

**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 creatingboth design and success criteria focusing on features of individual designideas. | 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 forpurpose’ 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 makingsuggestions 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 canpass through.To understand that electrical insulators are materials which electricitycannot pass through.To know that a battery contains stored electricity that can be used to powerproducts.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 electricalcircuit. | 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) - bySir 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 notwork very well.To know the importance of ‘form follows function’ when designing: the productmust be designed primarily with the function in mind.To understand the diagram perspectives 'top view', 'side view' and 'back'. |