

**Making - Learning using Tools and Equipment**

FPT – Focussed Practical Task	This is a small practical investigation mini focus on an aspect of your design. E.g. structuring a join or making a fastening
User of Ramin	5mm squared wooden rod to make the framework of the chassis*
Use of coping saws	To cut Ramin safely and with precision to ensure accuracy. Blades may break and you will be taught how to replace them carefully.
Use of glue guns	Glue guns will bond your materials instantly because the hot glue they produce solidifies at room temperature.
Building the chassis*	This is the wooden framework, an underframe to attach your axle supports, axle & wheels to. You will use the <b>glue gun</b> to do this.
Attaching the wheels to the axle	You will use a <b>ruler</b> to accurately measure out the length of axle to be able to cut to the length advised.
The cab of your vehicle	Your recycled packaging will determine the outcome.

**Research, Designing & Planning**

Kolb's Learning Cycle (below left)	Use this cycle to help you to continuously improve your design ideas and refine them until you have a successful outcome within the time constraints of the project.
Design Brief	Read through the design brief thoroughly to ensure you understand the guidance and instructions of the project
Technical Drawing	The construction plan model of the basic concept/idea of the vehicle. This will give you a sense of structure and scale.
Prototypes and Mock-ups	These will allow you to trial and test your ideas as you progress to find the most efficient construction methods for your design (see the blue circle in Kolb's Learning Cycle below)

**Cross Curricular Opportunities**

Maths	Measuring and marking out materials accurately, length/area/perimeter for cutting/construction precision
Art	Presentation and drafting skills, creative and aesthetically pleasing ideas
Science	Material properties and limitations, affects of physical manipulation, setting up a test/enquiries/evidencing.
PSHE & Values	Co-operation & collaboration, perseverance, resourcefulness, unity, patience

**Key Technical Vocabulary-Glossary**

<b>Orthographic</b>	Design using precision technical drawing skills e.g. rulers/measuring/scale
<b>Traction</b>	The grip/hold your vehicle should have on the surface it travels along
<b>Chassis</b>	The wooden load-bearing framework of your vehicle/the undercarriage
<b>Axle</b>	Wooden rod/doweling that you will thread on to your wheels
<b>Doweling</b>	lengths of wooden rod for the axles, which will support the wheels
<b>Reinforce</b>	to strengthen and support
<b>Ramin</b>	long cuboid shaped pieces of birch rod
<b>Axle Supports</b>	To thread the axle rod through so that the wheels can spin.
<b>Prototype or Mock-up</b>	A model to demonstrate how your finished design might look or function

**Why are we learning this?**

**To know how to:** create a basic design construction and develop it into a functioning and useable product.

**Why is it important?**

**So that we understand how to:** Develop our 3D design and making skills. To practise using more sophisticated tools and equipment in readiness for KS3 Design & Technology at secondary level.

