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| **Folded art book** | | | |
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| Turning a book into an artistic present!  **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, Art  **Approx. time:** 3-6 hours |  | | **Key words / Topics:**   * Christmas * book * fold * upcycling |
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| **Suggested Learning Outcomes** |  | |  |
| * To be able to accurately manipulate paper products by folding. * To produce a creative, artistic 3D graphic product. | | | |
| **Introduction** |  | |  |
| This is one of a series of resources designed to allow learners to use Christmas themes to develop their knowledge and skills in Design & Technology and Engineering. This resource involves upcycling an old book to produce folded book art, which could be used as a great Christmas gift. | | | |
| **Purpose of this activity**  In this activity, learners will develop their skills to manipulate paper products by folding, while creating folded book art. Many examples of this are available on craft sites (such as <https://www.etsy.com/uk/search?q=folded%20book%20art>).  This could be started as a main lesson activity to develop creativity and folding skills in design & technology. As the actual folding is typically very time consuming, this could be continued at home, run across a number of sessions or during an off-curriculum day. | | | |
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| **Activity** |  | | **Teacher notes** |
| **1. Introduction (5-10 minutes)**  Teacher to explain that learners are going to make folded book art, showing examples if available (or using images from one of the websites listed below). Teacher to hand out equipment and worksheet needed for the task to learners.  **2. Demonstration (20-40 minutes)**  Teacher to demonstrate the steps listed below, using the teacher presentation for illustration and to show the eventual outcome when each step is completed. The demonstration should cover the skills and methods but does not need to complete the full book!   * Step 1 – Sketch the shape on the side of the book in pencil. Remember that the shape will be at least twice as wide after it is finished, depending upon how may folds are made in the paper. * Step 2 – Fold to the first line. Start with an open feature, and fold over the first corner so the bottom of the fold touches the top of the shape. Repeat as necessary to demonstrate. Keep each fold the same size/shape. Learners will subsequently have to repeat until all the folds are done for that line. * Step 3 – Fold the other open features. * Step 4 – Making the enclosed features. ⚠ Using scissors, carefully cut half way along the width of any enclosed features. Be careful not to cut too deep. Then fold as though the cut was the edge of the paper, folding away on both sides. Repeat for other enclosed features as required.   If the finished book tries to open out too much, this can be addressed by adding a paper strap across the bottom (glued to the inside of the two covers).  **3. Learners produce their own folded book art (150-300 minutes)**  Learners to complete each step to conduct the activity for themselves. The teacher presentation could be left on the whiteboard or printed out as a supporting guide as they do this. |  | | The final item is typically better if a hardback is used (as this stands easier). However, softbacks can be used, as demonstrated in the example in the presentation.  When selecting a shape to use, shapes with open features (see slide 3) are much easier to produce than shapes with enclosed features. If the selected shape has no enclosed features then step 4 (cutting) will not be required.  When folding at step 2, the position of the fold relative to the text can provide a good indication that it is uniform. The depth of the fold (i.e. how far it extends into the book can be decided for aesthetic reasons. In the example shown, most folds were made at approximately 45 degrees, just because this was easy to do using the text as a guideline. Folds could be extended all the way to the spine of the book if preferred. Rulers can be used for accuracy of folding if required.  Step 4 (cutting) is used to simplify and reduce the challenge of the activity. Ideally all features should be possible by folding (as illustrated on slide 9 of the presentation and in some of the videos in the additional websites below). |
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| **4. Self review (5-10 mins)**  What went well, even better if… Selected learners identify one thing that they like or went well when making their design and one improvement that could be made if they were to repeat the activity. |  | |  |
| **Differentiation** |  | |  |
| **Basic** |  | | **Extension** |
| Use a shape which has no enclosed features (such as a heart).  Use a book with a limited number of pages! |  | | Make complex shapes including multiple enclosed features.  Produce the enclosed features by folding only (no cutting).  Decorate the book cover to make it even more attractive |
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| **Resources** |  | | **Required files** icon-docicon-pdficon-ppt |
| * Projector/whiteboard * Books (hardback preferred) * Pencils, rulers and scissors * Scissors * Rulers * Optional: examples of folded book art |  | | icon-ppt Folded book art presentation |
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| **Additional websites** |  | |  |
| The following websites can be used for additional background information or to aid with the activity:   * **Examples of hand-made folded book art:** <https://www.etsy.com/uk/search?q=folded%20book%20art>. * **Free patterns for folded book art**, including illustrative pictures: <https://foldedbookart.co.uk/> * **How to make folded book art – video:** <https://www.youtube.com/watch?v=vDmgX2vn1kc> * **How products are made: books:** <http://www.madehow.com/Volume-1/Book.html> or a more detailed explanation with supporting diagrams <https://ebookfriendly.com/book-diagrams/>. * **How its made – books:** video showing how books are made <https://www.youtube.com/watch?v=mfcEFEaxaLs>.   **Alternative ideas for making sculptures from books:** <https://www.youtube.com/watch?v=ADYezmUmFJw> and <https://www.youtube.com/watch?v=bTw3I6wfPAM>. | | | |
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| **Related activities (to build a full lesson)** |  | |  |
| **Starters**   * Video: how to make folded book art <https://www.youtube.com/watch?v=vDmgX2vn1kc> * Show the learners examples of folded book art (either a sample or <https://www.etsy.com/uk/search?q=folded%20book%20art>) Who could they give something like this to as a great Christmas gift?   **Main**  ACTIVITY: Folded book art | | **Plenary**   * What went well, even better if… self-review. | |
| Note: due to the time requirements this could be continued at home or over several sessions. |  | |  |

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| **The Engineering Context** film |
| Reusing, repurposing and upcycling products helps to reduce the demands on the environment for new resources. |

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| **Curriculum links** | |
| **England: National Curriculum**  Design & Technology   * KS3 2a, 4a | **Northern Ireland: Curriculum**  Technology & Design   * KS3 Knowledge, understanding and skills: Design – Manufacturing – … safe use of a range of tools and processes appropriate to materials, demonstrating accuracy and quality of outcome. * Developing pupils as Individuals: Abide by health and safety rules when using tools, machines and equipment. |
| **Scotland: Curriculum for Excellence**  Technologies   * TCH 3-09a, 4-09a | **Wales: National Curriculum**  Design and Technology   * KS3 Skills: Making 1, 2, 3 |
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| **GCSE D&T**  AQA D&T   * 3.1.6.1, 3.2.5, 3.2.8   Edexcel D&T   * 1.9.1, 3.1.1, 3.6.1, 3.7.2   Eduqas D&T   * 2.1 Core: 8, Papers and boards 2, 6   OCR D&T  1.1a, 1.2a, 5.1a, 7.2, 7.3  **GCSE Engineering**  AQA Engineering  3.2.3 |

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| **Assessment opportunities** | | |
| Accuracy of in progress making and questioning throughout the activity, formal teacher assessment of completed work. | | |
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| **Personal, learning & thinking skills (PLTS)** | | |
| * Self-manager * Reflective learner * Creative thinker | | |
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