

## GETTING STARTED

### REFLECT ON YOUR LEARNING

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1. (Sample response) Organic compounds are similar in structure, similar in types of atoms, similar in size, and similar in chemical reactivity.
2. Solubility: “like dissolves like;” compounds that have large nonpolar components tend to be soluble in nonpolar solvents; and compounds that have small nonpolar components and polar groups such as C=O, OH, or NH groups tend to be soluble in polar solvents  
Melting and boiling points: compounds with strong intermolecular attractions tend to have higher melting and boiling points because more energy is required to separate the molecules.
3. (Sample response) “Organic” means made by plants or animals; compounds that contain carbon atoms; grown without use of synthetic materials.

### TRY THIS ACTIVITY: KEEPING BABY DRY WITH POLYMERS

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- (a) The addition of table salt causes some of the water to come out of the gel because the presence of sodium ions reduces the attraction of water to the polymer, and thus reduces absorbency. The addition of sucrose or calcium chloride does not produce any change because no sodium ions are added.
- (b) Determine the mass of a dry diaper. Add a few millilitres of water to the absorbent surface of the diaper, then hold the diaper vertically and note whether any leakage occurs. Repeat until the first sign of leakage of water occurs. Determine the mass of the wet diaper. Subtract the mass of the dry diaper from the mass of the wet diaper to obtain the mass of water absorbed. Calculate the volume of water absorbed, using the density of water (1.0 g/mL).

## 3.1 HYDROCARBONS

### TRY THIS ACTIVITY: HYDROCARBONS ARE MADE OF...

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- (a) The black powder formed is soot: pure carbon.

### PRACTICE

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1. (a)  
$$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H} - \text{C} - \text{C} - \text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$$
  
(b)  
$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ | \quad | \quad | \quad | \quad | \\ \text{H} - \text{C} - \text{C} - \text{C} - \text{C} - \text{C} - \text{H} \\ | \quad | \quad | \quad | \quad | \\ \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$$
  
(c)  
$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ | \quad | \quad | \quad | \quad | \quad | \\ \text{H} - \text{C} - \text{C} - \text{C} - \text{C} - \text{C} - \text{C} - \text{H} \\ | \quad | \quad | \quad | \quad | \quad | \\ \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$$