

Glass Sparkle! Make Your Own Stunning Decorations!

October 22, 2024 / DIY / STEM Activities / Chemistry / Age 9 - 12 / Glass Bottle Upcycling



Want to make your own unique pen holder or vase?
Try this fascinating experiment! You'll use string to cut a glass bottle in a cool way, creating an amazing piece of craft.

- Age: 9-12
- Time: 1 hour
- Messiness level: Messy

Materials Needed:

A fairly large container
Cold water
Glass bottle
Twine
Alcohol
Dropper
Scissors
Sandpaper (or any other sanding tool you can find)
Lighter
Safety goggles
Rubber gloves

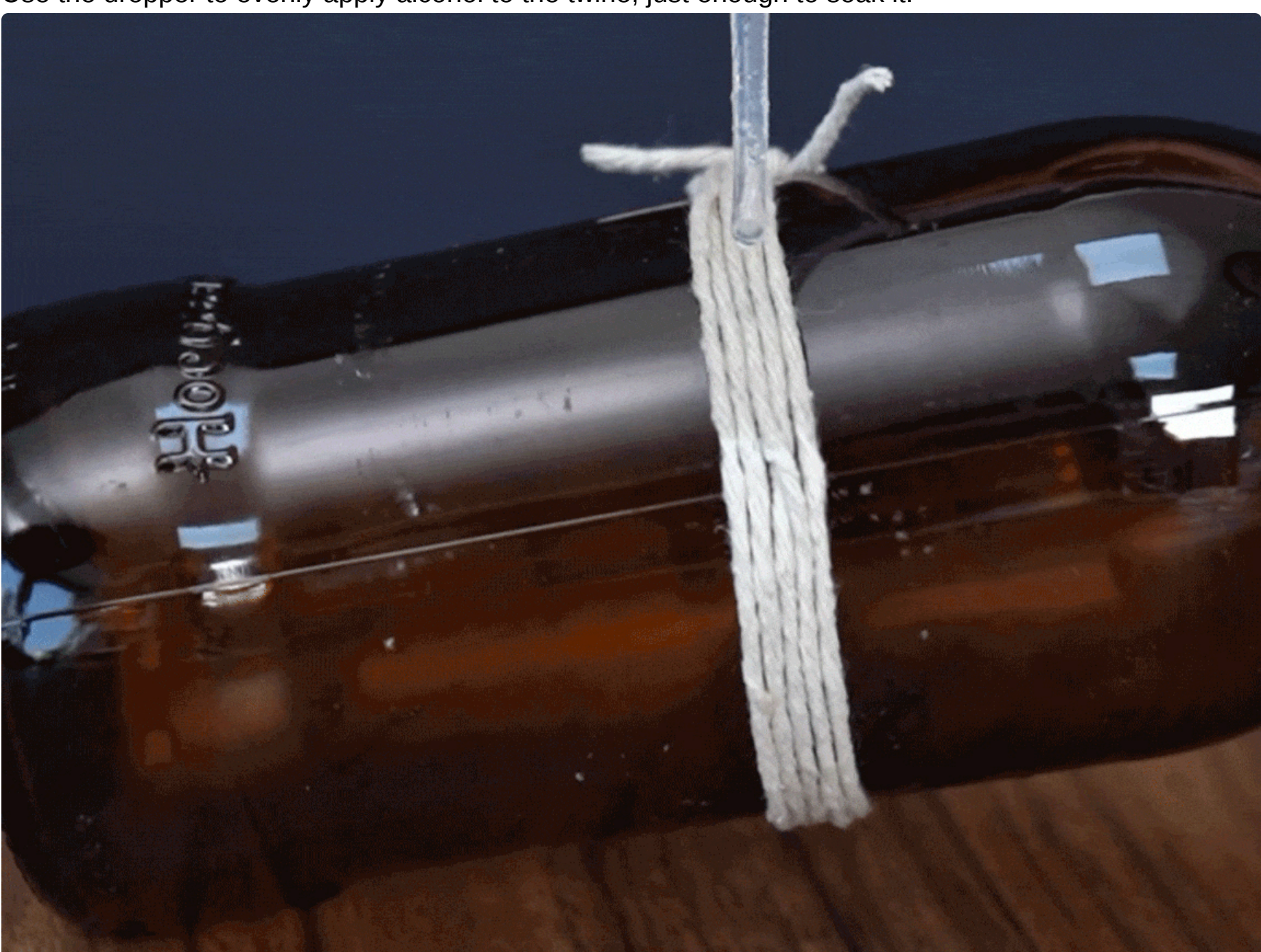


Step-by-Step Instructions:

1. Take a glass bottle and tightly wrap 3-5 loops of twine around the middle of the bottle. You can decide where to wrap based on how tall you want your pen holder to be.



2. Use the dropper to evenly apply alcohol to the twine, just enough to soak it.



3. Put on your safety goggles and carefully light the twine with a lighter. Rotate the bottle to heat it evenly. Let the flame burn for a while, about a few minutes. Watch the flame, and when it starts to diminish but hasn't gone out yet, place the glass bottle in cold water. The sudden temperature drop will cause the bottle to break at the heated area.



4. Carefully remove the glass bottle and sand the broken edge smooth with sandpaper or a sanding tool. (It's advisable to wear gloves and sand on wet sandpaper, or have an adult do this step.)



5. Wash the sanded glass bottle clean, and your homemade glass pen holder is ready! Of course, if you'd like to use it as a vase for flowers, that would be a great choice too.



The Science Behind It:

When the twine burns on the glass bottle, it creates a zone of thermal stress on the bottle's surface. The thermal expansion and contraction properties of glass mean that when it's suddenly cooled in cold water, stress develops at the heated areas, causing the glass to break in these regions.