

## THERMAL ENERGY

### Borax Crystal Ornaments

#### Materials:

Pan  
Pipe Cleaner  
½ cup of Borax  
Hot Plate  
Craft Sticks  
Plastic cup  
String  
2 cups of water



#### Procedures:

1. Pour ½ cup of Borax into 2 cups of water in a pan. **Boil** until it dissolves. It will look clear.
2. When your solution looks clear – you have reached saturation. Take it off the hot plate and set it aside.
3. Twist a piper cleaner into whatever shape you'd like. It must fit in your cup. You can use different colors of pipe cleaners and twist them together – the crystals are clear so the color of the pipe cleaners will show through.
4. Tie a piece of string to the top of your decoration. This will suspend the pipe cleaner in the cup.
5. Tie the string on your decoration around the middle of a craft stick.
6. Hang your pipe cleaner creation in a cup and slowly pour the borax and water solution into the cup.
7. Make sure your pipe cleaner is fully submerged in the mixture.



8. Put your cup and ornament in the **freezer**. It will form crystals quicker if freezing but will still take several hours. You can leave it in the freezer for the day or for the entire holiday break.
9. **DO NOT DUMP ANY EXTRA LIQUID DOWN THE SINK!!!** Dump extra liquid into the beaker up front so others can use it if they need more.

## Plastic Christmas Ornaments

### Materials:

Permanent Markers

Dixie Cups

Heat Gun

Pliers

Hole Punch

### Procedure:

1. Use the permanent markers to color your cup and decorate it.
2. Be sure and color the sides of the cup and the top of the cup.
3. Use the hole punch to put a hole on one side of the cup towards the top.
4. Use pliers to hold the edge of the cup.
5. Use the heat gun to melt the cup and flatten it.

