hollow design makes the blocks lightweight and further reduces costs.

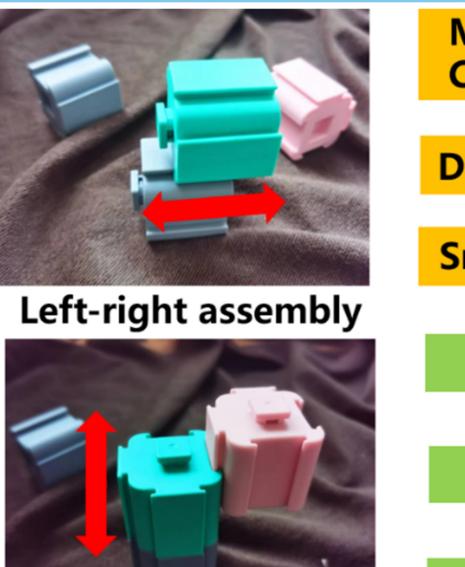
These blocks can be combined in various shapes and are adaptable to a wide range of scenarios. With their high connection strength, parents can let their children play on them safely. Moreover, these blocks can be customized to create highly practical items based on individual needs. Our product is adaptive, educational, flexible, and targeted, capable of nurturing children's creativity, spatial imagination, logical thinking, and hand-eye coordination.

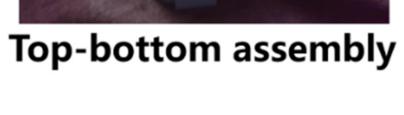




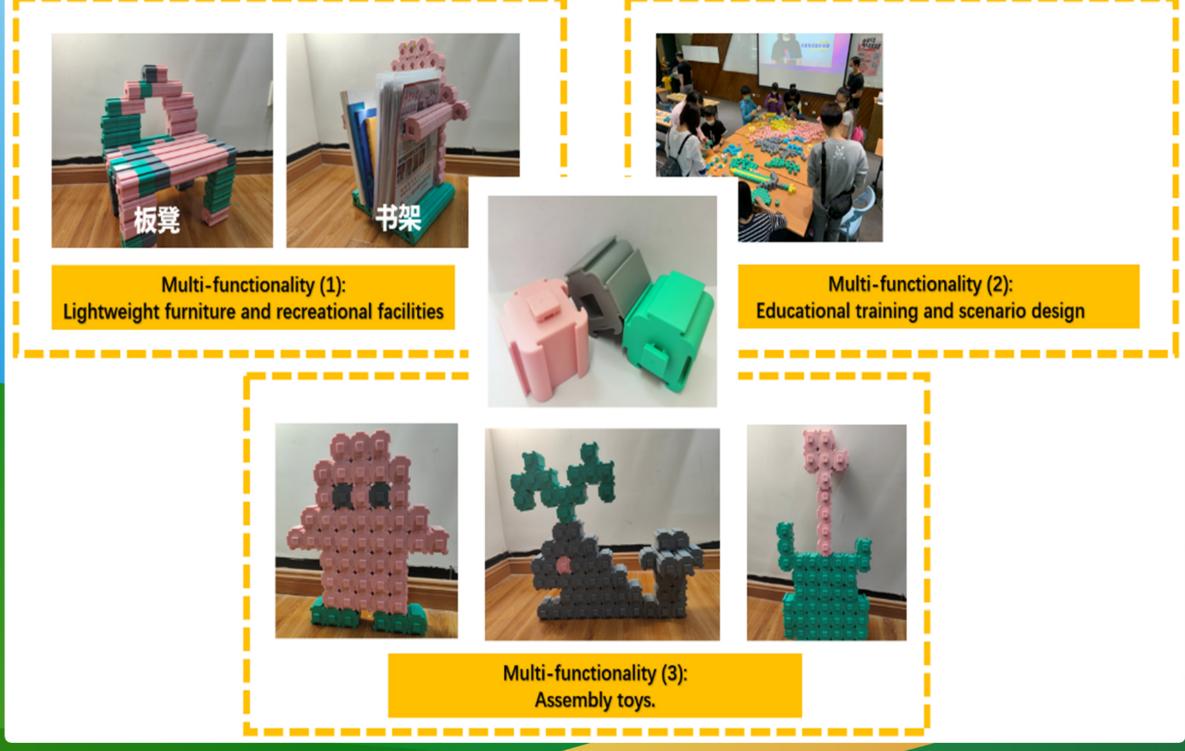


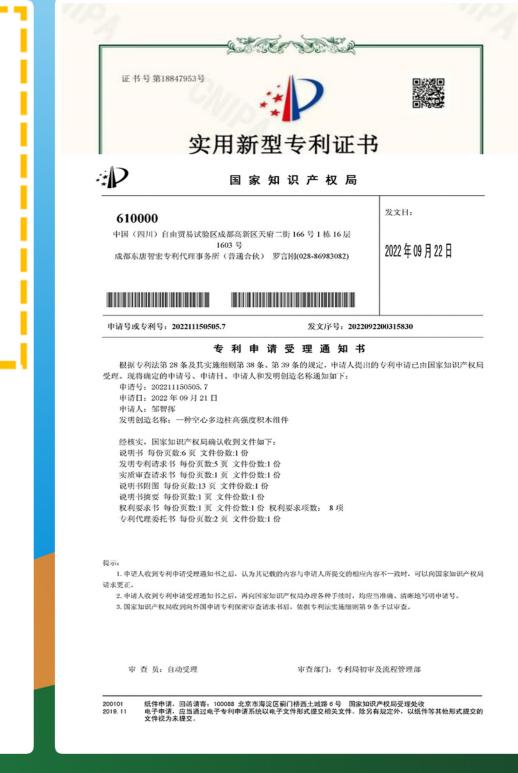












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## INVENTION

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World's First
Multi-functional High-strength

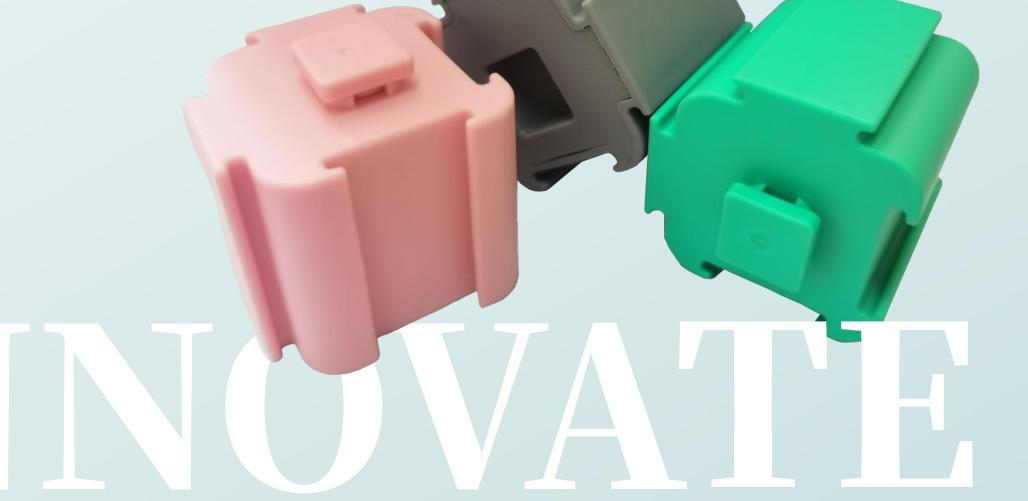
Building Blocks

BUSI -NESS

Product

PRODUCI PLAN





# RELEVANT POLICIES AND INDUSTRY TRENDS

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Policy and market

## **POLICY**

中财政下达支持学前教育发展资金198.4亿元持续推进学前教育深化改革规范发展

来源: 财政部网站 时间: 2021-05-14 【字号: 大 中 小】

**Emphasis on Education** 

Building blocks, as educational toys, attract a growing user base. 国务院依次出台三项与积木玩具紧密相关的政策文件,为积木豆、发展奠定了关键的政策基础;同时中央网信办发布了关于积木玩。 理的文件,在积木玩具行业发挥了重要影响;针对积木玩具业务员,明确了互联网资源贯穿辅助服务业务的概念,相关市场管理政策也相继配套出台;工信部于2019年发布《积木玩具发展三年行动划(2019-2022年)》,提出了我国关于积木玩具发展的指导思想、本原则、发展目标、重点 措施。

**Building Block Policies** 

**Governmental support** 

for the building block industry has notably intensified.



China's Industry Market Size from 2017-2022 (in billions of yuan)

### PRODUCT COMPARISON

Comparison

5-6 years of research and development design

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**Update and iteration** 

Traditional building blocks

Limited educational value

**Easily damaged** 

Low strength

Narrow age range

Potentially harmful to health

**Easy to grasp** 

**Smooth assembly** 

High safety

**High strength** 

**Multi-functional** 





Latest building blocks

## INVENTION INTRODUCTION

Introduction

ducational training

**Multi-functional High-strength Building Blocks** 

Simple Creative Inspirational

PRODUCT

**Building block** structural design

**R&D** of Material (0)

**Advanced Manufacturing** of Building Blocks

**Technical** 

challenges

SZIE: 4.5CM\*4.5CM\*4.5CM **WEIGHT: 23 G** 

**Multi-functional** 

and scenario desig

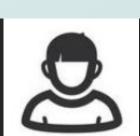
Vide Age Applicabilit

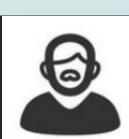
Novel Structural Design **Innovative Broad Practical** 02 **Applications** features

> Upcycling of Waste 03 Materials





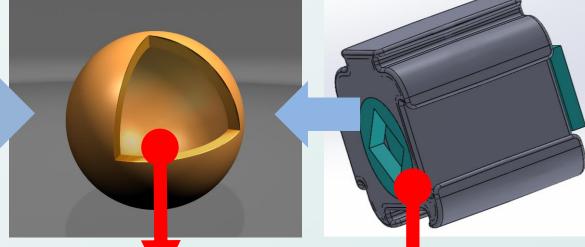




# BUILDING BLOCK STRUCTURAL DESIGN

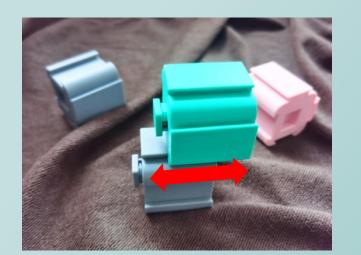
Design

1 Unit component



- 2 Overall semi-hollow structural design
- Uses mortise and tenon joint connection





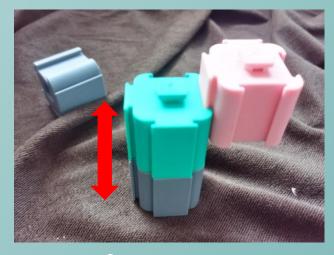
Left-right assembly



**Rotatable** 



Connection points
And
Rotating joints



**Left-right assembly** 

### **Advantage**

Easy and quick connection

**High-strength** 

Multi-directional connectivity

**Light weight** 

# RESEARCH AND DEVELOPMENT OF BUILDING MATERIALS

Raw materials

Our building blocks are crafted from repurposed agricultural waste. Through our dedicated material research and innovation, we've optimized its performance, transforming waste into valuable resources.





### Advantage

Green development

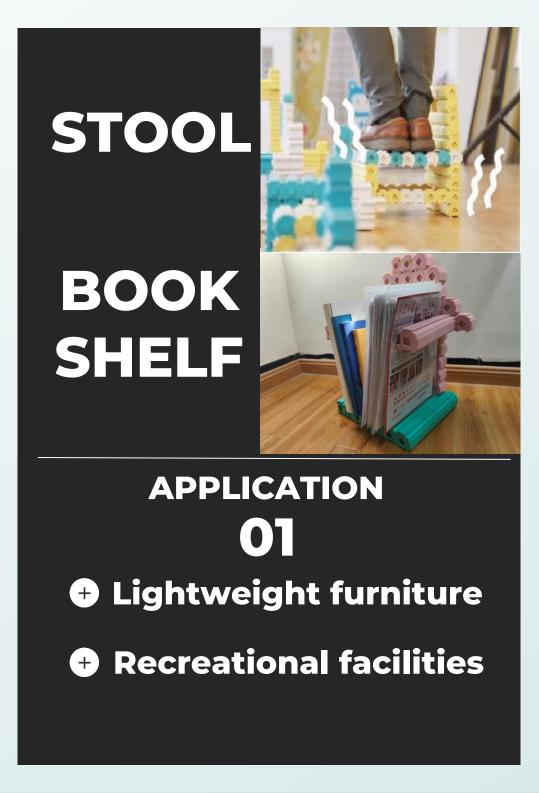
**Cost-effective** 

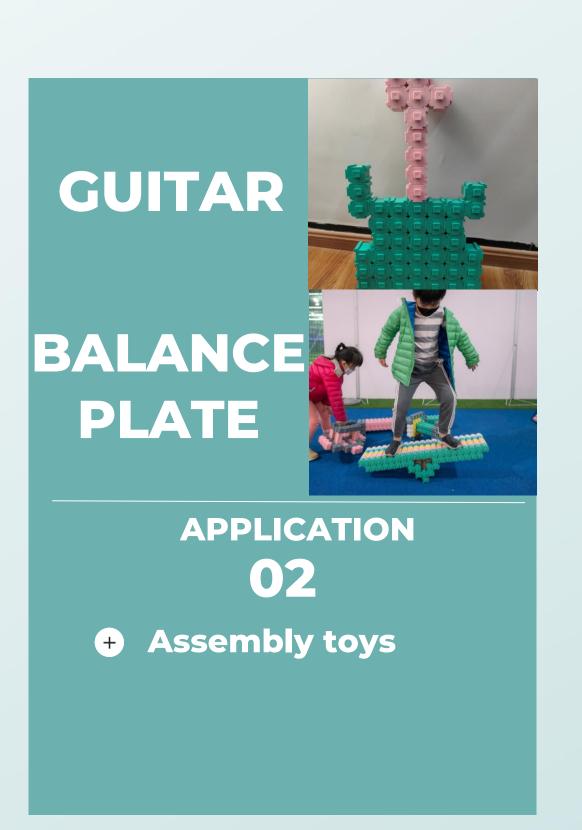
The utilization of waste products

**Biodegradation** 

### WIDELY APPLICABLE ACROSS VARIOUS FIELDS

Application







## PRODUCT VALUE

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Value



#### **Educational Merit**

Our building blocks nurture creativity and hand-eye coordination, encourage teamwork, instill patience and resilience, and fully unlock a child's inherent potential.



#### **Ecological Significance**

Our products, made from recycled agricultural waste, not only minimize resource depletion but also contribute to achieving dual-carbon objectives.



#### **Societal Impact**

The joy of playing with these building blocks bridges bonds between children and parents, paving the way for a more connected and progressive society.



#### **Value of Innovation**

Going beyond traditional building blocks, our version boasts a range of distinctive benefits. Tailored to meet the diverse needs of every age bracket, they stand out as multifaceted, practical tools for both play and education.

## WE LEAD IN INTELLECTUAL EDUCATION

Riven by love,
We aim to offer
High-quality
companionship
to children



Thank You

For Your Watching

