

UKS2 Prototypes- Greenhouses

Key Vocabulary

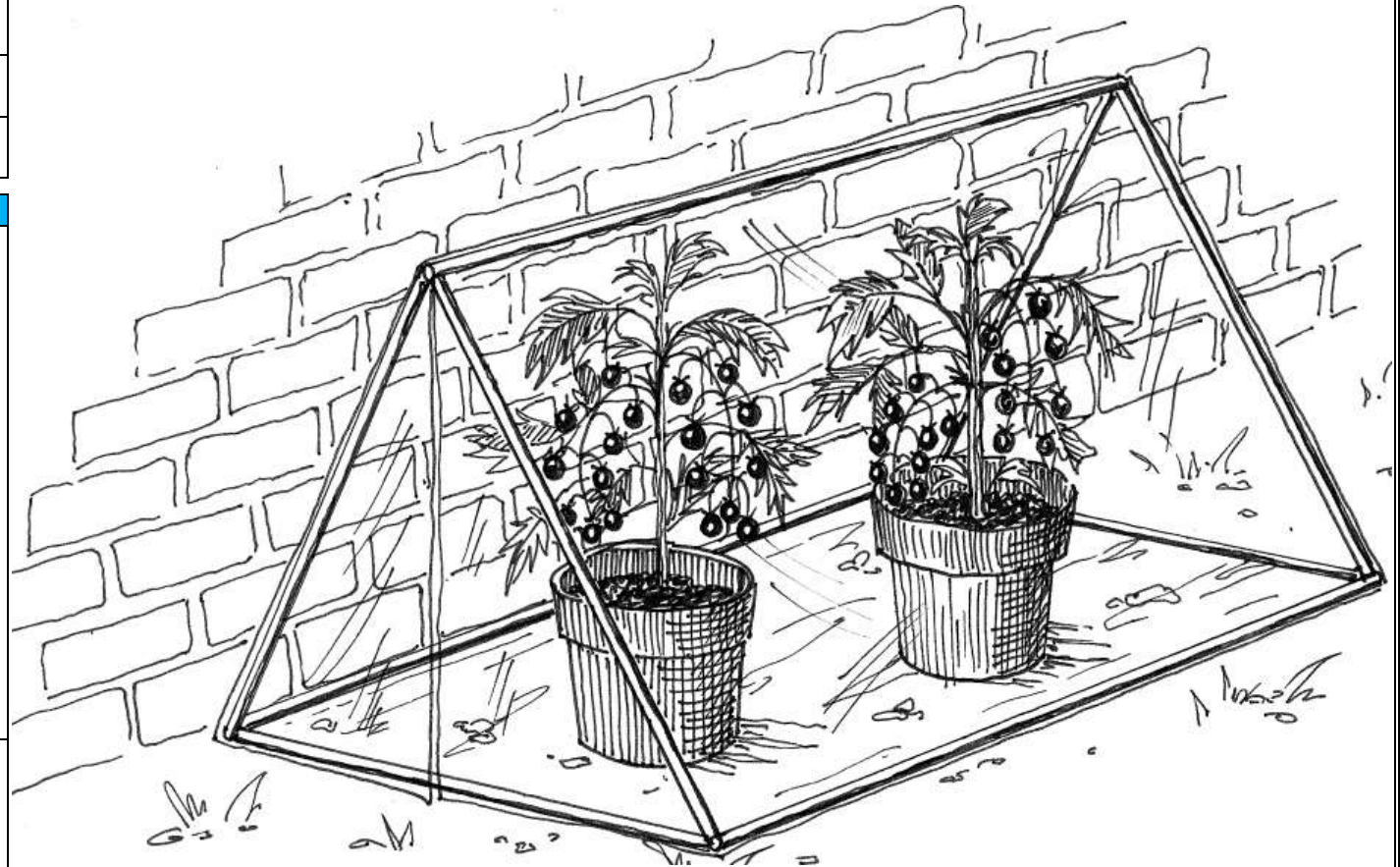
Model	A representation of a real object.
User	The person using the end product.
Aesthetics	What something looks like.
Purpose	The reason why something is made and how this changes depending on who it is created for.
Strong	A structure that can support itself.
Sturdy	Strongly and solidly built.
Airtight	Not allowing air to escape or pass through.
Durable	Resistant to different forms of adverse weather.
Lightweight	A thing that is lightly built or constructed.

Research

Testing	<p>You will need to test different materials to investigate which is the most appropriate in being water resistant, sturdy but can also let in ample amounts of light</p> <p><i>Water resistant</i> To test: Cotton- Would provide greater warmth. Hessian- A strong and heavy material. Plastic Sheeting- Allows light in.</p> <p><i>Sturdy</i> To test: Steel poles – heavy and strong. Plastic Poles (used in tents)- easy to move. Bamboo sticks- a combination of the two.</p>
Key Research Questions	<p>How does design affect the effectiveness of a greenhouse ?</p> <p>Do greenhouses need to be airtight?</p> <p>How effective are greenhouses compared to smaller ones?</p>

The Project

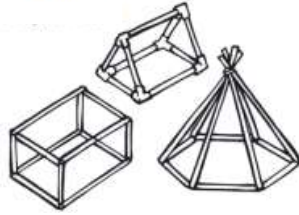
Intro	This project builds on your previous learning on greenhouses and prototyping to know make the prototype into a reality.
Purpose of Project	In teams to design, make a prototype of and then build a greenhouse that can protect at least 3 potted plants made by Year 1 and 2. These plants need to grow as they will be used for cookery in the Summer terms.



Research

Designs

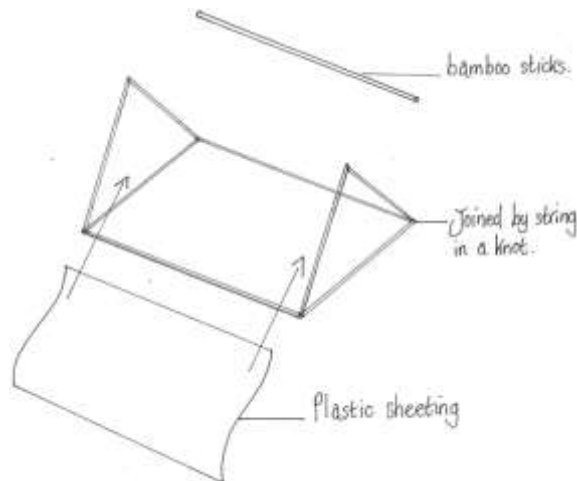
Refer back to your LKS2 knowledge organiser to revise effective greenhouse designs and draw a few different ideas that match the design criteria.



An exploded view drawing is a diagram, picture, or technical drawing of an object, that shows the relationship or order of assembly of various parts.

It is important when drawing an exploded view that all the parts line up with each other when disassembled. The vertical guidelines clearly show how the various parts are in line with each other. If an exploded drawing is constructed properly anyone looking at the drawing should be able to see how the various parts go together to form the finished design/object.

Exploded Diagrams

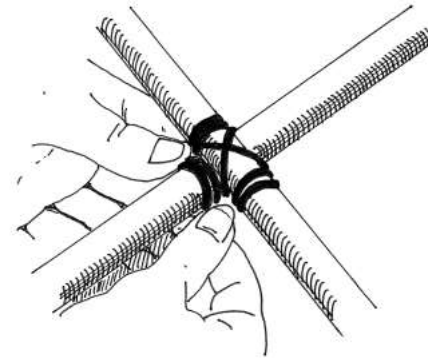
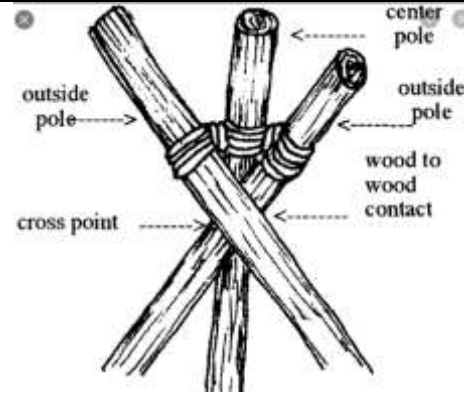


Make

Lashing

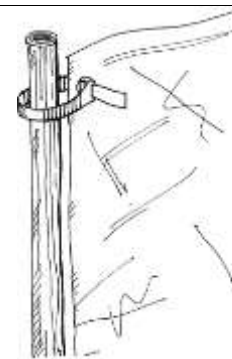
Explore a range of effective joining techniques or lashings, using string to effectively lash multiple bamboo sticks together, this includes tripod lashing and diagonal lashing.

Twist short end around long and wrap the rope around both poles, alternately going over and under each pole about three or four turns.



Attaching the Sheet

Measure, cut and attach sheets of plastic to the frame using a hole punch and cable ties.



Evaluate

You will Learn how to

- Investigate and evaluate a range of existing frame structures.
- Research key events and individuals relevant to frame structures.
- Think critically about your project against the design criteria.
- Ask a peer to give their reflection of the successes of your project, outlining one area to work on.
- Reflect on the problems you encountered and how you overcame them.
- Suggest how you could extend this project further if you were to do it again.