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| **Activity title** |
| **Christmas star decoration** |
| **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:⚠ |
| **Time required** |
| 30 minutes |
| **Activity summary** |
| Many people place a star at the top of their Christmas tree because it reminds them of the Christmas Star that’s said to have guided the Three Wise Men to Bethlehem. Perhaps that’s why people who do great things and set an example for others are called ‘shining stars’? |
| **You might think you’re just going to make a Christmas star, but you’ll also:** |
| * Learn how to make a strong structure * Practise your counting skills * Develop your practical skills, by using rubber bands to join sticks together and make a sturdy shape * Get creative, by decorating your star to make it look really special * Have oodles of fun! |
| **What equipment will you need?** |
| * Five craft sticks (if you want to use painted sticks, paint them first and let them dry * Five rubber bands (choose short rubber bands – long ones will be too fiddly) * String or twine, to make a loop so that you can hang your star on your tree * Glue (to stick the hanging loop onto you star) * Materials to decorate your star and make it look fancy |
| **How to do it** |
| **Step 1: Join the first two sticks**   * If want to paint your sticks, do that first and allow them to dry. * Use an elastic band to join two sticks together in a ‘V’ shape. * Turn the V upside down, to make two ‘legs’. * How strong is the structure? Can you make the rubber band ping off by moving the legs around?   **Step 2: Add a third stick**   * Join a third stick to the structure at an angle of around 45 degrees. * Test the structure – is it stronger or weaker?   **Step 3: Add a fourth stick**   * Join a fourth stick at an angle of around 45 degrees and weave it between the sticks * Do another strength test – is the structure getting stronger or weaker?   **Step 4**: **Place your final stick**   * Lay the final stick across the rest of the star and secure it at both ends. * How strong is it now? * By the way… ‘weaving’ the final stick between the other sticks is not recommended. Feel free to try this out and find out why!   **Step 5**: **Attach a loop**   * Attach a loop to your star, so that you’ll be able to hang it on your tree.   **Step 6**: **Make your star unique**   * Add your own design touches – here are some ideas. * Paint your sticks (do this before you make your star) * Use coloured bands * Find other ways to join the sticks, like string or ribbon * Try out different types of sticks, maybe from your garden * Jazz up your star by sticking things onto it – get creative! * Print a copy of our Christmas calendar sheet, for some great pictures to colour in, cut out and stick onto your star. ⚠ * Glue our new jelly window stickers onto your star |
| **Learning point** |
| Did you know that triangles are the strongest shapes? Triangles can bear weight very well by spreading the force evenly, across each of its sides. Bridges for example, are often made up of many triangles. When weight is added to a triangular structure, the two sides of the triangle are squeezed, also known as compression. And the bottom of the triangle stretches and is pulled, also known as tension. All three sides of a triangle play a role in supporting and distributing the pressure evenly – making it a strong shape. |
| **Festive fun** |
| * **Where do young trees learn how to be Christmas trees?**   At elementree school.   * **Why did the Christmas tree fail its exams?**   It was stumped by the questions.   * **How do Christmas trees access email?**   By logging on. |
| **Star fun facts** |
| * Astronomers estimate there are a trillion stars in the Milky Way Galaxy. * There are more than 1,800 types of starfish. Most have five legs, but some have as many as 50! If a starfish loses a leg, it simply grows a new one. How handy is that? * More than 35 national flags feature one or more stars. How many can you name? |
| **Bonus activity – a magic trick** |
| If you love creating things, this activity is for you. We’re going to show you how to make a Christmas crown to be proud of! In fact, you might even like to make a matching crown for your favourite teddy bear, or even your pet dog or cat… |
| **Here’s what you’ll need:** |
| * + two pieces of paper   + a ruler   + coloured pens or pencils   + a pair of scissors. |
| **Are you ready? Right then, let’s go…** |
| **Step 1:** Fold a piece of paper in half. Draw a square and a triangle then colour them in.  **Step 2:** Keep the paper folded and cut out the two shapes.  **Step 3:** Place the two squares on top of each other, then twist the top one a little in a clockwise direction.  **Step 4:** Do the same with the two triangles.  **Step 5:** Hey presto, you’ve made two stars! Draw round them on your second sheet of paper.  **Step 6:** Count the points on each of your star drawings. Can you work out why there’s a difference? Maybe it’s just magic? |
| **Word fun** |
| Which word is missing in each of the sentences below?   * The team’s \*\*\*\* player scored the winning goal. * Global super\*\*\*\* Kylie sang her number-one hit. * The film had a \*\*\*\*-studded cast. * The five-\*\*\*\* hotel was swanky and expensive.   (Answer: Star) |
| **Did you know?** |
| The huge **Christmas tree in Trafalgar Square** is an annual gift from the people of Norway, to thank Britain for supporting their country during the Second World War. The tradition has been going since 1947. |
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