

Candy Cane Strength Test

Collect

- Candy Canes*
- Ornaments of three different weights
- Reinforcement materials (cardboard, tape, etc.)
 - *If you don't have any to spare, you can make hooks by bending large paper clips.



Test the strength of a candy cane.

1. Holding the candy cane as a hook, attach the lightest ornament. Did it break?
2. Remove the lightweight decoration and hook on a heavier decoration.
3. If the candy cane is still intact, try attaching the heaviest decoration.

Make a sturdier cane.

4. Now that you know just how much weight a candy cane can hold, experiment with ways to make the candy cane stronger.
5. Try reinforcing candy canes with materials like cardboard, tape, ribbons, wrapping paper, or whatever else you have laying around the house after a morning of gift exchanging.

Retest!

6. Just like before, start with the lightest ornament. If the candy cane does not break, move on to the next heaviest decoration.
7. If the candy cane survives holding the weight of the even heaviest decoration, congratulations! The modifications that you made helped to reinforce the candy cane.

How does this work?

Engineers know that even strong materials like concrete and steel need to be reinforced. Reinforcement makes these materials stronger, stiffer, and more resistant to impact. For example, reinforced concrete is concrete that has metal bars and wires embedded inside. When combined, the metal and concrete act together as one super resistive material. In the candy cane experiment, the reinforced candy canes were able to resist the weight of tree decorations better than the candy without reinforcement.

