

Sparkle & Shine! Grow Your Own Christmas Crystals!

October 22, 2024 / DIY / STEM Activities / Chemistry / Age 6 - 8 / Christmas Crystal Decorations



Want to make your Christmas decorations sparkle with a captivating crystalline glow? Snowflake ornaments made with borax are a must-try option! By using borax instead of salt or sugar, we can complete these decorations in just one day!

- Age: 6-8
- Time: Less than 24 hours
- Messiness level: A bit messy

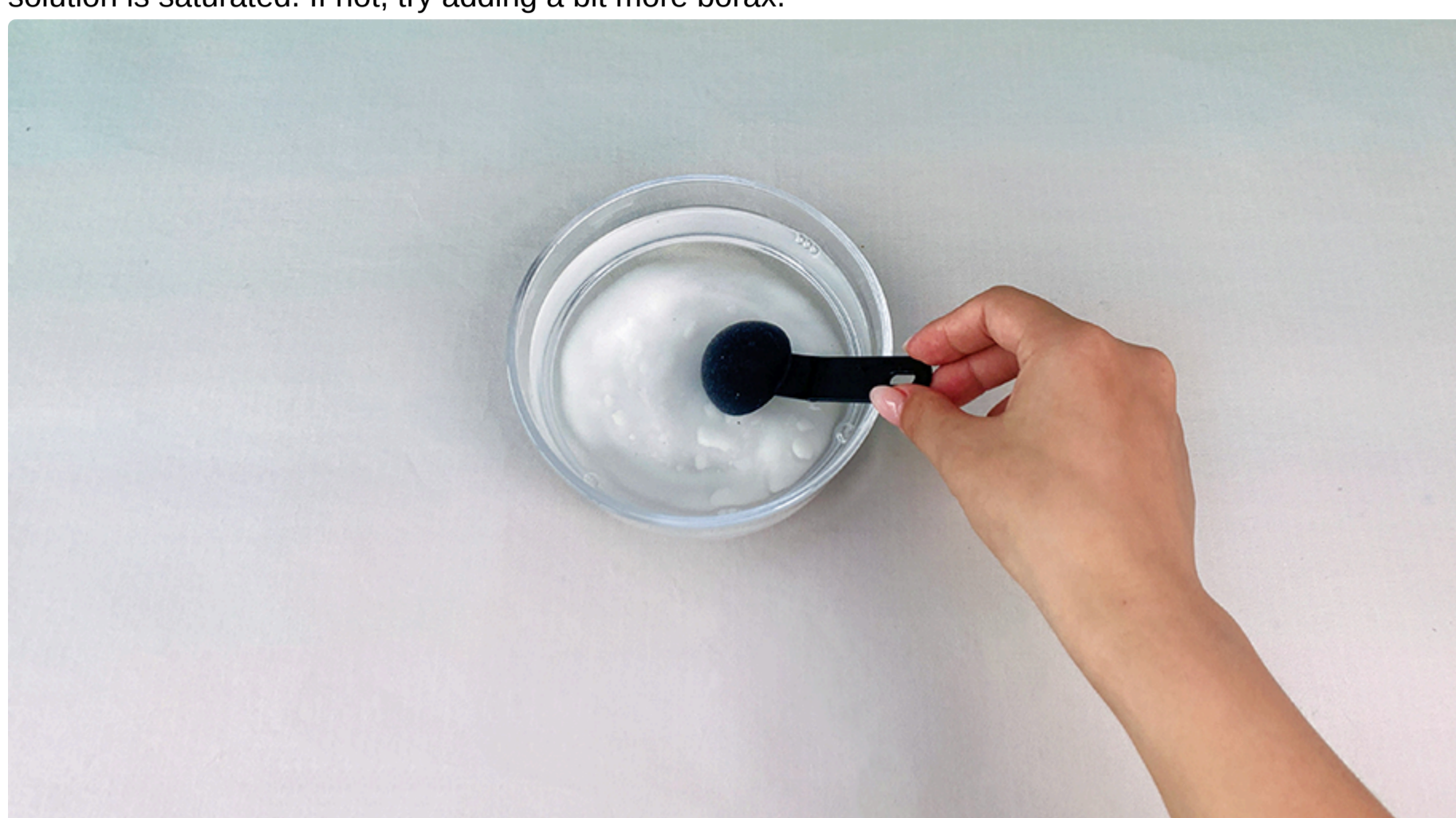
Materials Needed:

Hot water
Borax
Small bowl (for making borax solution)
Glass jar (needs to be reasonably deep)
Thin string
Scissors
Pipe cleaners
Small wooden stick or lolly stick



Step-by-Step Instructions:

1. Prepare the borax solution: Put hot water and borax in a small bowl and stir until the borax dissolves (the ratio of hot water to borax is roughly 2:1). If there's undissolved borax in the solution, it means the solution is saturated. If not, try adding a bit more borax.



2. Make a Christmas snowflake: Cut pipe cleaners into 6cm and 3cm lengths, three of each. Cross the three 6cm pipe cleaners as shown in the picture.



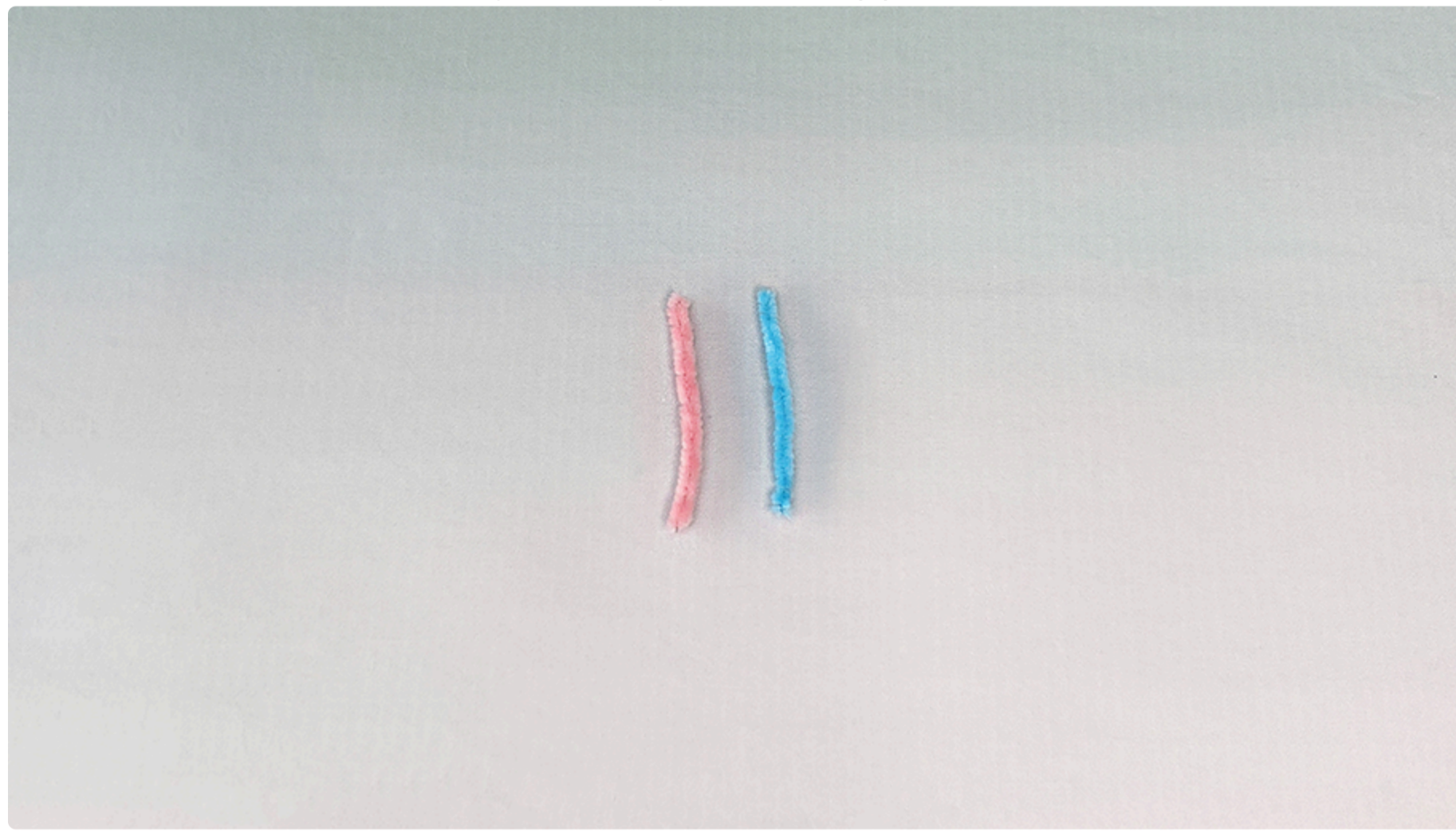
3. Twist the pipe cleaners to secure them at the intersection point.



4. Place the 3cm pipe cleaners on the secured pipe cleaners, twist to fix them in place, and your snowflake is ready.



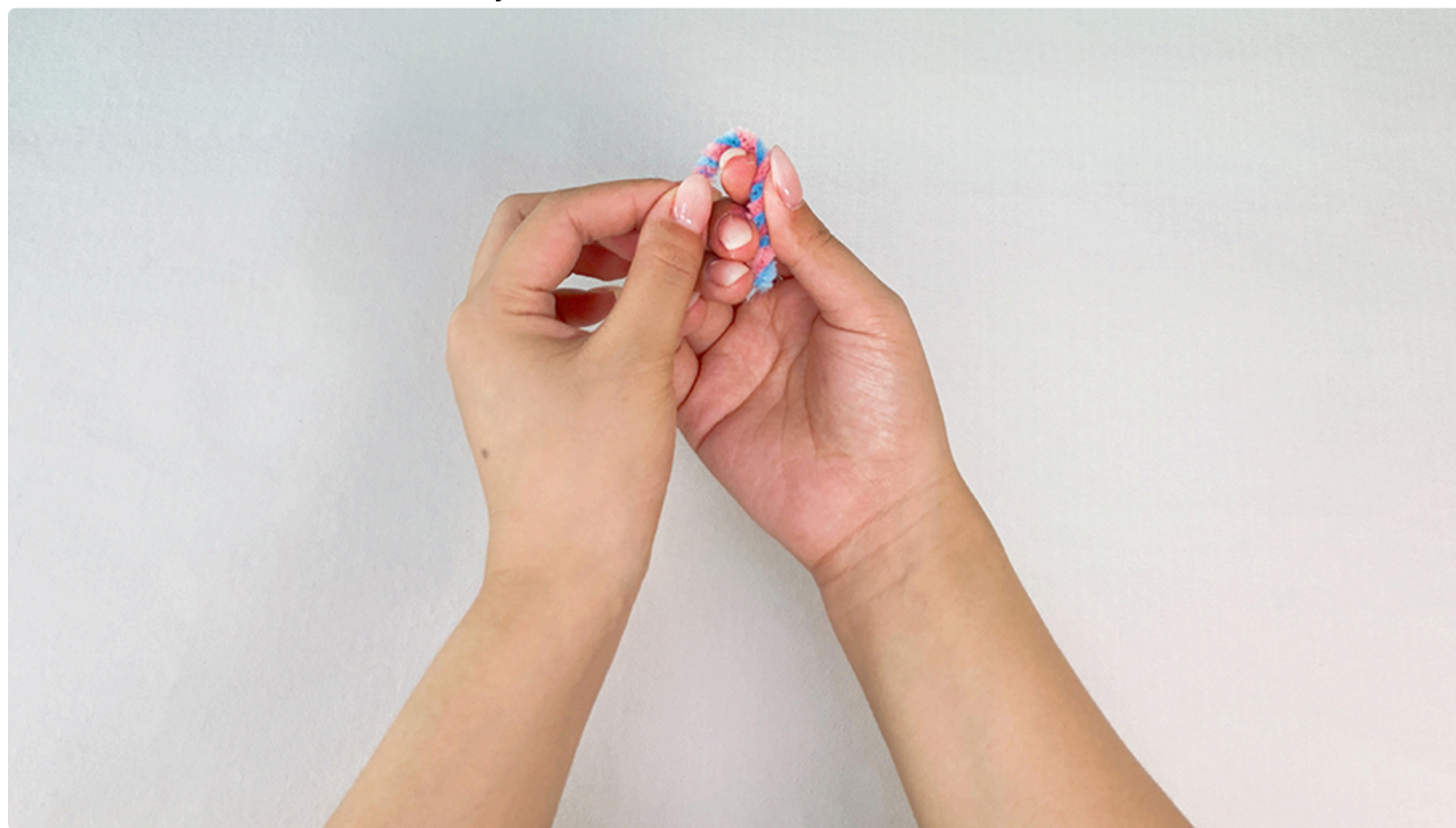
5. Next, we'll make a Christmas candy cane. Prepare two 8cm pipe cleaners of different colours.



6. Cross and twist them together.



7. Twist to form the curve of the candy cane.



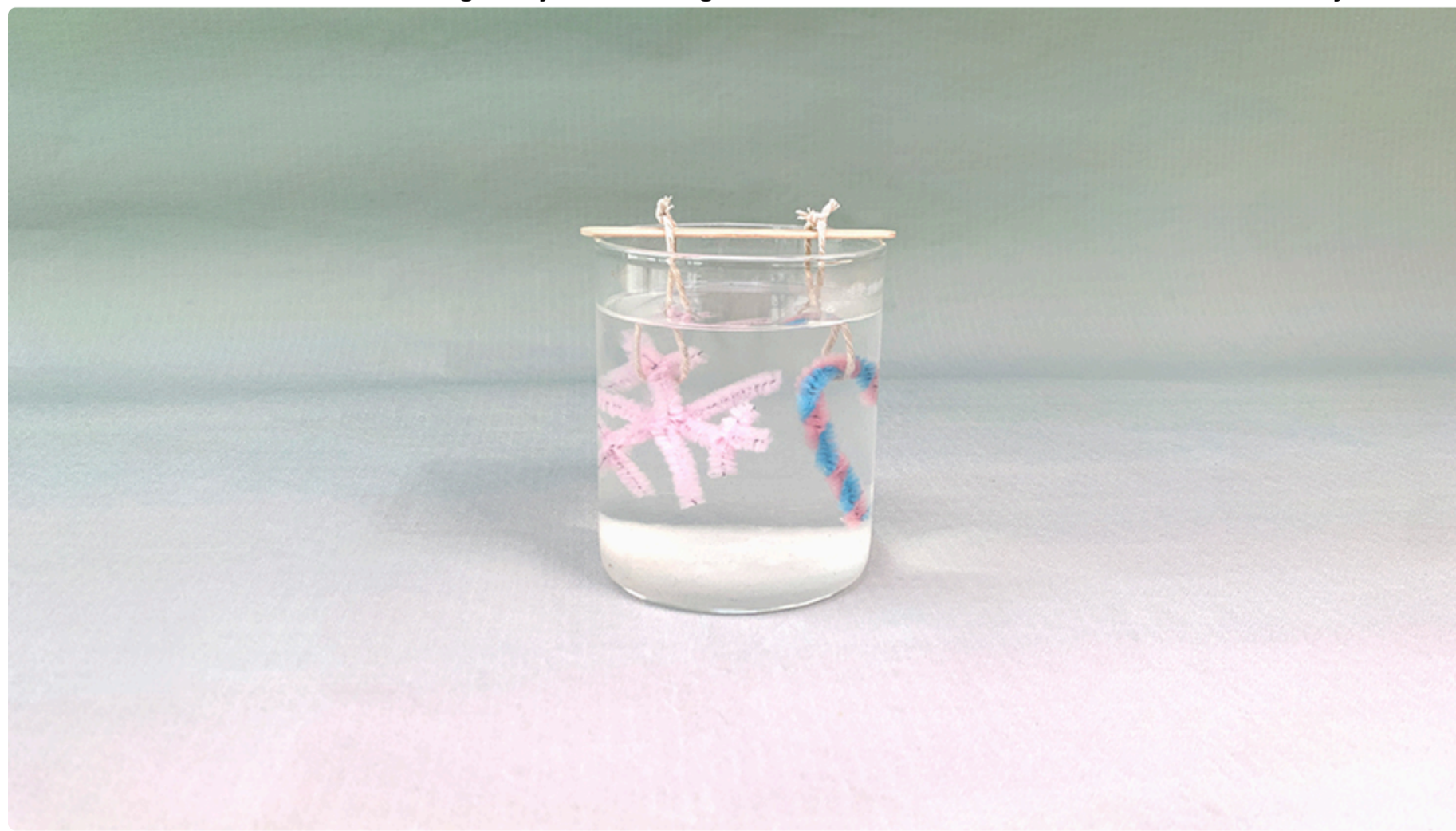
8. Cut a piece of thin string, tie the snowflake and candy cane to the lolly stick, and place them in the glass jar. Adjust the string length so that the snowflake and candy cane are suspended.

Tip:

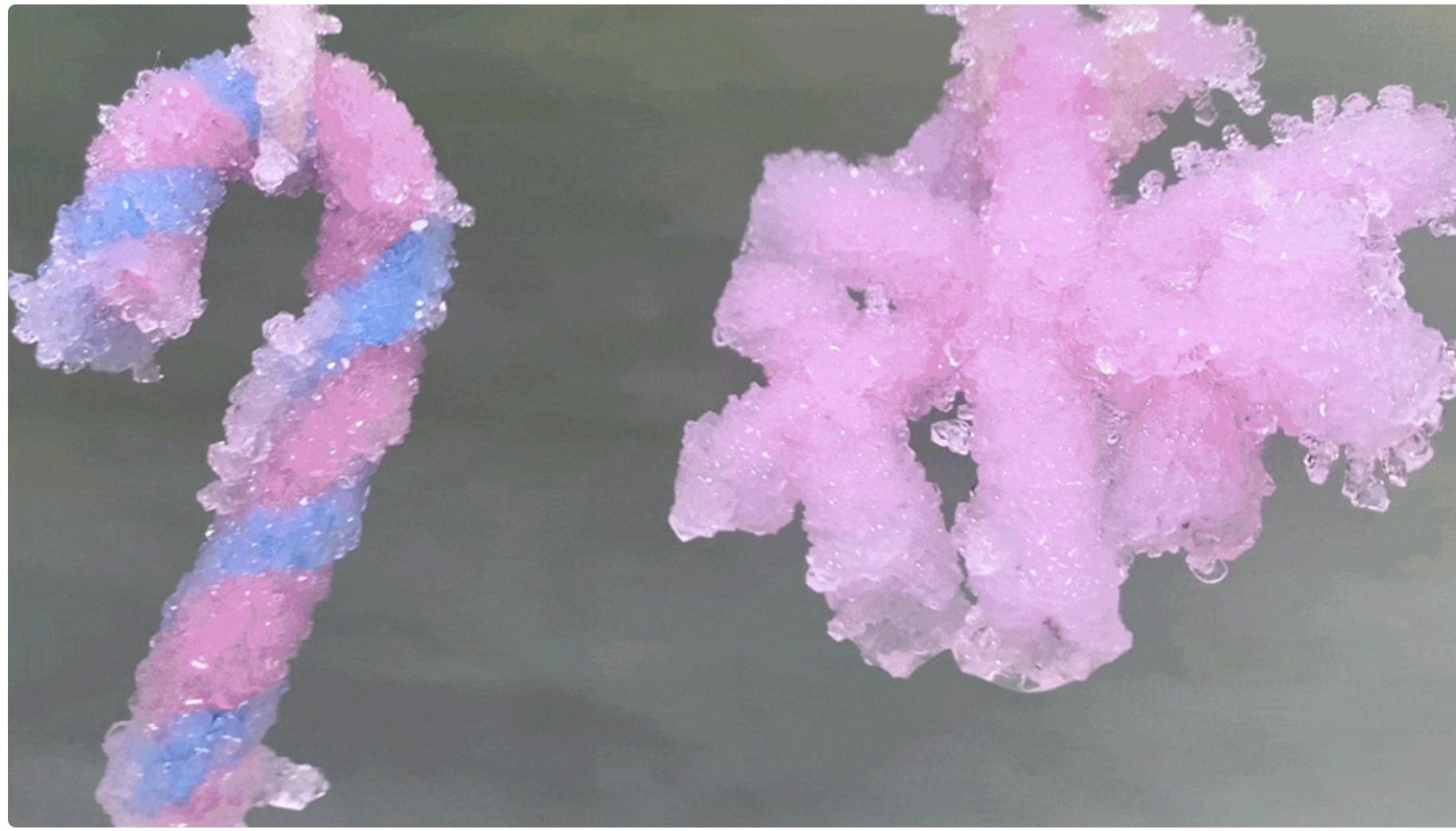
Ensure your creations are narrow enough or your jar opening is wide enough to easily remove your work after crystallisation. Make sure they're suspended in the jar, not resting on the bottom or touching the sides.



9. Pour the borax solution into the glass jar, ensuring the solution covers the snowflake and candy cane.



10. Let them sit for a few hours. As the water cools, we can see the crystals forming. Leaving it overnight or for longer will result in better crystallisation.



The Science Behind It:

Borax is a chemical substance that dissolves easily in water. Hot water can dissolve more borax than cold water because when heated, the distance between water molecules increases, leaving more space for borax. As the solution cools, the solubility of borax in water decreases, causing borax to precipitate out of the solution and crystallise on the surface of objects, forming a beautiful sparkling layer.