

# Little SCRIBBLER'S

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## Technical Documentation Report

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# 01 The Problem

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The primary challenge in current primary education is rigid, traditional classroom layouts that hinder adaptability for both students and teachers. Fixed designs impede **effective engagement, limit innovative teaching, and compromise modern instructional standards**. The static nature of classrooms overlooks dynamic learner needs, hindering critical thinking development. Flexibility is not a preference but a necessity for cultivating adaptable, innovative minds for the challenges of the future.

# 02 Current Market

## Flexible Seating

Bean bags and floor cushions.  
Modular seating arrangements.  
Adjustable-height desks and tables.

## Collaborative Furniture

Collaborative tables with writable surfaces.  
Group seating arrangements to facilitate team-work.

## Mobile Furniture

Mobile desks and chairs for easy rearrangement.  
Portable whiteboards and teaching stations.

## Technology-Integrated Furniture

Interactive display boards.  
Charging stations integrated into desks.  
Furniture designed for easy technology integration.

## Versatile Storage Solutions

Storage units with flexible configurations.  
Mobile storage carts for easy reorganization.

## Adaptable Learning Stations

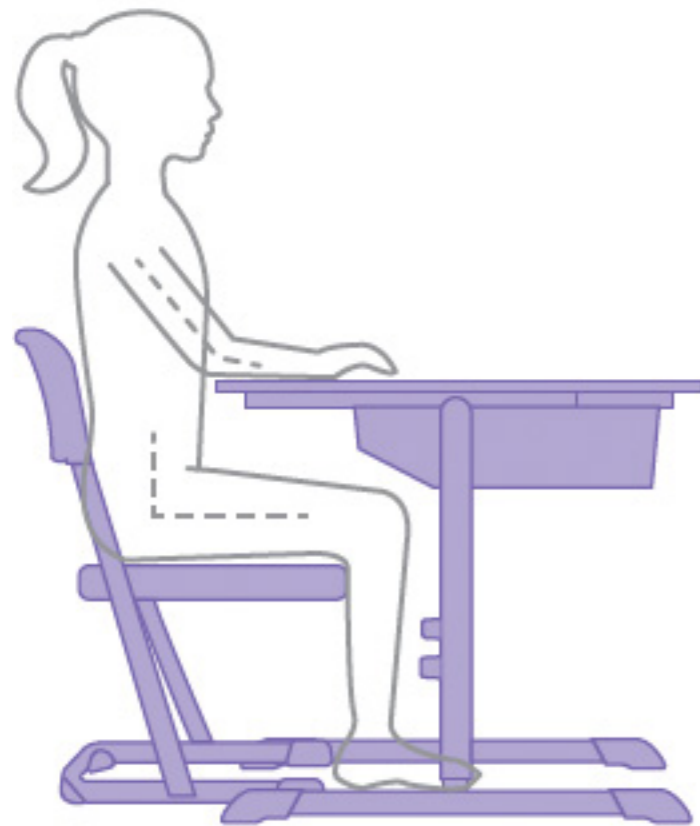
Learning stations with adjustable configurations.  
Furniture designed for quick transitions between activities.



# 03 Ergonomics

## Ergonomic Considerations

Emphasizing the significance of ergonomics, our stool design prioritizes the comfort and well-being of Year 2 and 3 students. Tailored to meet their specific needs, the stool's total height, meticulously calculated based on ergonomic standards, averages around 350mm. This deliberate approach ensures optimal seating comfort for users within these year levels, promoting a supportive and conducive learning environment.



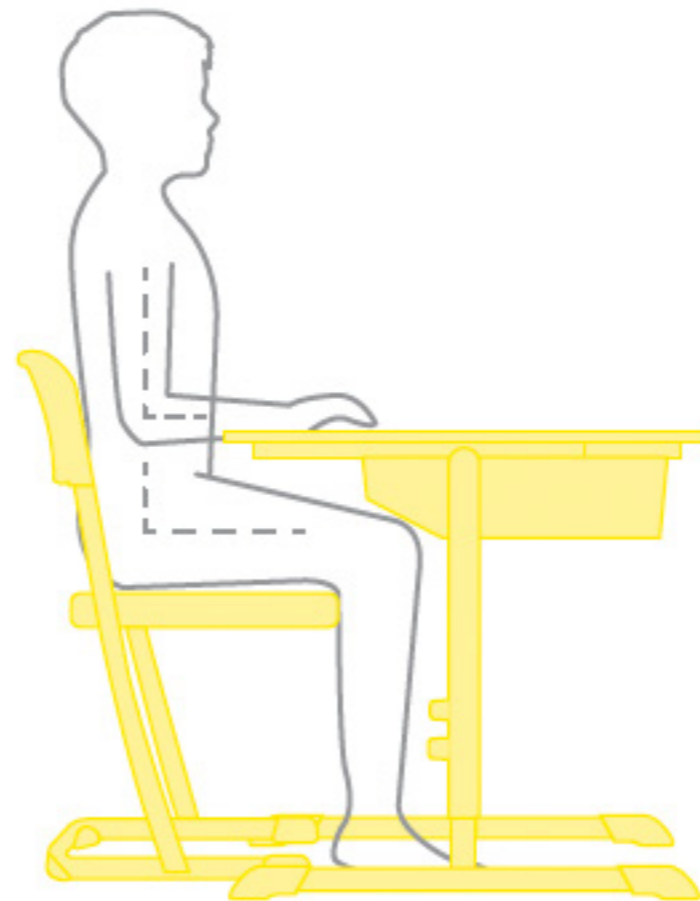
**Pre School and Prep**

Chair Height

300

Desk Height

525



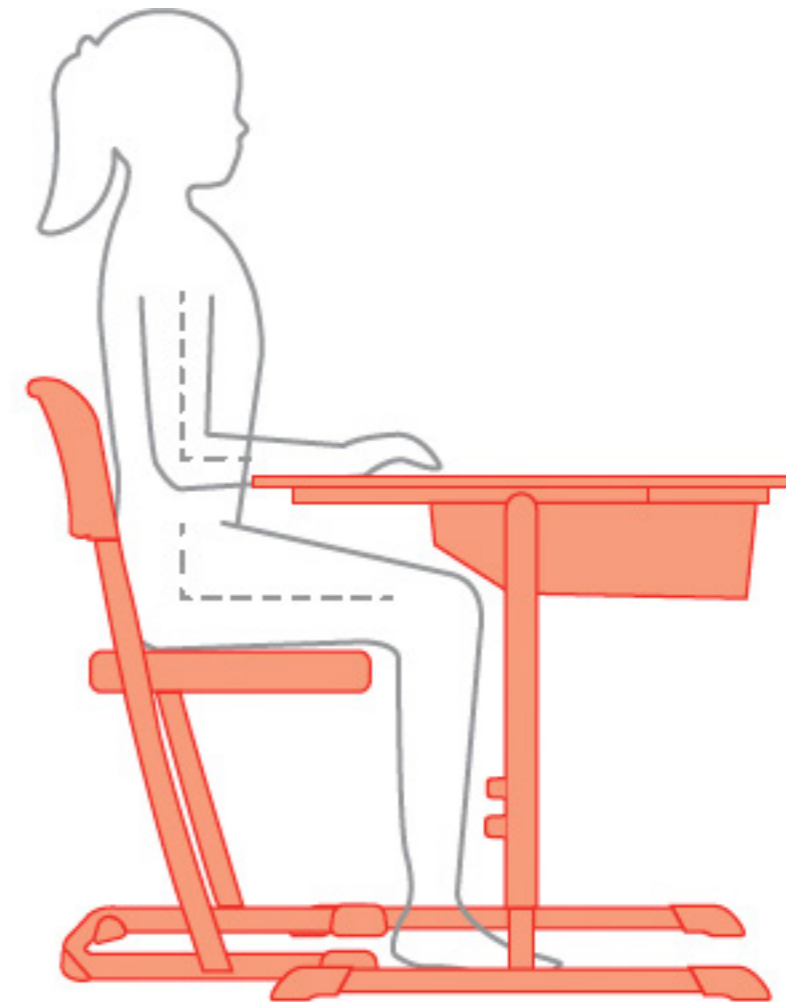
**Prep and Years 1 and 2**

Chair Height

340

Desk Height

580



**Years 3 and 4**

Chair Height

380

Desk Height

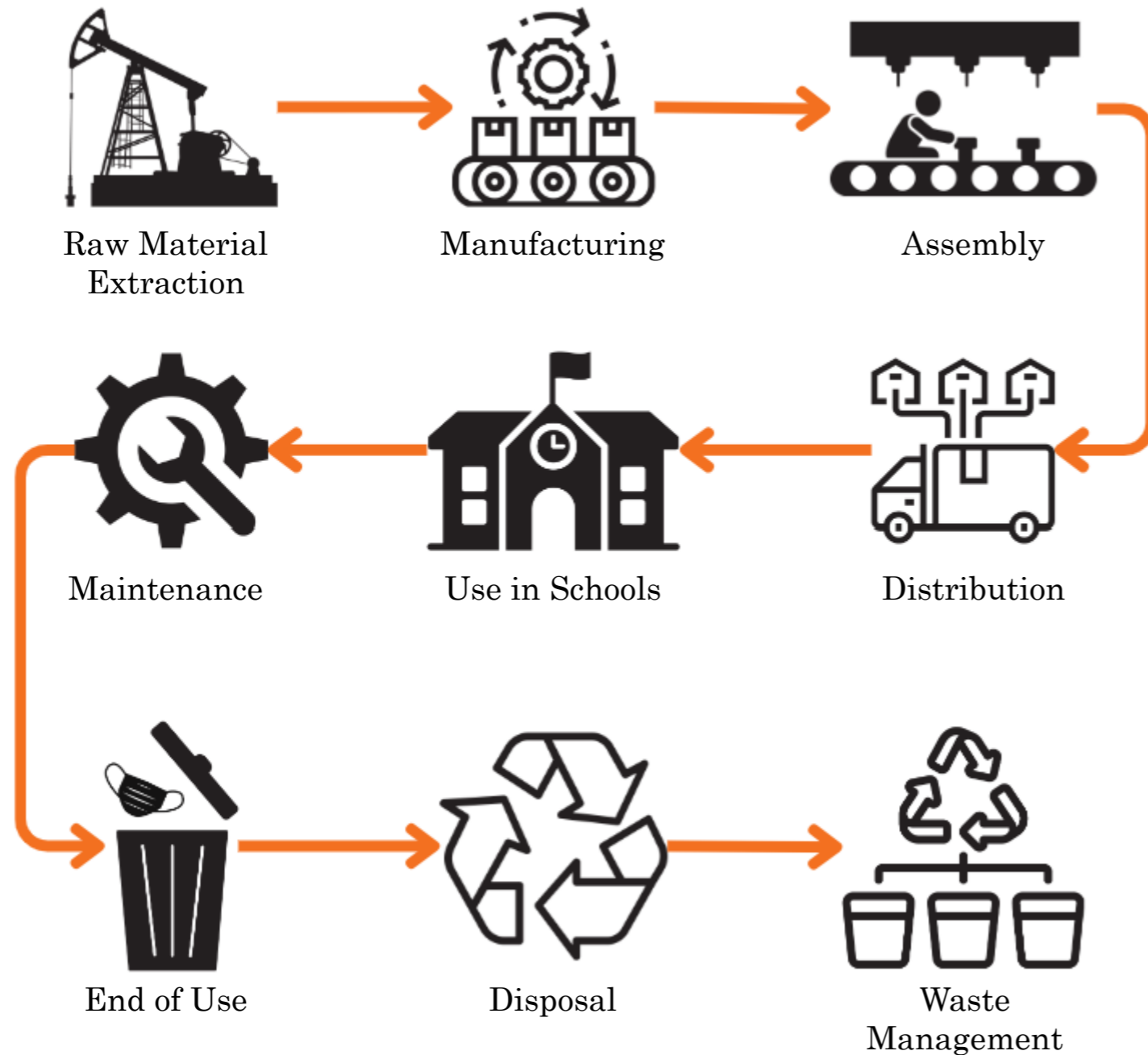
635

# 04 Product Lifecycle



## Standard Product Lifecycle

Bellow is a simplified lifecycle process of the current primary school chairs used in schools.



## What changes with Little Scribbler's

Little Scribbler's is more than just a typical stool that students sit on. It's goal is to be useful in any style of learning and adapt to both the student and teachers needs.



## Main Chalkboard Surface

- Enhances interactivity when tasked with collaborative work

## Portable Chalkboard Surface

- Flexibility in learning styles

## Removable Cushion

- Improves both comfort and hygiene

## Stackable Feature

- Improves space optimisation

## Sotrage Compartment

- Improves organisation and accessibility

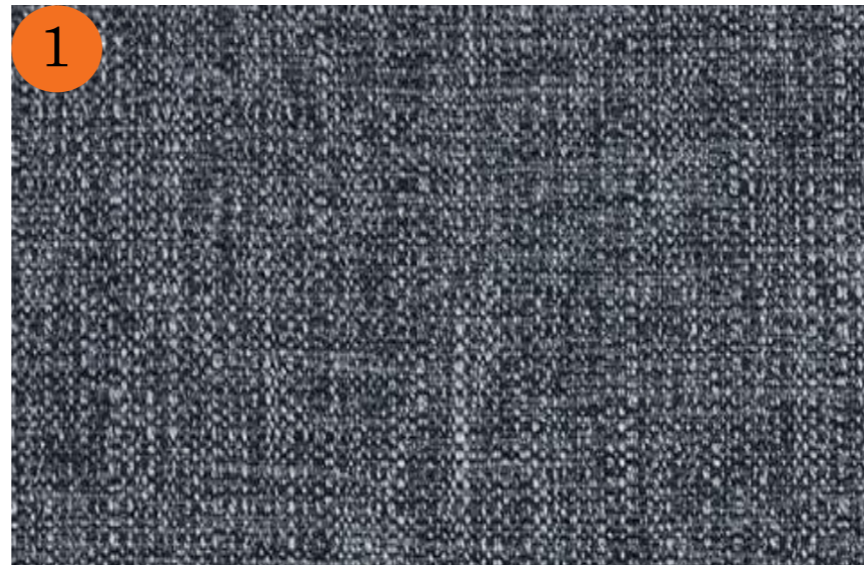
## Benefits for the Students

- Enhanced Learning Experience
- Comfort and Hygiene

## Benefits for the Teachers

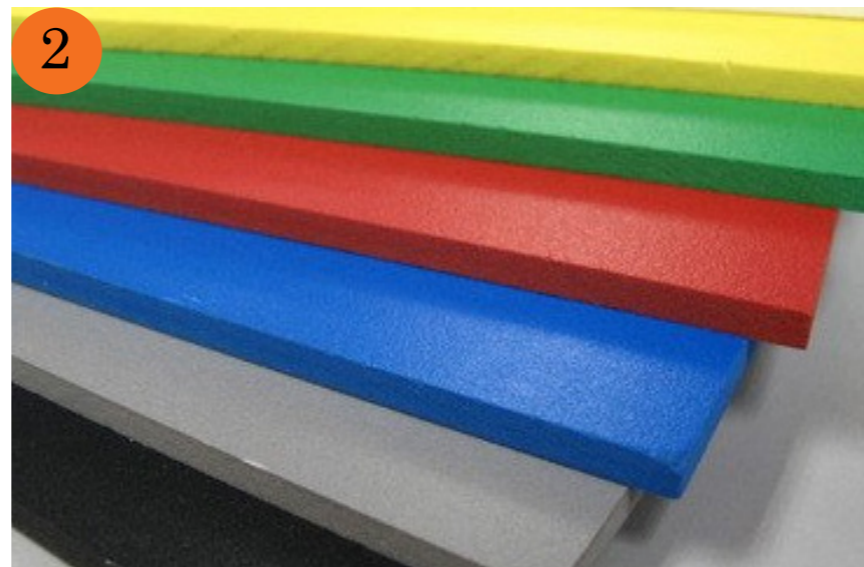
- Space Management
- Organisation

# 05 Material Benefits



## Polyester Upholstery Fabric Benefits

- Durability
- Stain Resistance
- Colour Retention
- Affordability
- Hypoallergenic
- Fade Resistance
- Wrinkle Resistance
- Comfort
- Low maintenance



## High-Density Polyethylene (HDPE) Benefits

- Safety
- Durability
- Easy to clean
- UV Resistance
- Lightweight
- Recyclable
- Colour Options
- Low Maintenance
- Smooth Edges



## Coloured Chalkboard Paint Benefits

- Creativity
- Personalisation
- Interactive Learning
- Versatility
- Easy Renewal
- Organisation
- Engaging Design
- Educational Tool
- Mess-Free Art

# 06 Manufacturing Process

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## Rotational Molding

Rotational molding is a manufacturing technique where plastic is heated in a rotating mold, creating hollow, seamless, and durable products with consistent material thickness.

## Possible Rotomold Companies



## Design Flexibility

Description: Rotational molding allows for intricate and unconventional shapes, making it ideal for crafting the distinct D-shaped form of the stool.

Benefit: Enables innovative and unique designs, contributing to the overall functionality and aesthetic appeal of the stool.

## Hollow Construction

Description: Rotomolding involves creating hollow structures seamlessly, aligning perfectly with the design of your stool, which has a center compartment.

Benefit: Lightweight yet durable construction, promoting easy mobility and handling for students while maintaining structural integrity.

## Material Uniformity

Description: The rotational molding process ensures uniform distribution of HDPE plastic, resulting in consistent thickness throughout the stool.

Benefit: Enhances structural strength, durability, and overall quality of the stool, critical for withstanding the demands of a classroom setting.

## Cost-Effective Production

Description: Rotomolding is efficient for large-scale production, reducing per-unit costs, especially when manufacturing stackable stools for classrooms.

Benefit: Cost-effectiveness supports affordability and scalability, making the stool accessible for educational institutions with varying budgets.

## Seamless Integration of Components

Description: The rotational molding process allows for the integration of various components, such as the removable cushion and storage compartment, during the molding stage.

Benefit: Ensures a seamless and sturdy design, eliminating the need for additional assembly steps, reducing potential weak points, and improving overall durability.

## Durability and Impact Resistance

Description: HDPE plastic, commonly used in rotational molding, is known for its durability and impact resistance.

Benefit: Provides a robust and resilient stool, capable of withstanding the dynamic and sometimes rigorous environment of a classroom.

## Environmental Considerations

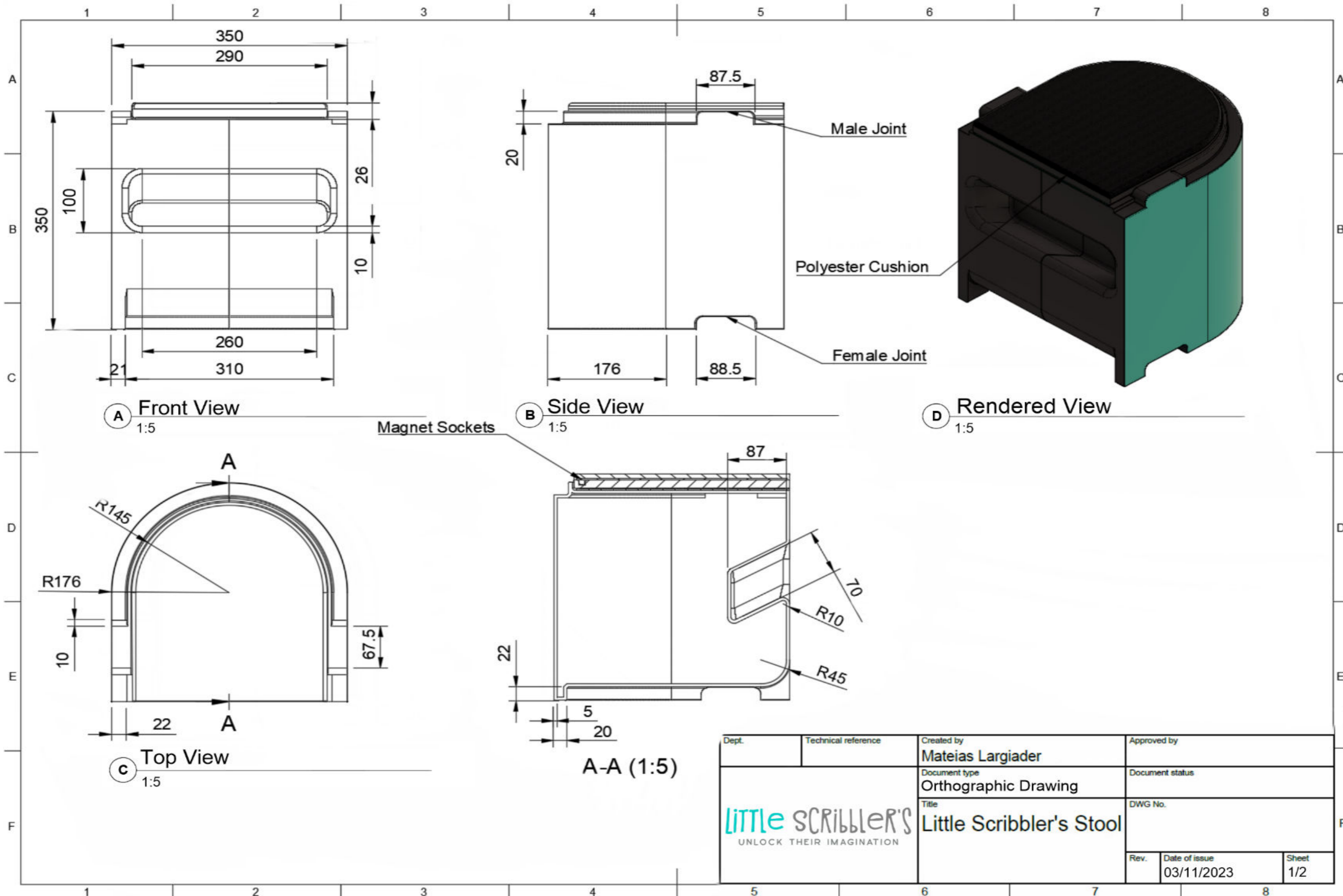
Description: HDPE is recyclable, aligning with environmental sustainability goals.

Benefit: Supports eco-friendly manufacturing practices and end-of-life disposal options, contributing to a more environmentally conscious product.



# 07 Technical Drawings

## Orthographic Drawing



Dept.	Technical reference	Created by <b>Mateias Largiader</b>	Approved by
		Document type Orthographic Drawing	Document status
		Title Little Scribbler's Stool	DWG No.
Rev.	Date of issue 03/11/2023	Sheet 1/2	

# 07 Technical Drawings

## Exploded View & B.O.M Drawing

Parts List				
Item	Qty	Part Number	Description	Material
1	1	Main Frame	Manufactured as one hollow peice by using rotational molding - custom made	Polyethylene, High Density
2	1	Large Chalkboard Surface	Standard coloured chalkboard paint - off the shelf	Chalkboard, Paint, Matte
3	1	Cushion Fabric	Waterproof polyester - off the shelf	Fabric
4	1	Cushion Frame	Manufactured as one peice by using rotational molding - custom made	Polyethylene, High Density
5	5	Magnets	Standard magnets - off the shelf	Steel
6	1	Steel Plate	Sourced from rotational molding manufacturer - custom made	Steel, Galvanized
7	1	Portable Chalkboard surface	Standard coloured chalkboard paint - off the shelf	Chalkboard, Paint, Matte
8	1	Large Aluminum Plate	Sourced from rotational molding manufacturer - custom made	Aluminum 6063
9	1	Small Aluminum Plate	Sourced from rotational molding manufacturer - custom made	Aluminum 6063

Dept.	Technical reference	Created by <b>Mateias Largiader</b>	Approved by
		Document type Exploded View & B.O.M	Document status
		Title <b>Little Scribbler's Stool</b>	DWG No.
Rev.	Date of issue 03/11/2023	Sheet 2/2	

**Exploded View**  
1:4

# 08 Renderings

Exploded View Render



# 08 Renderings

## Exploded View Render

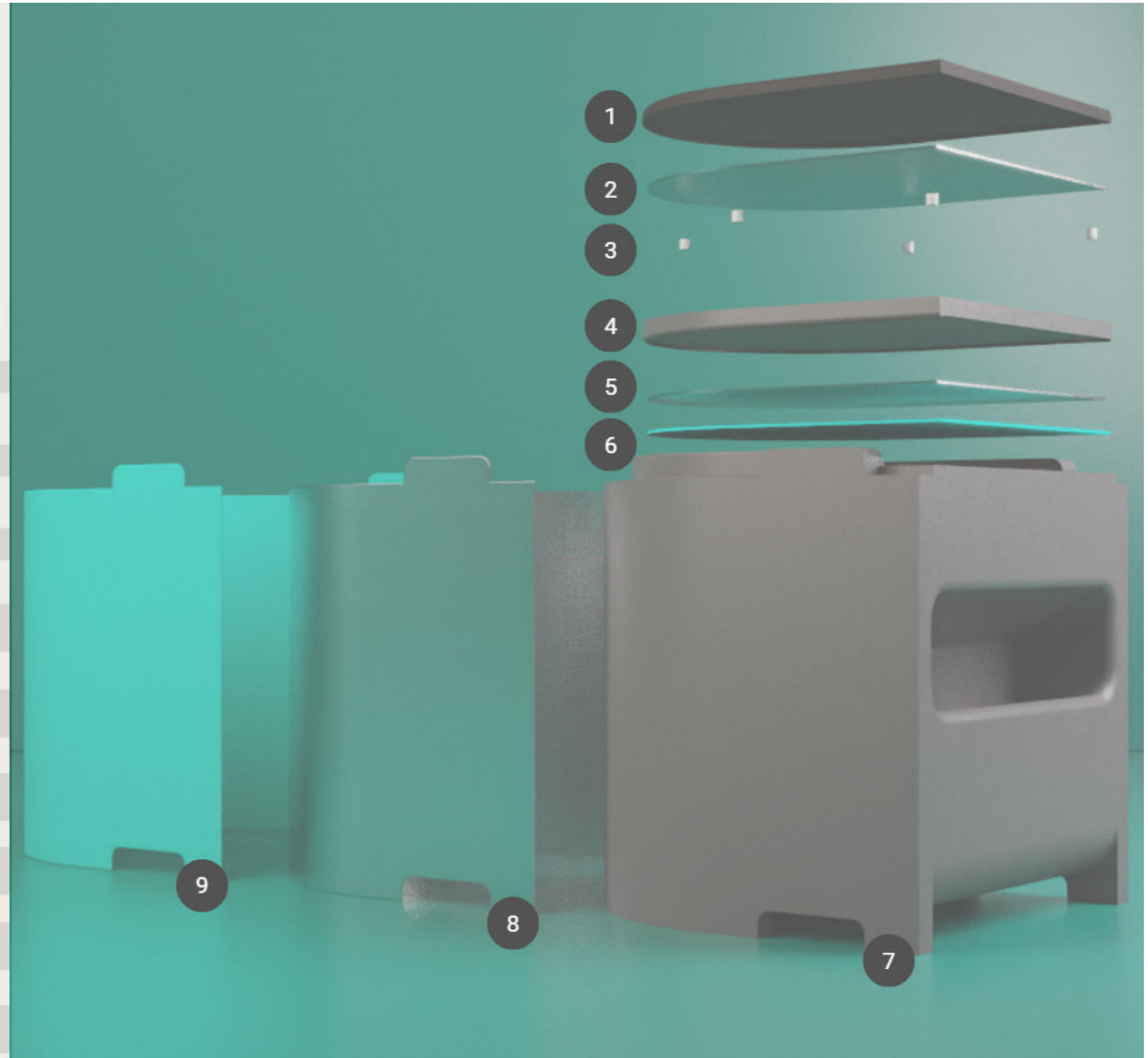
### Manufacturing Technique

#### Rotational Molding

##### Note

Both aluminum plates are attached to the HDPE frames by using high-quality two-part epoxy to secure a strong and durable bond with the plastic.

	Components	Materials	Finish
1	Cushion	Polyester Fabric	Dark Grey
2	Steel Plate	Galvanised Steel	Shiny Metallic
3	Magnets	Iron	
4	Cushion Frame	High-Density Polyethylene (HDPE)	Matte Grey
5	Aluminum Plate	6063 Aluminum	Natural mill finish
6	Secondary Chalkboard Surface	Chalkboard Paint	Textured Matte
7	Frame	High-Density Polyethylene (HDPE)	Matte Grey
8	Aluminum Plate	6063 Aluminum	Natural mill finish
9	Primary Chalkboard Surface	Chalkboard Paint	Textured Matte



# 08 Renderings

Hero Render of Little Scribbler's



# 08 Renderings

Little Scribbler's Colour Collection



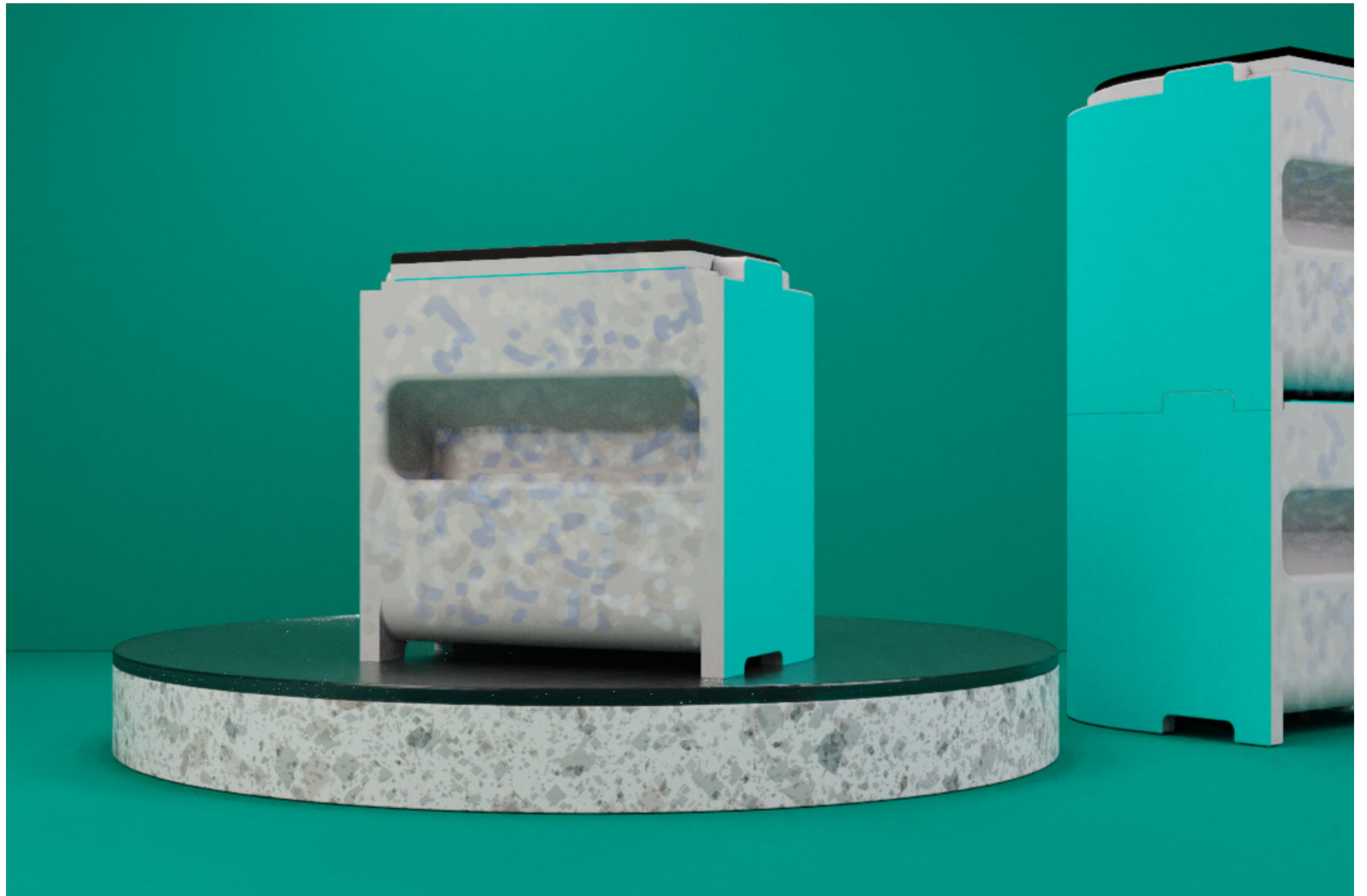
# 08 Renderings

Little Scribbler's Colour Range Names



# 08 Renderings

Recycled HDPE Plastic Range





# 09 Product in Use

## Little Scribblers in Context



# 09 Product in Use

Little Scribbler's How to Use

