**Year 4 Design and Technology Curriculum – Spring Term**

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| **Theme: Electrical systems- Simple circuits and switches** | | | | | | | | |
| **Curriculum objectives** | | | **Vocabulary** | | | | | **Links across the curriculum** |
| **To design and make a light up product (bookmark/quiz game)**  **(Projects on a page planning)**  To investigate and analyse a range of existing electrical games/toys which are battery operated.  To understand electrical systems (including buzzers, bulbs and switches) within products.  To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes focussing on the purpose of the product.  To select from and use a wider range of tools and materials to make an aesthetically pleasing product.  To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. | | | **Keyword** | Definition | **Keyword** | Definition | | **Science –**Know how to construct simple series circuit and have a basic understanding of conductors, insulators and open and closed switches.  .  Art – drawing skills.  **Spoken language** – ask relevant questions to build understanding and their vocabulary.  **Mathematics-** measures, |
| Circuit | Path through which electricity passes. | Switch | A device for making and breaking a connection in an electrical circuit. | |
| Conductor | A material which allows an electrical current to pass through it. |  |  | |
| Insulator | A material which does not easily allow an electrical current to pass through it. |  |  | |
| Prototype | A model made to test whether a design will work. |  |  | |
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| **Prior knowledge:** *What specifically have pupils learned that is relevant to this unit that they are building upon?* | | | | | **Future knowledge:** *What specifically will pupils learn in the future that is relevant to this unit?* | | | |
| Experienced constructing simple electrical circuits in science with bulbs, buzzers and switches. | | | | | Pupils will learn how to build more complex switches and circuit. | | | |
| **Lesson Sequence** | | **Key Knowledge** | | | | **Key Skills** | | |
| 1. To explore battery powered games and toys. | | * Electrical games work using circuits and can be switched on and off by completing or breaking the circuit. | | | | * Explore, disassembly skills, evaluation skills. | | |
| 1. To make a prototype. | | * The circuit must be complete to work. * Some materials are more suitable than others to make the game. * Metal conducts electricity | | | |  | | |
| 1. To design an electrical game/ bookmark. | | * Games and toys need to be aesthetically pleasing for people to want to play with them. * Wires, bulbs/buzzers, batteries are needed in the game’s circuit. | | | | * Creative thinking * Drawing and labelling skills. | | |
| 1. To make an electrical game/bookmark. | | * Complete electrical circuits will light up a bulb or activate a buzzer. | | | |  | | |
| 1. To evaluate their electrical game/bookmark. | | * What makes an electrical game work correctly. | | | | * Evaluation skills. * What went well… * Even better if… | | |
| **Themes and links** | | | | | | | | |
| **Themes** | **Where these are covered:** | | | | | | **Links across the D and T curriculum** | |
| **Investigate** | * Lesson 1 and 2 | | | | | | |  |  | | --- | --- | | **EYFS** |  | | **1** |  | | **2** |  | | **3** |  | | **4** |  | | **5** |  | | **6** |  | | |
| **Design** | * Lesson 3 | | | | | |
| **Make** | * Lesson 4 | | | | | |
| **Evaluate** | * Lesson 5 | | | | | |