



Subject: Chemistry

Name:

Worksheet: Temperature Changes in Dissolving

Date:

Grade-Section: 7CS

Objective: In this activity, you will place a thermometer in water and then add ammonium chloride and copper chloride to find out how does energy changes when they dissolve in water.

Planning:

What variable will you change in this investigation? (Independent variable)

.....

What variable will you measure in this investigation? (Dependent variable)

.....

How will you make your investigation a fair test?

1.

2.

3.

Materials:

Ammonium chloride.

Copper chloride

Water

beakers

Graduated cylinder

Thermometer

Top-pan balance



Procedure:

1. Label two beakers with the names of the salts you will investigate.

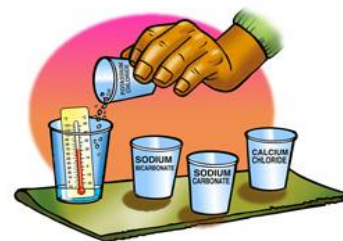
2. Weigh ...**2**..... g of ammonium chloride and place it in its labeled beaker.

3. Measure**20**..... mL of water and place a thermometer in it. **Record this initial temperature** in the chart on the activity sheet.

4. Pour the ammonium chloride into the water and swirl the cup. Watch the thermometer.

5. When the temperature stops changing, **record the final temperature**.

6. Repeat steps 2–5 for the other salt.



Results

Substance	Initial temperature °C	Final Temperature °C	Change in temperature °C
ammonium chloride			Final temp- Initial temp. The reading will be a negative number (drop in the temperature) endothermic change.
Copper chloride			Final temp- Initial temp. The reading will be a positive number (rise in the temperature) exothermic change.

Conclusion

- ✓ Energy is required to pull apart atoms, ions, or molecules that are attracted to each other. But when atoms, ions, or molecules come together, energy is released.

Planning:

What variable will you change in this investigation? (Independent variable)

.....**Type of salt**.....

What variable will you measure in this investigation? (Dependent variable)

.....**Change in temperature of water**.....

How will you make your investigation a fair test?

1. ...**Use the same volume of water**.....
2. ...**Use the same mass of salt**.....
3. ...**Same stirring duration and rate (speed)**.....

