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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 SafariTijuca Rainforest Tour - Jeep Tour - Rio de Janeiro, Rio de Janeiro ... |  Gears and Pulleys - D&T AssociationBuy 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.
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|  **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
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| **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.
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| **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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