| **DT Year 2 Mechanisms Block C** |
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| **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.
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|  | 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 axlesDraw conclusions from experimentation about the most effective positioning of wheels and axles Identify the advantages and disadvantages of using small wheels or large wheelsRecord 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 vehicleCan 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 axlesCan 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 ExamplesVisual steps to successTeacher support | Working ExamplesVisual steps to successTeacher support | Working ExamplesVisual steps to successTeacher support  |
| **Challenge** |  |  |  |
| **Key Vocabulary** | WheelAxleAxle HolderChassisRotatePositionCentre | WheelAxleAxle HolderChassisRotatePositionCentre | WheelAxleAxle HolderChassisRotatePositionCentre |