1. When activated, a solute inside a cold or hot pack dissolves in water. The characteristics of the solute determine whether energy will be released or absorbed in the form of heat as the solute dissolves.

2. 

<table>
<thead>
<tr>
<th>Substance from the ...</th>
<th>Temp increase or decrease?</th>
<th>Endothermic / Exothermic?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold pack</td>
<td>Decrease</td>
<td>Endothermic</td>
</tr>
<tr>
<td>Hot pack</td>
<td>Increase</td>
<td>Exothermic</td>
</tr>
</tbody>
</table>

3. Answers will vary, but should include things like amount of solute, amount of water, method of mixing, timing, etc.

   The only variable that should be changed is the identity of the solute.

4. Potassium chloride

5. Calcium chloride.


   The arrows show that more energy is released when the water molecule associate with the solute than is absorbed when the solute is pulled apart. This process is therefore exothermic.

   Endothermic.

   The arrows show that more energy is required to pull the solute apart than is released when water associates with the solute. Because more energy is absorbed than is released, this process is endothermic.

7. Energy is released when bonds are formed to create the crystal.

8. It could be that there is an increase in energy when isopropyl alcohol is dissolved in water because more energy is released when isopropyl alcohol molecules associate with water than is required to pull isopropyl alcohol molecules apart from one another.