

1. Oxygen,  $O_2$ , is slightly soluble in water.
  - a. What intermolecular forces exist between water molecules and oxygen molecules?
  
  
  
  
  
  
  
  
  
  
  - b. Why is oxygen only slightly soluble in water? Base your answer on a description at the nanoscale.

2. Which of the following do you expect to be most soluble in water?



Explain your reasoning.

3. Which of the following is most soluble in the nonpolar solvent hexane?



Explain your reasoning.

4. Based on your experiences do you think table sugar molecules are polar or nonpolar?

**POLAR**

**NONPOLAR**

Explain your reasoning.

5. Based on your experiences do you think vegetable oil molecules are polar or nonpolar?

**POLAR**

**NONPOLAR**

Explain your reasoning.