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| **Create a stone garden display** | | |
| Create a stone garden display for the school entrance to celebrate the coronation of King Charles III | | |
| **Subject(s):** Design and Technology, Mathematics  **Approx time:** 100-180 minutes (variable with size of display created) |  | **Key words / Topics:**   * celebration * commemorate * coronation * crown * display * entrance * union flag |
| **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: ⚠ | | |
| **Suggested Learning Outcomes** |  |  |
| * To be able to design and produce an attractive stone display to celebrate the King’s coronation * To be able to produce designs that meet a given brief * To be able to use measurements and scaling when designing | | |
| **Introduction** |  |  |
| This is one of a series of resources that are designed to allow learners to use the theme of King Charles III’s coronation to develop their knowledge and skills in Design & Technology, Engineering and Mathematics. This resource focusses on designing a rock display for the school entrance that commemorates the event. | | |
| **Purpose of this activity**  In this activity learners will make use of the theme of the King’s coronation to design a rock garden in the style of a flag or other item to commemorate the event. They will consider the design brief for the criteria, use a template to produce a design on paper, consider the scale for the final display and produce the final display.  This activity could be used as a main lesson activity to teach about the use of natural materials to produce design ideas. It could also be used as part of a wider scheme of work to develop understanding of scale. | | |
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| **Activity** |  | **Teacher notes** |
| **Introduction (5-10 minutes)**  Teacher to explain the task to learners and use slide 3 of the presentation to introduce the design brief:  **Starter (5-10 minutes)**  Teacher to use the links on slide 4 of the presentation, and any other suitable examples, to explain what a commemorative stone garden or display is. Learners to discuss what is good about these examples and what could be done better  **What do we need? (5-10 minutes)**  Explain that most of the garden will be made using painted stones. Learners to discuss which images should be used, for example, a Union Jack flag or a crown.  **Designing (20-30 minutes)**  Learners to cut out the 2D paper stones for producing their designs using the provided template sheets. Learners to assemble the stones into their design on paper, using glue sticks.  **Scaling up (10-20 minutes)**  Explain that learners will need to scale their design in order to create a full-sized display. Learners to measure the size of the design made with the paper ‘stones’, then measure the size of the area that is to be covered at the school entrance (or other site). Use presentation slides 9 and 10 to help.  This can lead to a discussion of whether more stones will be needed to make a good display. Learners will need to calculate how many stones of each different colour will be required.  **Making – painting and arranging (25-40 minutes) ⚠**  Learners to paint and arrange the physical stones in suitable colours. Use slide 11 of the presentation slide explain health and safety issues to consider for the painting activity. ⚠  **Installing (30-60 minutes)**  Class to assemble the display in the designated area, using the design as a guide.. |  | The area where the final display is to be located (such as the entrance to the school) should be identified in advance. If required, permission to implement the display should be obtained. If possible, learners should be shown the area prior to starting the activity. Photographs of the proposed location could be taken and integrated into the presentation.  Designs could be produced individually or as a class.  **Union flag information**  There is a description of the union flag for design inspiration.  At the time of creation of the Union Flag, Wales was not recognised as a separate country and the United Kingdom included the whole of Ireland. This position has changed and there are moves to change the flag to reflect the place of Wales in the UK. An extension could be to ask the learners to create a new flag for the whole of the UK.  **Designing**  Designs could be produced individually or in small groups, creating an agreed design.  The suggested method is to produce 2D paper stones (by cutting up the provided templates) and attach these to a sheet using glue sticks. The sheets could be printed on different coloured paper or printed on white and coloured manually. Alternatively learners could colour the stones of the templates, although this will provide significantly less definition of the image.  If producing a Union flag, it should be large enough so that the St Andrew’s and St Patrick’s elements are clearly visible with white in between.  **Installing**  The outline of the design could be marked out on the ground using environmentally friendly spray paint or string and wooden pegs, as appropriate. For complicated designs, a grid system could be used (as commonly used in art for scaling pictures). |
| **Differentiation** |  |  |
| **Basic** |  | **Extension** |
| * Supply regular sized pebbles (which can be obtained from a builder’s merchant). Cut out paper rocks the same size as the provided pebbles and miss out the maths scaling part of the activity * Provide learners with images for inspiration – flags, crowns, school entrance locations etc. |  | * Create a border around the display * Include flowers and plants in the design to make the display look even better * Design a new flag that would represent the whole of the United Kingdom. |

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| **Resources** |  | | **Required files** icon-docicon-pdficon-ppt |
| * Coloured paper – red, blue and white * Scissors * Glue sticks * Alternative: coloured pencils or paints * Paint (water based acrylic paint) * Brushes and water to clean them * Gloves and overalls * Stones and small cobbles * Paint suitable for outside use |  | | icon-ppt Primary Presentation Make an Entrance  icon-pdf Make an entrance stone template  icon-doc Make an entrance Scaling up Worksheet |
| **Additional websites** |  | |  |
| * **Royal Family - King’s Coronation:** Information about the plans for the coronation from the official Royal Family website. <https://www.royal.uk/coronation-weekend-plans-announced> * **BBC News – King’s Coronation:** Information about the King’s coronation and the stages that make up the ceremony. <https://www.bbc.co.uk/news/uk-63543019> * **USA flag stone garden example:** <https://www.tinselbox.com/american-flag-inspired-rock-garden-art/> * **YouTube video - Stone garden example:** <https://www.youtube.com/watch?app=desktop&v=BJimE7w1iSs> | | | |
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| **Related activities (to build a full lesson)** |  | |  |
| **Starters** (Options)   * Discuss the Coronation of Charles III and what the school could to do to mark the occasion. * Watch the video <https://www.youtube.com/watch?app=desktop&v=BJimE7w1iSs> | | **Plenary**   * Present the designs to the class, teacher and/or a member of senior leadership at the school. | |

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| **The Engineering Context** |
| * All designers and engineers need to be able to produce ideas related to certain themes and follow a design brief. This ensures that the products they design will meet the needs of the end users, customers or clients. * Using natural materials is becoming more common in the built environment. It is important for engineers to have a working knowledge of different natural materials and their potential applications. * The coronation of King Charles III is a great opportunity for engineers to showcase the best of what the United Kingdom has to offer in terms of their design skills! |

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| **Curriculum links** | |
| **England: National Curriculum**  Design & Technology   * KS2 1a, b, 3b   Mathematics  KS2 Year 3 Measurement:   * measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) | **Northern Ireland Curriculum**  Technology & Design – being creative   * experimenting with ideas and questions * making new connections between ideas/information * learning from and valuing other people’s ideas   KS2 - Mathematics and Numeracy  Measures:   * identify understand and use the language associated with length, weight, capacity, area and time * know and use the most commonly used units to measure in purposeful contexts |
| **Scotland: Curriculum for Excellence**  Technologies   * TCH 0-11a TCH 1-11a   Numeracy and Mathematics  Measurement:   * MNU 2-11b | **Wales: National Curriculum**  Design and Technology   * KS2 Skills: Designing 4,5   Mathematics  KS2 - Using measuring skills:   * select and use appropriate standard units to estimate and measure length, weight/mass and capacity * measure on a ruler to the nearest mm   Science  KS2 – Skills:   * use standard measures and S.I. units |
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| **Assessment opportunities** | | |
| * Formal teacher assessment of the designs * Self/peer assessment of the designs * Formative feedback from headteacher/senior leadership/board of governors prior to implementation | | |
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