

Year group:
Year 4



Term: Autumn

Computing &
Construction

National Curriculum: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, pattern pieces and using CAD. Select from a wide range of tools and equipment to perform practical tasks, cutting, shaping, joining and finishing accurately. Select from a wider range of materials and components according to their functional properties and aesthetic qualities. Evaluate their ideas and products against their own design criteria.

Key Knowledge and skills

Control and monitor models using software designed for this purpose.

Choose suitable techniques to construct products or to repair items.

Strengthen materials using suitable techniques.

Use software to design and represent product designs.

Design with purpose by identifying opportunities to design.

Make products by working efficiently (such as carefully selecting materials).

Create a 3D net of their initial design using Tinkercad software.

Improve upon existing designs, giving reasons for choices.

Vocabulary

Construct	To make or build something.
3D net	a net is what a 3D (3-dimensional) shape would look like if it were opened flat.
Disassemble	To take something apart.
CAD	Computer-aided design is the use of computer software to help create, change and analyse designs.
Wattle and daub	A mixture of clay, soil, straw and manure that filled the posts with woven wood round them at the base of a roundhouse.
Framework	Structure that forms a support or frame for the house.
Reinforce	To strengthen by additional material or support.

Techniques: joining

Apply a small amount of PVA glue to the top of the wood.

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Glue the first triangle here.

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Carefully turn it over. Then glue the second triangle into place.

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Card triangle folded at right angle.

Support with card triangles.

Make a frame from tubes - make sure it is stable so that it won't fall over and so that it will keep its shape. Will it be tent shaped? Box shaped? Wigwam shaped?

fabric over a triangular frame

Make a pyramid from square section. To allow easy joining use a small cube piece in the centre. Attach opposite sides first.

Evaluate

How stable is your completed structure?

Could you reinforce the design in a different way? Using a different material?

What joins were the weakest and how could this be overcome?

How did you ensure your weaving was consistent?

Outcome

To create a roundhouse for an Iron Age village Chief with accompanying specifications and instructions to make it.

Design of a roundhouse and Tinkercad software

