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|  | ***Design and Technology Year 5 Mechanical system (pulleys or gears) –***  ***Jeep for safari*** | | | |
| **Project title** |  | | **Technical Knowledge and understanding.** | |
| Jeep for Safari  Tijuca Rainforest Tour - Jeep Tour - Rio de Janeiro, Rio de Janeiro ... | Gears and Pulleys - D&T Association  Buy Make Your Own Motorised Vehicles D&T Class Kit | TTS | | * Understand that mechanical and electrical systems have an input, process and an output. * Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. * Know and use technical vocabulary relevant to the project. | |
| **Focused skills** | |
| Tijuca Forest Jeep Tour in Rio de Janeiro - South American Trips | * Using a construction kit, investigate combinations of two different sized pulleys to learn about direction and speed of rotation * Build a working circuit that incorporates a battery, a motor and a handmade switch, such as a reversing switch. Demonstrate the accurate use of tools and equipment Draw a pictorial representation of the circuit or draw a circuit diagram using correct symbols. * Develop measuring, marking, cutting, shaping and joining skills | |
| **Vocabulary** | | | **Key Learning** | |
| **pulley**  a simple machine that makes lifting something easier | **gear**  a part of a machine that causes another part to move because of connecting teeth | **axle**  a bar or shaft on which a wheel or wheels turn. | **Prior Learning.**   * Experience of axles, axle holders and wheels that are fixed or free moving. * Basic understanding of electrical circuits * Experience of cutting and joining techniques * An understanding of how to strengthen and stiffen structures. | **Design**   * Generate innovative ideas by carrying out research * Develop a simple design specification * Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. |
| **circuit**  the closed path followed by an electric current. | **functionality**  the quality of being suited to a purpose | **reinforce**  strengthen or support |
| **motor**  a machine that causes motion or power. | **drive belt**  a belt that transmits drive from a motor or engine to a moving part or machine tool. | **evaluate**  assess | **Make**   * Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans * Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. | **Evaluating**   * Compare the final product to the original design specification. * Test products with intended user and critically evaluate * Consider the views of others to improve their work. * Investigate famous manufacturing and engineering companies relevant to the project. |
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