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| **Make a DIY Easter Bunny** | | | |
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| Making a bunny with moving arms and legs | | | |
| **Stay safe**  Whether you are a scientist researching a new medicine or an engineer solving climate change, safety always comes first. An adult must always be around and supervising when doing this activity. You are responsible for:    • ensuring that any equipment used for this activity is in good working condition  • behaving sensibly and following any safety instructions so as not to hurt or injure yourself or others    Please note that in the absence of any negligence or other breach of duty by us, this activity is carried out at your own risk. It is important to take extra care at the stages marked with this symbol: ⚠ | | | |
| **Subject(s):** Design & Technology, Mathematics  **Approx time:** 50 – 80 minutes |  | | **Key words / Topics:**   * Template * Linkage * Movement |
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| **Suggested Learning Outcomes** |  | |  |
| * To understand how to use a linkage to create movement * To be able to make and assemble a bouncing bunny with moving arms and legs | | | |
| **Introduction** |  | |  |
| This is one of a set of resources designed to allow learners to use Easter themes to develop their knowledge and skills in Design & Technology and Mathematics. This resource focuses on building a card structure, which uses linkages to make the limbs of a bunny move. | | | |
| **Purpose of this activity**  In this activity learners will learn about simple mechanisms using linkages made from paper products. Learners will have an opportunity to use a template to help them cut out the parts for a cardboard Easter bouncing bunny.  This activity could be used as a main lesson activity, to teach learners about linkages. | | | |
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| **Activity** |  | | **Teacher notes** |
| **Introduction (10-15 minutes)**  Teacher to explain that learners are going to make a bouncing bunny using cardboard parts from a template.  Teacher to hand out equipment and worksheet needed for the task to learners.  **Making the Easter bouncing bunny (30-50 minutes)**  Teacher to demonstrate the steps shown in the presentation and listed below:   * Step 1 – Safely cut out all the bunny parts. Stick them onto card or cardboard. When the glue is dry, cut out the cardboard parts. * Step 2 – Make the 13 holes in the parts. Put an eraser or sticky tack behind the hole, then push a sharp pencil in to make a small hole. * Step 3 – Connect the arms and legs to the body with brass fasteners. * Step 4 – Tie string to the head. Thread string through the arms. * Step 5 – Cross the strings over and thread the string through the legs. Tie the string in a knot. * Step 6 – Test your bunny to check that the arms and legs move.   Learners to complete each step for themselves. The teacher presentation could be left on the whiteboard as a supporting guide as they do this.  **Discussing the results of the activity (10-15 minutes)**  Teacher to discuss the results of the activity with learners. Teacher to explain how linkages are used to make objects moves. |  | | Print the activity sheet onto paper and distribute to the learners.  As an alternative to cutting out the parts, sticking to cardboard, then cutting the cardboard, the template could be glued directly to the cardboard and cut out when dry. However, care needs to be taken to ensure that glue is applied evenly to all the parts and this may also result in greater wastage of material.  Step 2 and 3 – Make the holes using sticky tack or an eraser with a sharp pencil. Highlight which are the brass fasteners and string holes.  Step 4 – If the string is difficult to thread either slightly enlarge the hole or add a bit of glue to the end of the string and roll to a point.  Step 6 – To test the bunny movement learners should hold the top string and pull on the bottom string. The arms and legs will move and will need pulling down to reset.  Extension - Learners can experiment with different sized elastic bands to help the arms and legs return to the start position.  Learners could decorate the Easter bouncing bunny if time allows. |
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| **Differentiation** |  | |  |
| **Basic** |  | | **Extension** |
| * Provide learners with pre-cut parts from the template sheet. |  | | * Learners add their own designs to their bunny. * Learners may experiment with different elastic bands to alter the movement of arms and legs. |
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| **Resources** |  | | **Required files** icon-docicon-pdficon-ppt |
| * Glue sticks * Card or cardboard * Scissors * String * Brass fasteners * Pencils * Erasers/sticky tack * Elastic bands |  | | icon-ppt Teacher presentation – Make a DIY Easter Bunny  icon-pdf Make a DIY Easter Bunny activity handout |
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| **Additional websites** |  | |  |
| * **BBC Bitesize** **–** Mechanical systems: https://www.bbc.co.uk/bitesize/articles/zktckmn | | | |
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| **Related activities (to build a full lesson)** |  | |  |
| **Starters** (Options)   * Watch video: **BBC Bitesize** **–** Mechanical systems: https://www.bbc.co.uk/bitesize/articles/zktckmn | | **Extension** (Options)   * Learners add their own design to their bunny. * Learners may experiment with different elastic bands to alter the movement of arms and legs.   **Plenary**   * Discuss the outcome of the activity and share their Easter bouncing bunny with the class. | |
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| **The Engineering Context** film |
| Engineers must have a good understanding of mechanisms. Mechanisms are used in every machine that has moving parts, from trains, cars, and washing machines to a space rocket. |

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| **Curriculum links** | | |
| **England: National Curriculum**  Mathematics  Science  KS2 - Forces   * effects of levers, pulleys, and simple machines on movement. | | **Northern Ireland Curriculum**  KS2 – The World Around us  Movement and energy   * changes in movement |
| **Scotland: Curriculum for Excellence**  Numeracy and Mathematics  Shape, position and movement  MTH 2-16b   * show understanding of the relationship between 3D objects and their nets. | | **Wales: National Curriculum**  KS2 – Science  How things work   * the ways in which forces can affect movement and how forces can be compared |
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| **Assessment opportunities** | | |
| * Informal teacher assessment of practical skills through observation of learners. * Formal teacher assessment of activity results. | | |
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