Figure 1: At the balance, place a weigh boat on the balance pan and press the bar at the front of the balance. This will zero out the weight of the boat.

Figure 2: Record the weight of the impure material that you are going to recrystallize into your lab notebook along with the unknown number.

Figure 3: Pour your solvent (15 to 20 mL of hot water) onto the solid and allow the material to dissolve (if more water is needed then you can add a little at a time). While your material is dissolving, you should be steaming a piece of fluted filter paper (hot filtration apparatus).
Figure 4: Once your material has dissolved in the water, **add a spatula tip of decolorizing carbon** and then carefully pour your material through a steamed filter paper. The flask that you are filtering into should have 5-10 mL of hot water in the flask to allow for steam formation. Also note from the picture the paper towel that has been wrapped around the neck of the Erlenmeyer flask. It allows you to: 1) handle a hot flask without burning yourself, and 2) it aids in pouring.

Figure 5: Note that some of the insoluble materials remained in the flask. Other insoluble materials were caught in the filter paper. Also note that this material was part of what was weighed in the initial starting mass. Its’ mass will decrease the overall yield.

Figures 6a and 6b: This is the material that has been through the filter paper. If necessary, reduce the volume of water in the solution on the hotplate. Remove the Erlenmeyer flask from the hotplate and allow the materials to cool SLOWLY. Please note that the hot Erlenmeyer flask is cooling on a lab notebook and NOT on the lab bench itself.

Figure 7: After the flask has cooled to ROOM TEMPERATURE, place the flask into an ice water bath and allow the crystals to chill. If this step is done while the solution is still warm or hot, you will get a lower yield and less pure material.
The next step is to pour the chilled crystals and their solution through the Büchner funnel. Make certain that the filter paper has been moistened with the same solvent that was used to recrystallize the solid [if you recrystallized from methanol, moisten the filter paper with methanol]. In this case, we used water, so use the DI water in the lab.

Figure 8a and 8b shows the filtering of the recrystallized material. It is important to have the filtration flask FIRMLY secured to the lab bench with a clamp; the Büchner funnel is top-heavy with the vacuum tubing attached and it can easily tip over.

Figure 9a and 9b: After the vacuum has pulled air through the crystals for at least 10 minutes, carefully transfer the crystals to a watch glass for additional drying in the oven. The next step is to weigh your crystals.

The last step is to collect the melting point data (single + Mixture melting points).