

## Chapter 2, Lesson 4 Activity Sheet Answers

1. When the water in the container freezes, the container suddenly bursts. This happens because when water freezes, it takes up more room than the same amount of liquid water. The frozen water pushes so hard against the inside of the container that the container breaks.
2. During a cold winter, pot holes form because water that is in little cracks in the road freezes and expands and makes the cracks bigger. Cars and trucks going over these cracks make them even bigger and more water gets in and freezes. Eventually, a pot hole forms.
3. After adding ice and salt to the can and stirring, the outside of the can has frost and water on it.
4. When water vapor molecules from the air contacted the cold can, they transferred some of their energy to the can which caused the water vapor molecules to slow down. Their slower motion allows their attractions to bring them together as liquid water. If they slow down enough they can form ice.
5. The water was near the top of the can and the ice was below. The water is at the top because it is not quite as cold so the water does not become ice.

6.

<b>Compare molecules in water and ice</b>		
	<b>Water</b>	<b>Ice</b>
Speed of molecules	<b>Faster</b>	<b>Slower</b>
Amount of movement	<b>Move past each other</b>	<b>Remain in fixed positions</b>
Arrangement of molecules	<b>Random and unorganized</b>	<b>Very organized</b>
Distance between molecules	<b>Closer together</b>	<b>Slightly further apart</b>

7. Water molecules are attracted to each other and move past each other. As they get colder they slow down and their attractions bring them together into fixed positions. In the crystal structure of ice, the water molecules are spread a little farther apart than in liquid water.
8. Liquids have different freezing points because the molecules of different liquids attract each other by different amounts. It takes a different low temperature to cause the molecules of different substances to attract each other to the point where they no longer can slide past each other and instead, be held in fixed positions as a solid.
9. The attractions between nitrogen molecules must be weak because they have to be cooled so much to be slowed down enough that their attractions can hold them together.
10. During deposition, a gas changes directly to a solid without changing first to a liquid.