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| **What should I know …**    • How to use pictures and words to explain and develop their designs  • How to develop more than one idea making different choices of materials  • How to use the appropriate joins for different materials  • How to use cardboard to create a simple lever  • How to evaluate my own and others’ work   * How to make linkages using card for levers and split pins for pivots * . Cutting and assembling components neatly. * Evaluating own designs against design criteria. | **I will be taught to…**  • Draw accurate diagrams with correct labels, arrows and explanations.   * Correctly identify definitions for key terms. * Identify five appropriate design criteria. * Communicate two ideas using thumbnail sketches. * Communicate and develop one idea using an exploded diagram. * Select appropriate equipment and materials to build a working pneumatic system. * Assemble my pneumatic system within the housing to create the desired motion. * Create a finished pneumatic toy that fulfils the design brief. | **Key Questions …**    • Product - what is a pneumatic toy? How do pneumatic systems work?  • Purpose –What are the three different types of pneumatic systems that I could choose from and use for my toy? Which might be best for my toy? What do I want my toy to do?  • User - who is going to use my ‘pneumatic toy’? Who is it for?  • What is a linkage?  • What is an exploded diagram?  • How are and where are pneumatic systems used?   * What is a thumbnail sketch? * How will my design work? * What are the best materials I should use to make my toy? |
| **Key Vocabulary and Definition…**   |  |  | | --- | --- | | Exploded diagram | A diagram, which shows all the parts of diagram. Including the internal and external parts. | | Pivot | The central point, pin on which a mechanism turns. | | Linkages | A linkage or linked lever system is a number of levers that are joined together | | Function | How something works | | Mechanism | A device used to create movement in a product. | | Motion | The movement an object when controlled by an input or output. | | **Key skills…**  • Designing a toy that uses a pneumatic system.   * Developing design criteria from a design brief. * Generating ideas using thumbnail sketches and exploded diagrams. * Creating a pneumatic system to create a desired motion. * Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. * Selecting materials due to their functional and aesthetic characteristics. * Manipulating materials to create different effects by cutting, creasing, folding and weaving. * Testing and modifying the outcome, suggesting improvements. * Building secure housing for a pneumatic system. | **Web links …**    <https://youtu.be/y3jDcj6wkFM?si=PESZ_4mvBlDQ7X9T>  <https://youtu.be/5QqinrOcblM> |