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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?
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| **Key Vocabulary and Definition…**

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| 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> |