CONNECTIONS TO ALGEBRA

How does water pressure affect a scuba diver?

CHAPTER 1

APPLICATION: Scuba Diving

On the surface of Earth only the atmosphere is pressing on you. When you dive under the water, the weight of the water also presses on you. The volume of air in your lungs gets squeezed by these forces.

To design equipment for a dive, people need to know what the variables are, such as the depth of a dive and the dive time. You'll learn to write mathematical models for such real-life problems in Chapter 1.

Think & Discuss

The table shows that for every 10 feet a diver descends, the weight of the water on the diver increases by about 4.45 pounds per square inch.

Depth (feet)	Additional Pressure (pounds per square inch)
10	4.45
20	4.45×2
30	4.45×3
40	4.45×4

1. You are diving at a depth of 40 feet. What is the pressure of the water on you?
2. Use the pattern in the table to predict the pressure of the water on a diver at 100 feet.

Learn More About It

You will learn more about diving and water pressure in Example 3 on page 48.

INTERNET **APPLICATION LINK** Visit www.mcdougallittell.com for more information about scuba diving.