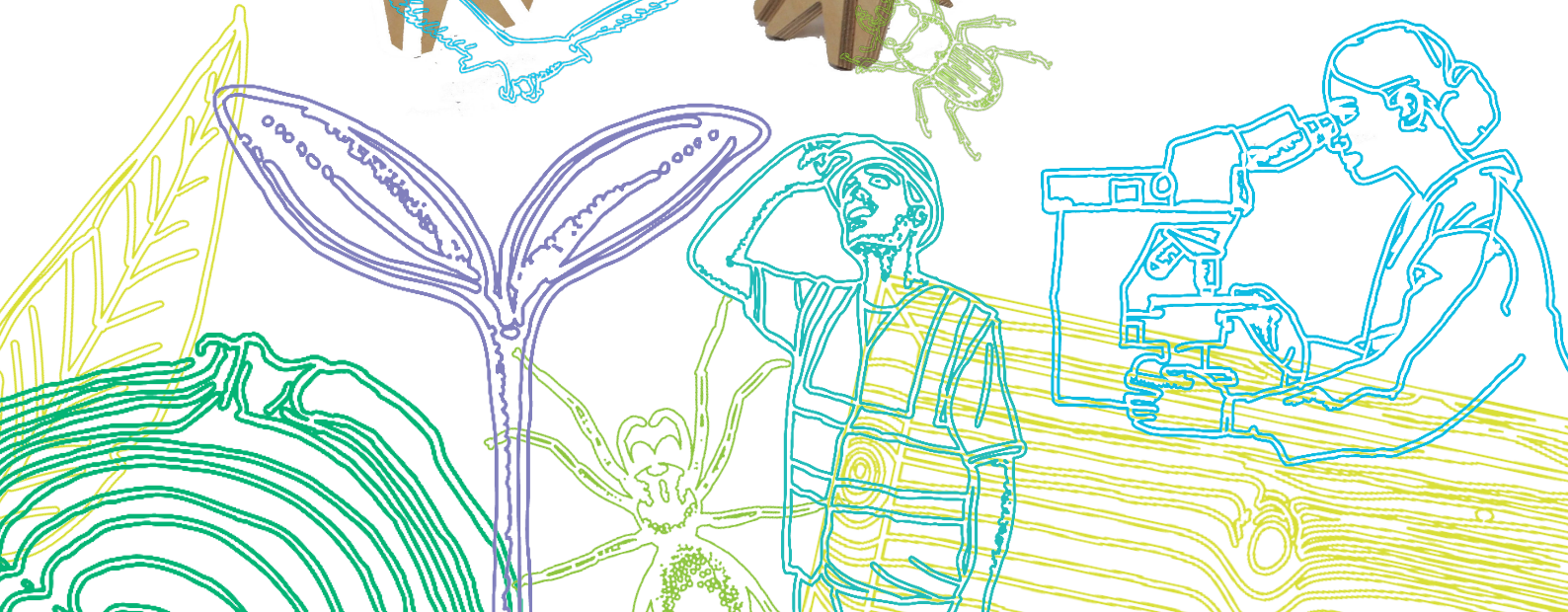
Design and Make

Interlocking Pieces



Interlocking pieces

Design and Make

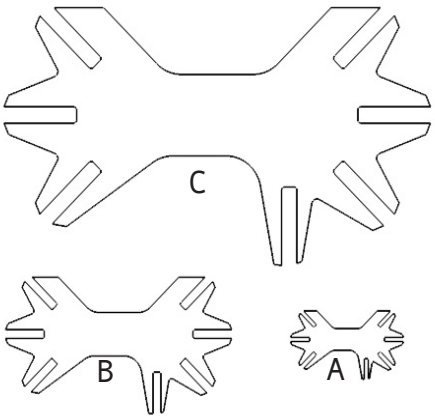
How it works:

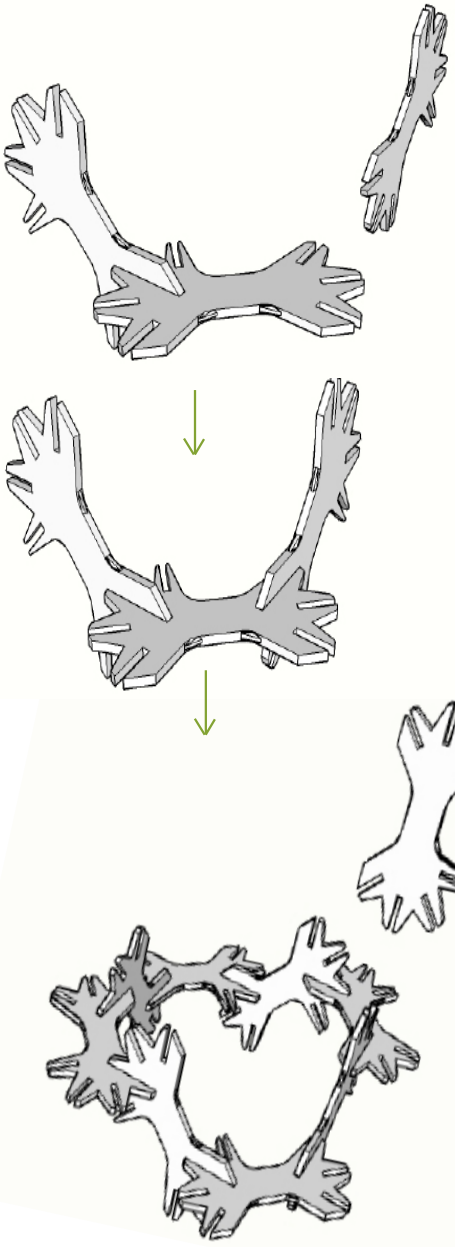
The interlocking pieces kit includes three different sized pieces that can be used independently with the corresponding size or can be used in conjunction with the other available sizes to add complexity to the overall structure.

Shape A: x 120 (3.5mm)

Shape B: x 200 (6.5mm)

Shape C: x 24 (12.5mm)





Curriculum Links

Design and Make

Year 3/4

DESIGN AND TECHNOLOGY

- ACTDEK013 Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes
- ACTDEP018 Plan a sequence of production steps when making design solutions, both individually and collaboratively

HUMANITIES AND SOCIAL SCIENCE (HASS)

- ACHASSK090 The use and management of natural resources and waste and the different views on doing this sustainably
- ACHASSI058/79 Draw simple conclusions based on analysis of information and data

Year 5/6

DESIGN AND TECHNOLOGY

- ACTDEP028 Develop project plans that include consideration of resources when making designed solutions individually and collaboratively
- ACTDEK023 Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their us

HUMANITIES AND SOCIAL SCIENCE (HASS)

- ACHASSI102 Work in groups to generate responses to issues and challenges

Suggested Activities

Design and Make

Tower Challenge

Materials:

- Half the components of the interlocking kit

Task:

- Students are required to use half of the components provided to create a self-supporting tower. The aim of this activity is to learn the capability of these shapes and their limits, while trying to create a tower as high as possible without it falling over.

Design Process:

Ask: Provide students the opportunity to experiment with the materials in a discovery phase to tune them in. Encourage students to explore ways of joining, connecting and assembling components. Develop a success criteria - students consider - What is the challenge? What is the ultimate goal?

Imagine: Students brainstorm ideas for their tower design and collaborate to develop a plan. Encourage students to consider possible challenges and solutions.

Plan: Students develop a visual plan of their tower design and consider how the interlocking pieces can be connected.

Create: Students collaborate to build their tower design. Students build and trial their tower plan.

Improve: Students evaluate how they can improve on their design. They might consider - How can we make our tower taller? How can we make our tower more stable?

Suggested Activities

Design and Make

Fractal Relationships

Materials:

- Kit contents

Task

Within nature everything can be replicated through a process of fractals. Using shapes of all sizes students are required to create an object that starts from shape size 'C' and progressively gets smaller finishing on the use of shape size 'A'.

Fast Fact: Fractals can be found all around us. They are a complex and repeating geometric pattern. Each smaller part of the structure is similar across different scales.

Design Process:

Ask: - Explore the concept of fractals with students. Consider - What is a fractal? Where might you see fractals in nature? (Image provocations provided)Why are fractals useful? Watch this video to find out more: https://www.youtube.com/watch?v=5oif7ESfCvQ
- Provide students the opportunity to experiment with the materials in a discovery phase to tune them in. Encourage students to explore ways of joining, connecting and assembling components. How can the interlocking pieces be fractal?

Imagine: Students brainstorm ideas for representing the fractal relationship of the interlocking pieces.

Plan: Students develop a visual plan of their fractal representation.

Create: Students collaborate to build their design.

Improve: Students evaluate their design and consider how it might be improved.