CHECK YOUR LEARNING

Suggested Answers

1. **(a)** Sample answer: I thought rust was the brown stuff that formed on metal when I left things in the yard overnight.
   (b) Sample answer: I now know that corrosion is a reaction in which the outer surface of metal forms a layer of a new compound. Rust is a form of corrosion that ends up breaking down the metal and forming the "brown stuff" on the metal's surface. Before this lesson I didn't know that there was a difference between rust and corrosion. I thought they were the same thing.
2. **(a)** Sample answer: Corrosion is the breakdown of metals due to chemical reactions.
   (b) Rusting is a specific type of corrosion.
3. **(a)** Water and oxygen react to form rust.
   (b) The addition of electrolytes (such as salt) can speed up rusting once it starts.
4. Sample answer: After sitting out in the rain, the steel soup can will be very corroded and the aluminum soda can will not be as corroded, if it is at all. Steel is a metal with no protective covering. It is exposed to the rain, heat, and sunlight. Most soup cans are not coated with protective material to prevent the steel from corroding. The aluminum can is less likely to corrode. When aluminum corrodes, it produces aluminum oxide, which acts as a protective coating and prevents further corrosion.
5. If it is not clean and dry then the rust proof coating will trap small particles of dirt and water between the surface and the coating. This will produce weak spots in the coating and can lead to more direct rusting at those points.
6. There is no salt used on the roads in the Caribbean in the winter, whereas in Canada, the winters require the use of salt and sand on the roads. This salt can speed up corrosion on the body of a car once it starts happening.
7. Galvanized steel has been treated to prevent corrosion. This is useful for products used outside which are exposed to the rain and air.