**Crystal Creator Worksheet Example Answer Key**

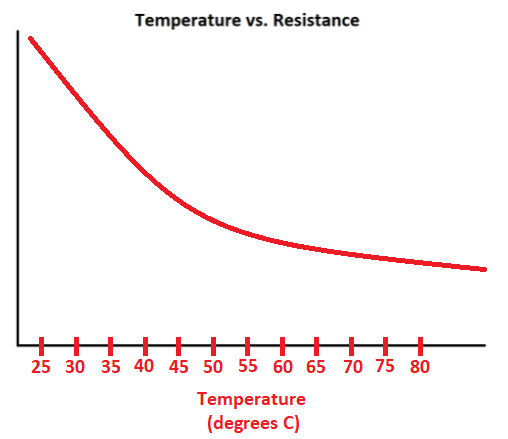
1. What type of crystal did your team grow?

0 % alum and 100% chrome alum

1. Fill in the resistance measurements for the following: temperatures going up from 20 degrees to 90 degrees in 5 degree increments and then temperatures coming back down from 90 degrees to 20 degrees in 5 degree increments.

|  |  |  |  |
| --- | --- | --- | --- |
| **Temperature**  **(20 to 90 deg)** | **Resistance**  **(ohms)** | **Temperature**  **(90 to 20 deg)** | **Resistance**  **(ohms)** |
| 20 |  | 90 |  |
| 25 |  | 85 |  |
| 30 |  | 80 |  |
| 35 |  | 75 |  |
| 40 |  | 70 |  |
| 45 |  | 65 |  |
| 50 |  | 60 |  |
| 55 |  | 55 |  |
| 60 |  | 50 |  |
| 65 |  | 45 |  |
| 70 |  | 40 |  |
| 75 |  | 35 |  |
| 80 |  | 30 |  |
| 85 |  | 25 |  |
| 90 |  | 20 |  |

1. Graph your temperature vs. resistance data.



1. What relationship does temperature have with resistance? Why do you think that relationship exists?

As temperature increases resistance decreases. I think this happens because the electrons gain energy when the temperature increases so they have more energy to reach the conductive band.

1. Hypothesize: What do you think you should change to decrease the resistance of your crystal? Why?

To decrease the resistance of the crystal I think the crystal needs to be more red because different colors have different band gap sizes.