Strawbees®

SUSTAINABILITY STATION

ONBOARDING

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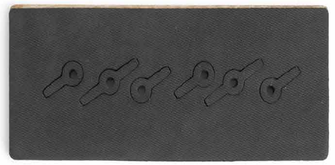
classroom.strawbees.com

WELCOME TO SUSTAINABILITY STATION ONBOARDING

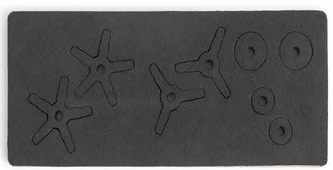
You will learn how to:

- Materials you can cut
- Understanding plastic recycling symbols
- Material preparation
- How to cut connectors
- Storage and care

You will need:



Cutting Dies

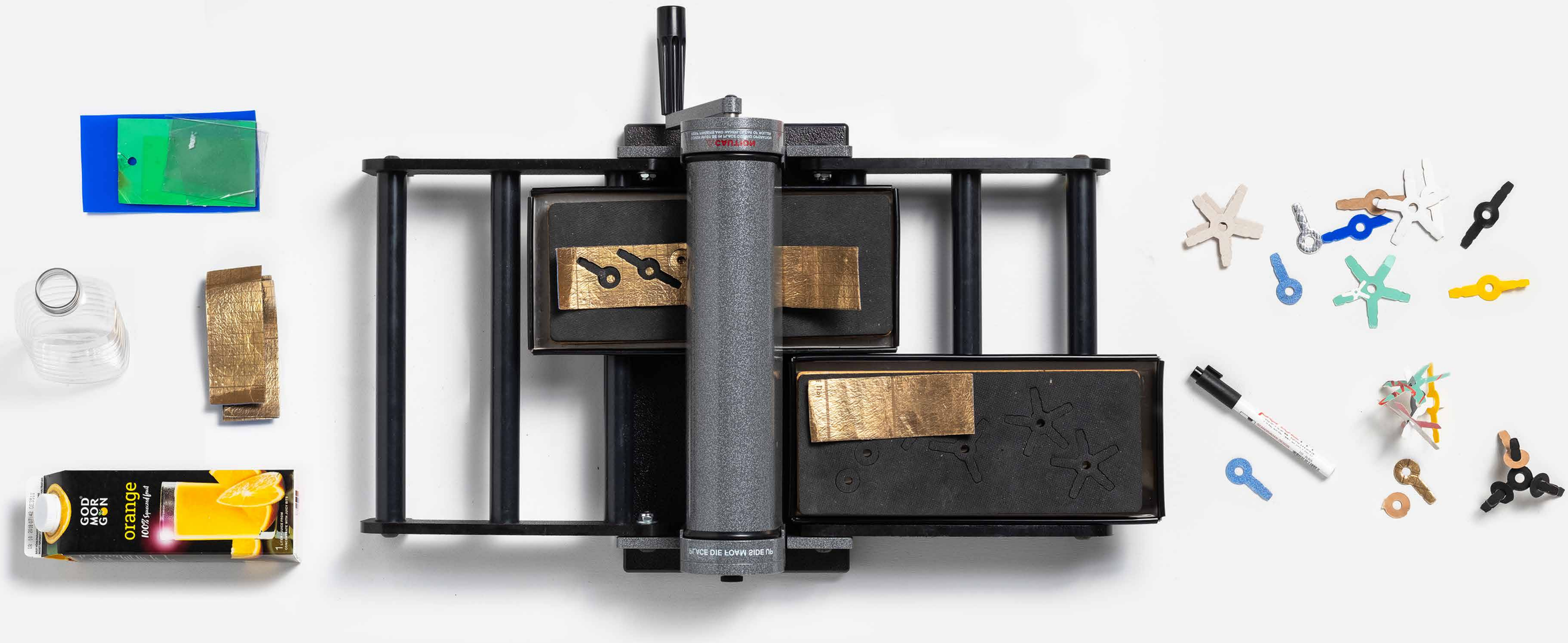


Tray

Sustainability Station

Guard

Scissors



The Sustainability Station is a die-cutting machine that is operated by hand to manufacture a large amount amount of connectors cut from collected, upcycled materials.

MATERIALS YOU CAN CUT

Die cutting refers to the process in which you use a machine and a die to cut out multiples of the same shape.

You can create the same shape over and over out of multiple materials without using scissors, a craft knife or any other means to cut them out. It saves you time and makes your shapes look nicer.

Materials You Can Cut

Plastic

Paper

Cardboard

Thin Balsa Wood

Liquid Cartons (Plastic, Paper, and Cardboard mix)

Thin Cork Sheets

Fabric and Felt

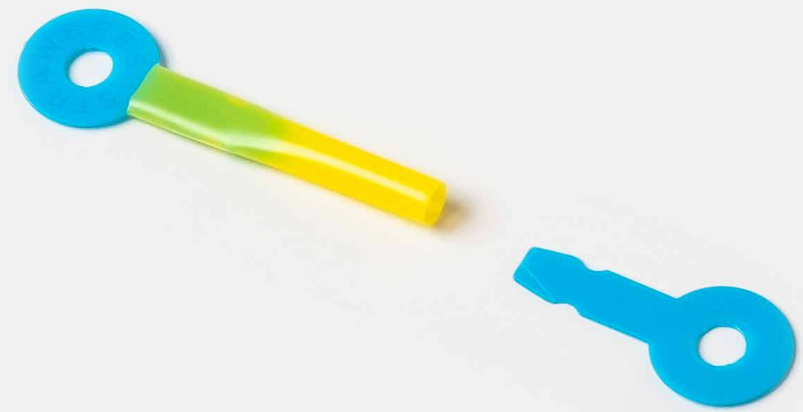
Aluminium foil

No Metal

UNDERSTANDING PLASTIC RECYCLING SYMBOLS

There are many many types of plastic in the world! Typically there is a recycling code to label the type on the container.

The plastic connectors and straws in all building kits are made of **5 - Polypropylene (PP)**.



We use this plastic because of the flexibility when you bend the connectors over and over meaning they don’t break!

Suggested Material

SUGGESTED MATERIAL TO START

Some plastics are better than others for making connectors. Here is a small guide with suggestions.

Symbol	Polymer Name	Examples	Avoid	Okay	Best
1 PETE	Polyethylene Terephthalate (PETE or PET)	• Soft drink bottles • Water bottles • Sports drink bottles • Salad dressing bottles • Vegetable oil bottles		1	
2 HDPE	High-density Polyethylene (HDPE)	• Milk jugs • Juice bottles • Yogurt tubs • Butter tubs • Cereal box Liners			2
3 V	Polyvinyl Chloride (PVC or V)	• Clear food packaging • Wire/cable insulation • Flooring	3		
4 LDPE	Low-density Polyethylene (LDPE)	• Dry cleaning bags • Bread bags • Frozen food bags • Squeezable bottles			4
5 PP	Polypropylene (PP)	• Ketchup bottles • Shampoo Bottles • Syrup bottles • Bottle caps • Straws			5
6 PS	Polystyrene (PS)	• Disposable plates • Meat trays • Styrofoam egg cartons	6		
7 OTHER	Other Plastics (OTHER or O)	• Citrus juice bottles • Plastic lumber • Headlight lenses • Safety glasses	7	7	7

* You will have to experiment with the different types of plastic, since some are more suitable than others

Reference: Recycling Codes. https://en.wikipedia.org/wiki/Recycling_codes

MATERIAL PREPARATION

For Plastics and Liquid Cartons

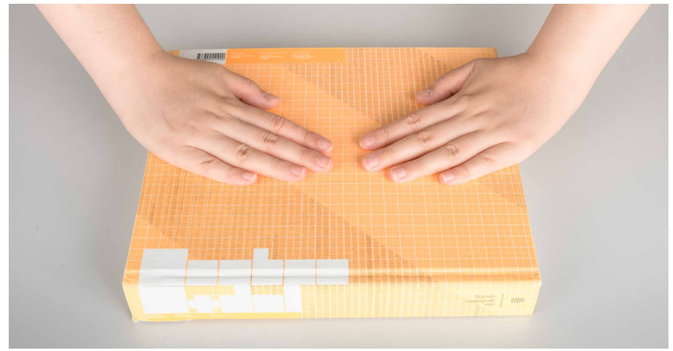
1. Peel off stickers.

2. Wash with soapy water and let it dry.

For All Materials

1. Cut materials into sheets.

2. If the sheet is curling flatten under a heavy book first.



3. The dies cut with the foam face up in the station, so it’s easy to see what you’re cutting.

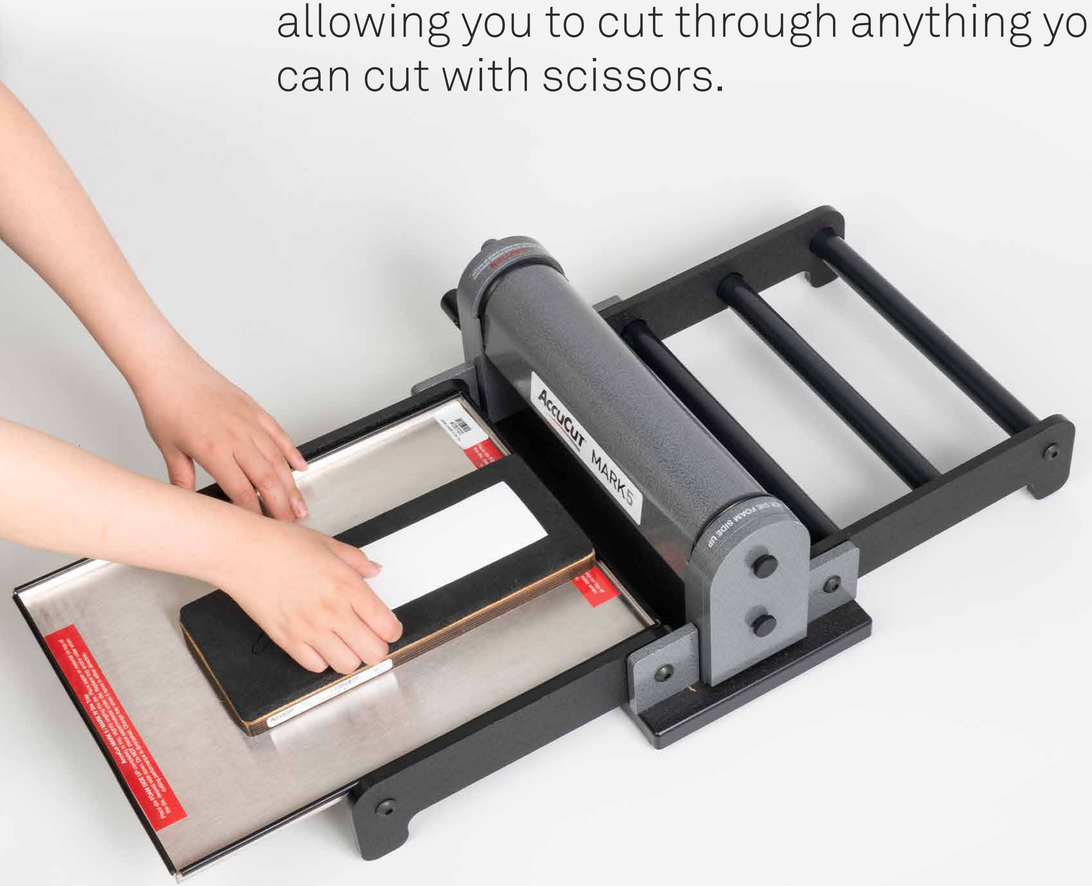
HOW TO CUT CONNECTORS

1 Place the shield on the roller of the station acting as a finger guard when pushing the die through.

2 Place tray one side of the station.

HOW TO CUT CONNECTORS

3 Turn the handle while pushing the back of the tray until it catches on the roller. The pressure is pre-set with the rolling action of the machine combined with a steel die allowing you to cut through anything you can cut with scissors.



4 When finished cutting remove the tray with die. Lift the guard from the station and lightly sweep the debris from the roller. This prevents the debris from building up between cuts.

STORAGE AND CARE

Station Storage

When finished cutting remove the tray with the die. Lift the guard from the station and lightly sweep the debris from the roller. This prevents the debris from building up between cuts.

Fold up the sides of the station.

STORAGE AND CARE

Die Storage

The steel blades on the dies are protected by foam that helps to eject the connector shapes cut from the die.

When not in use the blades of the dies need to be protected to stay sharp in-between uses.

1 Place a sheet of cardboard on top of the blades.

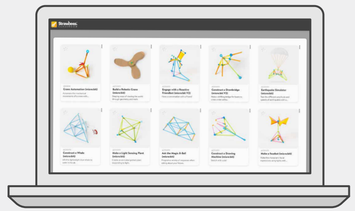
2 Stack and store with blades up.

GRADUATED!

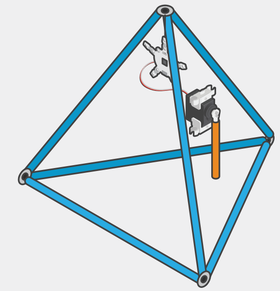
Now you know more about:

- Materials you can cut
- Understanding plastic recycling symbols
- Material preparation
- How to cut connectors
- Storage and care

Next steps:



Pick an Activity from the Strawbees Classroom and recreate from found materials



Make connectors from paper, plastic, and wood and try to see what works best in a robotics project

For more information about the Sustainability Station, please visit:
classroom.strawbees.com/page/sustainability-station