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| **Activity title** |
| **How to make a Christmas star paper lantern** |
| **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** |
| 1 hour plus |
| **Activity summary** |
| We’re going to show you how to make a wonderful Christmas paper lantern in the shape of a star.  You can use our net or go ‘off piste’ and create your own unique lantern design. You might even like to use different colours of paper to create a stylish effect. The choice is yours! |
| **What equipment will you need?** |
| * Printouts – starry lights templates 1-3 * Scissors * Glue stick * Sticky tape * Card * Tracing, baking or greaseproof paper * Small torch; or a pp3 9v battery and led; or a string of fairy lights * String |
| **How to do it** |
| **Step 1:** ⚠ **Cut out the frame**   * Start off with two copies of template 1 * Cut along the solid lines, to make five strips from each sheet * You should now have 10 strips   **Step 2: Strengthen the strips**   * Use scissors and a ruler to score each strip along the dotted line ⚠ * Fold each strip in half along the dotted line * Glue the two halves of each strip together, to make 10 double-thickness strips   **Step 3: Prepare the frame**   * Place template 2 on your work area * Follow the guide to place five strips on the template * You should now see a star shape   **Step 4: Build the frame**   * Glue the strips together at the points marked with a red x (see photo) * Repeat steps 3-4 to make a second frame   **Step 5: Make the inner supports**   * Take template 3 and cut along the bold lines * You should now have five strips * Roll a strip tightly around a pencil * Glue the end of the strip and stick it securely * Remove the pencil * Repeat four times   **Step 6: Glue the frames together**   * Glue the five inner supports to one of the frames * Add glue to the top of each support * Align the second frame on top and press it onto the supports   **Step 7: Make a point!**   * There are five points on your star shape * Staple four of them together (or use glue, paper clips or sticky tape) * Make sure you leave one of the points as it is   **Step 8: Cover your lantern**   * Cover one side of the lantern with tracing, baking or greaseproof paper * Glue the paper to the frame * Leave the glue to dry   **Step 9: Neaten it up!**   * Trim the paper – allow a small overlap, right around the star * Save the off-cuts for later! * Glue the overlap onto the inside of the frame * Repeat steps 8 and 9 to cover the second side of your star   **Step 10:** ⚠**Cut out the sides**   * Find template 3 and cut out the side template * Use the side template to cut out 10 side pieces   **Step 10: Cover the sides**   * Glue a side strip onto eight sides of the lantern * Leave the top gap (the open point) open   **Step 11: Glow up!**   * Insert your lights in the body of the lantern – you could use the following: * LED lights * a small torch * a PP3 9V battery with an LED attached to the terminals (see photo) * For options b and c, use sticky tape to affix a piece of string, so that you can remove the lights without wrecking your star   **Step 12: The finishing touches**   * Glue the final two side pieces at the top of the star * Attach string to the top point, using sticky tape * Hang up your star lantern * Step back and admire your handiwork!   We hope you enjoyed making your lantern. Why not make a few more, to decorate your room or to offer as presents to people you care about? |
| **Three Christmas kisses and a wish** |
| It’s always great to reflect on a job well done. Show your Christmas star lantern creation to a friend or family member and ask them to tell you three good things about it, and one thing that could be improved.  You could then use their feedback to improve your design. Practice makes perfect… |
| **Festive fun** |
| After all that hard work, here are some cracking jokes to make you smile:   * **Dad got the Christmas lights tangled in his hair.**   He felt a bit light-headed.   * **Why did the genius sleep with the light on?**   So they could come up with some bright ideas.   * **When I was at the Chinese restaurant, I found the lights way too bright.**   I asked the waiter to dim sum. |
| **Did you know?** |
| * Light travels at around 300,000 kilometres a second * A [light-year](https://www.livescience.com/56115-what-is-a-light-year.html) is the distance that light can travel in one year — about 10 trillion kilometres * It takes about eight minutes for the Sun’s light to reach Earth (it’s eight light-minutes away). The moon is one light-second away… |
| **Look up!** |
| When there’s a clear night sky, step outside and do some serious stargazing. Take along a pencil, paper, a torch and a mobile phone.  It may take a while for your eyes to focus, but with a bit of luck you’ll be able to spot some stars and recognise some well-known constellations.  You may even be able to download a stargazing app on a mobile phone. Simply hold your device up to the sky and you’ll be able to identify the constellations you’re looking at in an instant.  Draw the shapes of the constellations that you can see – and remember to add the name for each! |

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| **Bonus activity – Star lifecycle quiz** |
| 1. **Stars begin as massive clouds of dust that are called:**    1. Glitter bombs    2. Nebulae    3. Leviticus dusticus 2. **The dust is forced to clump together by:**    1. Aliens    2. Robots    3. Gravity 3. **As the clump grows, it starts to heat up. At this point, it’s called a protostar. The heat in the middle keeps rising until nuclear fusion starts. It’s then known as a young:**    1. Twinkle    2. Star    3. Bulb 4. **The star goes on to burn energy for billions of years, until it has used up all of its:**    1. Oxygen    2. Carbon    3. Hydrogen 5. **The outer part of the star begins to expand. At this stage the star is classed as a:**    1. Blue Moon    2. Red Giant    3. Purple Pod 6. **The star eventually collapses. Most become dwarf stars but the really big ones have a nuclear explosion. This is called a:**    1. Nuclosion    2. Big Bang    3. Supernova 7. **After the explosion, it may become a:**    1. Black hole    2. Shooting star    3. Comet |
| **Answers** |
| 1: B – **nebulae**  2: C – **gravity**  3: B – **star**  4: C – **hydrogen**  5: B – **Red Giant**  6: C – **Supernova**  7: A – **black hole** |