

Sparkling Star Dip

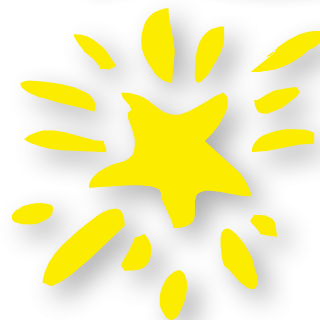
Number Correct _____

Total Points _____

Name _____ Hour _____

Materials

- Borax
- Water
- Pipe cleaner
- String
- Ruler
- Styrofoam cup
- Popsicle stick



Procedure

• Preparing the cup

1. Bend the pipe cleaner into the shape of a star or the shape of your choice.
2. Attach one end of the string to the pipe cleaner. Tie the other end of the string to the popsicle stick so the shape hangs in the cup without touching the sides or bottom.
3. Write the names of group members on the styrofoam cup.
4. Place a mark on the inside of the styrofoam cup, 6 cm from the bottom of the cup.

• Preparing the Borax Solution

1. Adjust the ring stand so the bottom of the screen will be just above the flame.
2. Measure 100 ml of water and pour it into the beaker.
3. Measure 10 grams of borax powder and add it to the water in the beaker.
4. Light the bunsen burner and place the beaker on the screen.
5. Record the temperature of the water when no borax powder remains on the bottom of the beaker.
6. Add 10 more grams of borax.
7. Continue stirring and record the temperature when no borax is visible on the bottom of the beaker.
8. Repeat with an additional 5 grams of borax powder.
9. Pour the borax solution into the styrofoam cup until the liquid level is at the mark you made inside the cup.
10. Place the pipe cleaner shape into the solution.
11. Carefully carry the cup to the designated spot for your hour.
12. Clean up your lab station.

13. Graph your data using a line graph.

Data

Borax	Temperature
10 g	
20 g	
25 g	

Questions

Day 1:

1. When you placed the first 10 g of borax into the water did it all dissolve BEFORE you heated it? _____
2. What did the heat do to the particle spacing of the water molecules?

3. As a result of the change in question #2, what happened to the original 10 g. of borax powder that you added to the water? _____

Day 2:

4. What formed on the pipe cleaner in the cup overnight?

5. What happened to the heat energy of the water overnight?

6. As a result of the change in question #5 what happened to the particle spacing of the water molecules? _____
7. As a result of the change in question #6 what happened to the borax that was dissolved in the water? _____
8. Check the level of the liquid in the cup. What phase change caused the difference in the level of the liquid? _____
9. What is the solvent in this lab? _____
10. What is the solute in this lab? _____
11. What happened to the solubility of the borax as the temperature increased?

12. Using the data from your graph, determine the solubility of borax at 70 ° C.

13. Using the data from your graph, determine the temperature at which 15 grams of borax will dissolve completely. _____