|  |  |  |  |
| --- | --- | --- | --- |
| **DT Year 2 Mechanisms Block C** | | | |
| **National Curriculum**   * Design design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. * Make select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. * Evaluate explore and evaluate a range of existing products evaluate their ideas and products against design criteria Technical knowledge build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. | | | |
|  | Lesson 1 | Lesson 2 | Lesson 3 |
| **Learning intention** | Are bigger wheels always better? | Are bigger wheels always better? | Are bigger wheels always better? |
| **Skills taught** | Can make a simple model to demonstrate a fixed and rotating axle | Explore, experiment and explain the effects of changing different variables relating to wheels and axles | Can apply knowledge about the positioning of wheels and axles to a vehicle design |
| **Recall and retrieval** | Explain the terms wheel, axle, axle bearer / holder, chassis  Define the words centre, position, rotate  Explore the difference between fixed axles and rotating axles and identify their applications | Explain the terms wheel, axle, axle bearer / holder, chassis  Define the words centre, position, rotate  Explore the difference between fixed axles and rotating axles and identify their applications | Explain the effects of changing different variables relating to wheels and axles  Draw conclusions from experimentation about the most effective positioning of wheels and axles  Identify the advantages and disadvantages of using small wheels or large wheels  Record findings using annotated sketches, diagrams and sentences |
| **Sequence of knowledge throughout the lesson** | **Key knowledge**  Can explain the meaning of key vocabulary  Can find differences and similarities between different wheeled objects  Can explain the difference between a fixed and rotating axle | **Key knowledge**  Can explain how changing the position and alignment of axles affects the movement of a vehicle  Can identify the advantages and disadvantages of using multiple axles, large wheels or small wheels  Can explain how the smoothness of movement is affected by axles not being mounted centrally onto wheels  Can draw conclusions about the most effective positioning of axles  Can record findings and conclusions accurately using appropriate vocabulary | **Key knowledge**  Can make informed decisions about size of wheels to use and can explain reasoning  Can identify strengths and weaknesses in a design and the constructed model  Can suggest ways to improve a model vehicle’s construction and performance |
| **Scaffolding** | Working Examples  Visual steps to success  Teacher support | Working Examples  Visual steps to success  Teacher support | Working Examples  Visual steps to success  Teacher support |
| **Challenge** |  |  |  |
| **Key Vocabulary** | Wheel  Axle  Axle Holder  Chassis  Rotate  Position  Centre | Wheel  Axle  Axle Holder  Chassis  Rotate  Position  Centre | Wheel  Axle  Axle Holder  Chassis  Rotate  Position  Centre |