

2. Fill a plastic cup with tap water to a depth of 4–5 cm.
3. Cut the tapered end (tip) off the graduated pipet.
4. Use forceps to carefully slide 8–10 pieces of dry ice down the stem and into the bulb of the pipet.
5. Use a pair of pliers to clamp the opening of the pipet stem securely shut so that no gas can escape. Use the pliers to hold the tube and to lower the pipet into the cup just until the bulb is submerged, as shown in **Figure B**. From the side of the cup, observe the behavior of the dry ice.
6. As soon as the dry ice has begun to melt, quickly loosen the pliers while still holding the bulb in the water. Observe the CO_2 .
7. Tighten the pliers again, and observe.
8. Repeat Procedure steps 6 and 7 as many times as possible.

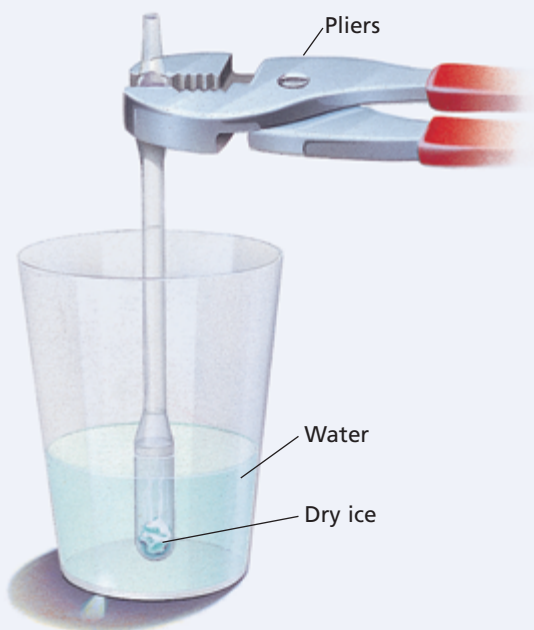


FIGURE B Clamp the end of the pipet shut with the pliers. Submerge the bulb in water in a transparent cup.

CLEANUP AND DISPOSAL

9. Clean all apparatus and your lab station. Return equipment to its proper place. Dispose of chemicals and solutions in the containers designated by your teacher. Do not pour any chemicals down the drain or place them in the trash unless your teacher directs you to do so. Wash your hands thoroughly before you leave the lab and after all work is finished.



ANALYSIS AND INTERPRETATION

1. **Analyzing Results:** What differences did you observe between the subliming and the melting of CO_2 ?
2. **Analyzing Methods:** As you melted the CO_2 sample over and over, why did it eventually disappear? What could you have done to make the sample last longer?
3. **Analyzing Methods:** What purpose(s) do you suppose the water in the cup served?

EXTENSIONS

1. **Predicting Outcomes:** What would have happened if fewer pieces of dry ice (only 1 or 2) had been placed inside the pipet bulb? If time permits, test your prediction.
2. **Predicting Outcomes:** What might have happened if too much dry ice (20 or 30 pieces, for example) had been placed inside the pipet bulb? How quickly would the process have occurred? If time permits, test your prediction.
3. **Predicting Outcomes:** What would have happened if the pliers had not been released once the dry ice melted? If time permits, test your prediction.