

6. (a) Methane  
(b) Natural gas  
(c) For example: heating
7. Carbon, hydrogen, oxygen
8. A solvent is a liquid that can dissolve other substances.
9. (a) Solvent  
(b) Fuel  
(c) Sterilizer
10. (a), (b), and (c) In each case, the alcohol has one oxygen atom in addition to the same number of carbons and hydrogens.

### Understanding Key Ideas

11. (a) Organic  
(b) Organic  
(c) Inorganic  
(d) Organic  
(e) Inorganic  
(f) Organic

### Pause and Reflect Answer

Students' answers may include some of these points.

- Each style of representing an organic compound emphasizes a slightly different aspect of the molecule: a molecular formula reveals only how many of each kind of atom is present, the structural formula shows which atoms are connected to which other atoms, the ball-and-stick model shows how atoms are oriented in space, and the space-filling models shows the shape of the molecule as a whole.
- The simpler the model, the less information it conveys, but it is simpler to draw. More complex models convey more information but can become unwieldy to use.

### Other Assessment Opportunities

- BLM 2-31, Chapter 5 Quiz
- Assessment Checklist 10, Computer Slide Show Presentation
- Assessment Checklist 11, Poster
- Assessment Checklist 25, Safety Checklist
- Process Skills Rubric 1, Developing Models
- Assessment Rubric 5, Conduct an Investigation Rubric
- Assessment Rubric 8, Research Project Rubric
- Assessment Rubric 11, Communication Rubric

## CHAPTER 5 ASSESSMENT, p. 252-253

### ■ PREPARE YOUR OWN SUMMARY

Student summaries should incorporate the following main ideas.

1. Some Compounds Can Be Classified as Acids or Bases
  - The pH scale is a numerical scale in which 7 represents a neutral solution, less than 7 is acidic, and more than 7 is basic and in which a 1-unit decrease in pH is a 10-fold increase in acidity.
  - Acid-base indicators can be used to measure the pH of a solution.
  - Common acids have an H on the left of their formulas and are named according to a standard system of rules.
  - Common bases have an OH on the right of their formulas and are named according to a standard system of rules.
  - Acids and bases can be distinguished by their properties (taste, feel, reactivity with metals, effect on indicators) and also have the ability to neutralize each other.
2. Some Compounds Can Be Classified as Salts
  - A salt is the product of the neutralization reaction between acid and a base.
  - Solutions made from the oxides of metals are basic. Solutions made from the oxides of non-metals are acidic.
  - Acids react with metals to produce a salt and hydrogen gas.
  - Acids react with carbonates to produce a salt, carbon dioxide, and water.
3. Compounds Can Be Classified as Organic or Inorganic
  - Organic compounds are the compounds of carbon excluding carbonates, carbides, and oxides of carbon.
  - Inorganic compounds are made up of all compounds that are not organic.
  - Organic compounds can be represented using molecular formulas, structural formulas, shortened structural formulas, and space-filling models.
  - There are several classes of organic compounds, including hydrocarbons and alcohols.