

**This is BCE#8.**

I recommend you print out this page and bring it to class. [Click here](#) to show a set of five BCE8 student responses randomly selected from all of the student responses thus far in a new window.

John , here are [your responses](#) to the BCE and the [Expert's response](#).

1. Below are two movies (#1 and #2) watch each one and describe what you observe happening. In your description use terms like solid, liquid, solute, solvent, heterogeneous mixture, and homogeneous mixture.

<p>movie #1</p>	<p>movie #2</p>
<p>Flakes of a yellow solid were added to a colorless liquid. The solid solute dissolved in the colorless solvent to form a homogeneous mixture/solution.</p> <p>A solid solute is added to a liquid solvent and the solid dissolves. The mixture that is formed is homogeneous. That is it appears uniform throughout.</p>	<p>Flakes of a yellow solid were added to a colorless liquid. The solid solute did not dissolve in the colorless solvent forming a heterogeneous mixture.</p> <p>A solid solute is added to a liquid solvent and the solid does not dissolve. The mixture that is formed is heterogeneous. The mixture is not uniform.</p>

2. For the following three substances indicate whether each is polar or nonpolar, and the type of intermolecular attractive force(s) (IMAF) that occur.

Substance	Polarity	Most important IMAF
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hexane, C <sub>6</sub> H <sub>14</sub>	non polar nonpolar	LDF dispersion forces
water, H <sub>2</sub> O	polar polar	hydrogen bonding hydrogen-bonding
carbon tetrachloride, CCl <sub>4</sub>	non polar nonpolar	LDF dispersion forces

3. In movie #3 water is added to a sample of carbon tetrachloride that has a colored substance already dissolved in it. Describe what you observe happening. In your description use terms like liquid, heterogeneous mixture, and homogeneous mixture.

movie #3	<p>water is added to carbon tetrachloride, that has a colored substance dissolved in it. The water does not mix with the carbon tetrachloride even after shaking the mixture, the two liquids are insoluble. Water is less dense compared to the carbon tetrachloride.</p> <p>Water is added to a sample of carbon tetrachloride (that has a colored compound already dissolved in it). The water and carbon tetrachloride form a heterogeneous mixture. The water is the top layer because it is less dense compared to carbon tetrachloride. The colored compound is more soluble in carbon tetrachloride than in water.</p>
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4. In movie #4 hexane is added to a sample of carbon tetrachloride that has a colored substance already dissolved in it. Describe what you observe happening. In your description use terms like liquid, heterogeneous mixture, and homogeneous mixture.

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**movie #4**

**The hexane liquid dissolves in the carbon tetrachloride. Also the color substance dissolved in the carbon tetrachloride is also soluble in hexane.**

**Hexane is added to a sample of carbon tetrachloride (that has a colored compound already dissolved in it). The hexane and carbon tetrachloride form a homogeneous mixture (a solution). Since the solution is uniform there are no separate layers. The colored compound appears to be equally soluble in hexane and carbon tetrachloride.**

**5. All three liquids are present in this video, and they are mixed. can you explain what happens?**

**movie #5**

**when the sample is mixed the hexane, the colorless liquid that makes up the top layer, dissolves in the carbon tetrachloride layer, so three layers become two.**

**The test tube initially contains three layers; hexane (the least dense) on top, water and then carbon tetrachloride (that has a colored compound already dissolved in it). When the test tube is shaken the hexane and carbon tetrachloride form a homogeneous mixture (a solution). Water is not soluble in either hexane or carbon tetrachloride, and since its density is less than the hexane/carbon tetrachloride mixture it is the top layer. The colored compound appears to be equally soluble in**

hexane and carbon tetrachloride.

**6. Is there anything about the questions that you feel you do not understand? List your concerns/questions.**

nothing

**7. If there is one question you would like to have answered in lecture, what would that question be?**

nothing