

**St. Bridget’s C of E Primary Design and Technology Progression of Skills and Knowledge Overview**

*Inspiring, nurturing and educating our children to serve God by reaching their full potential, serving our local community and by looking after our environment as global citizens of today and tomorrow.*

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| **Year Group** | | **Electrical Systems**  **Year 4** | **Electrical Systems**  **Year 6** |
|  | | Torches | Steady Hand Game |
| Skills | Design | Designing a torch, giving consideration to the target audience and creating  both design and success criteria focusing on features of individual design  ideas. | Designing a steady hand game - identifying and naming the components required.  Drawing a design from three different perspectives.  Generating ideas through sketching and discussion.  Modelling ideas through prototypes.  Understanding the purpose of products (toys), including what is meant by ‘fit for  purpose’ and ‘form over function’. |
| Make | Making a torch with a working electrical circuit and switch.  Using appropriate equipment to cut and attach materials.  Assembling a torch according to the design and success criteria. | Constructing a stable base for a game.  Accurately cutting, folding and assembling a net.  Decorating the base of the game to a high quality finish.  Making and testing a circuit.  Incorporating a circuit into a base. |
| Evaluate | Evaluating electrical products.  Testing and evaluating the success of a final product. | Testing own and others finished games, identifying what went well and making  suggestions for improvement.  Gathering images and information about existing children’s toys.  Analysing a selection of existing children’s toys. |
| Knowledge | Technical | To understand that electrical conductors are materials which electricity can  pass through.  To understand that electrical insulators are materials which electricity  cannot pass through.  To know that a battery contains stored electricity that can be used to power  products.  To know that an electrical circuit must be complete for electricity to flow.  To know that a switch can be used to complete and break an electrical  circuit. | To know that batteries contain acid, which can be dangerous if they leak.  To know the names of the components in a basic series circuit, including a buzzer. |
| Additional | To know the features of a torch: case, contacts, batteries, switch, reflector,  lamp, lens.  To know facts from the history and invention of the electric light bulb(s) - by  Sir Joseph Swan and Thomas Edison. | To know that ‘form’ means the shape and appearance of an object.  To know the difference between 'form' and 'function'.  To understand that 'fit for purpose' means that a product works how it should and is easy to use.  To know that form over purpose means that a product looks good but does not  work very well.  To know the importance of ‘form follows function’ when designing: the product  must be designed primarily with the function in mind.  To understand the diagram perspectives 'top view', 'side view' and 'back'. |