

Ashtree Primary School and Nursery Medium Term Plan for DT

Year 5 – Construction – Making a bird house

Key Vocabulary: Hard/soft wood, hack saw, drill, frame structure, stiffen, strengthen, reinforce, stability, shape, join, temporary, permanent, frame structure.

Prior Knowledge: **Design & Evaluate:** Plan the main stages of making. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Skills:** Deconstruct and assemble the net of basic 3D shapes. Strengthen 2D frames by adding diagonal bracing struts. Make a rectangular frame from strip wood reinforcing with cross braces. Use materials to make simple joints - glue, tape and paper clips. Join 2D frames to create 3D structures. Create shell or frame structures, strengthen frames with diagonal struts. Make structures more stable by giving them a wide base. Prototype frame and shell structures. Measure and mark.

Knowledge: To know how to draw a net for basic 2D shapes. To know how to strengthen 2D frames.

Year 5

Skill: Create technical drawings or plans of their design, using accurate measurements and annotations. Use a range of tools and equipment, including saws, drills, and sandpaper, to shape and join materials to create their bird house. **Key Knowledge :** Know how to use a range of tools and equipment safely and correctly, including saws, drills, and sandpaper. Understand how to use and interpret technical drawings and plans to guide their making. Know how to apply a range of finishes and surface treatments to enhance the appearance and durability of their bird house.

National Curriculum

Design: 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 their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make:** select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials. **Evaluate:** investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.

KS2 Design and Technology National Curriculum

Develop design criteria to inform the design of their bird house. Use research such as examining existing bird houses, to inform their design ideas. Generate and develop design ideas, selecting the most appropriate one for their bird house. Evaluate their bird house, identifying areas of success and areas for improvement, and suggesting modifications to their design.

Step 1: To investigate the purpose and appearance of birdhouses

Step 2: To investigate the materials and features of bird houses. To explore drawing diagrams.

Step 3: To investigate and practise woodwork skills.

Step 4: To design a specific birdhouse.

Step 5/6: To make a birdhouse following a plan

Step 7: To evaluate, make predictions and promote a completed birdhouse

Curriculum Enhancements and Designers

Encourage children to research different types of birds and their nesting habits. They can analyse the features of different birdhouses to determine what makes an effective design. This can involve using online resources, books, and other materials to gather information.

Collaboration: Children can work in groups to design and build the birdhouse, which can promote collaboration and communication skills. Each group can be assigned a specific task, such as measuring, cutting, or decorating, and work together to create a cohesive final product.

Sustainability: Children can learn about sustainability by using recycled materials to build the birdhouse, such as repurposing old wood or using cardboard tubes. They can also learn about the importance of providing natural habitats for birds and how to make their birdhouse eco-friendly.

Problem-solving: Encourage children to use problem-solving skills by asking them to modify their designs if they encounter challenges during the building process. For example, if the roof of the birdhouse is too steep, they may need to adjust it to ensure that it is safe for birds.

Reflection: Encourage children to reflect on the process of designing and building the birdhouse, including what they learned, what they enjoyed, and what they would do differently next time. This can help to reinforce their learning and promote critical thinking skills.

See separate sheet for designers, key individuals and main events linked to bird houses.

Misconceptions

Underestimating the importance of accurate measurements and annotations in their technical drawing or plan. Children may assume that approximate measurements or rough sketches are sufficient, without realizing that accurate measurements and annotations are crucial for a successful build.

Overestimating their ability to use tools and equipment safely and correctly. Children may be tempted to skip safety precautions or rush through steps in order to get to the fun parts of the project. It is important to emphasize the importance of using tools and equipment safely and correctly to avoid injury or damage to the project. Assuming that applying finishes or surface treatments is unnecessary. Children may not see the value in adding finishes or treatments to their birdhouse, but these can help protect the wood from the elements and enhance its appearance. Focusing solely on aesthetics rather than functionality. Children may prioritize making their birdhouse look pretty over making it suitable for birds to inhabit. It is important to encourage children to consider the needs of the birds and create a functional birdhouse that meets those needs. Overlooking the importance of evaluating their birdhouse and making modifications. Children may assume that their first attempt will be perfect and not see the value in evaluating their work and making changes to improve it. It is important to encourage children to reflect on their work and identify areas for improvement, so that they can continue to develop their skills and create better projects in the future.

Suggested Activities

See separate sheet.

Curriculum links

Science: learning about the different types of birds that inhabit their local area and the features that make a suitable birdhouse. They can also learn about the life cycle of birds and how birdhouses can support their breeding and nesting. Children can learn about the importance of providing habitat and resources for wildlife in their local area. They can also learn about the impact of human activities on bird populations and ways to support conservation efforts.

Maths: practice measurement skills when designing and constructing a birdhouse. They can measure and calculate the dimensions needed for the birdhouse based on the size of the birds they are building it for.

Art: use their creativity to design the birdhouse and decorate it with different colours and patterns. They can also learn about different materials and textures to use in the birdhouse design.

This will lead children..

Children build on the skills and knowledge developed in earlier years to create more complex designs and use a wider range of tools and materials. They also learn to apply more advanced finishing techniques to their bird house, such as using different types of wood or adding decorative details. They can evaluate their bird house more critically, using more specific criteria to assess its effectiveness and identify areas for improvement.