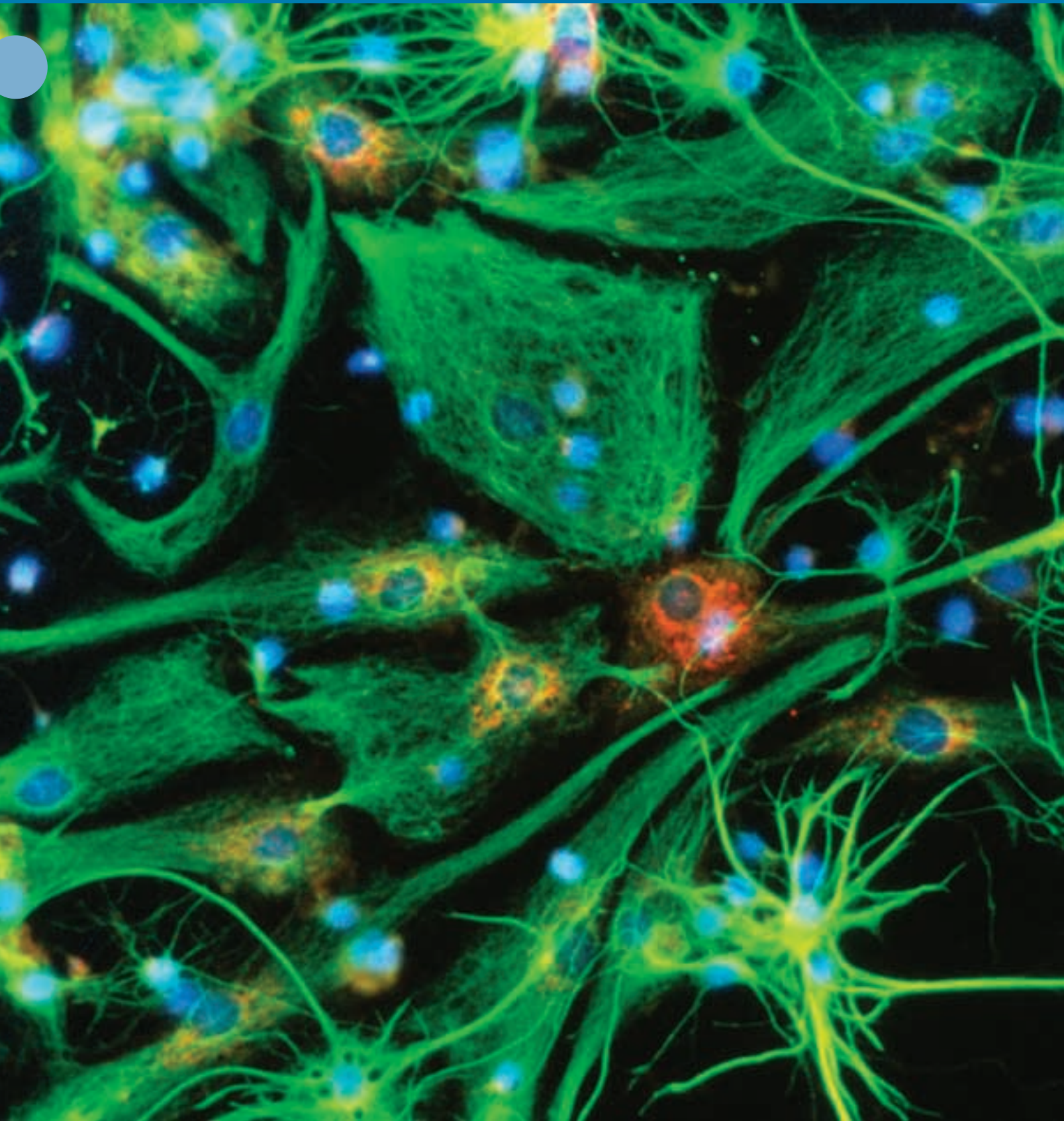


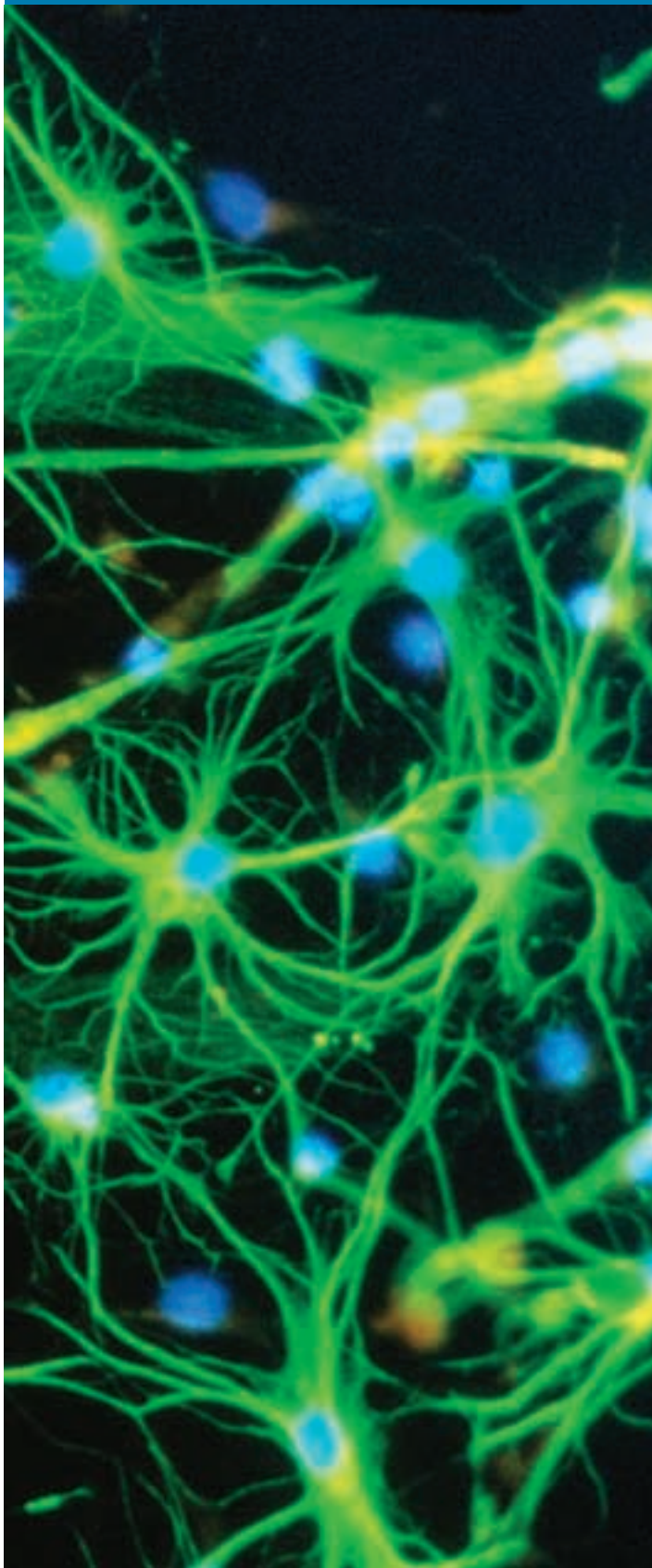
# 1

Cells are the basic unit of life and often combine with other cells to form tissues.





Astrocytes (light green) are star-shaped cells in the brain and spinal cord.



## Skills You Will Use

In this chapter, you will:

- examine cells under a microscope to identify the various stages of mitosis in plants and animals
- examine different plant and animal cells under a microscope, and draw labelled biological diagrams to show how the cells' organelles differ
- investigate, using a microscope, specialized cells in the human body or in plants, focussing on different types of cells, and draw labelled biological diagrams to show the cells' structural differences
- investigate the rate of cell division in cancerous and non-cancerous cells using pictures or images, and predict the impact of this rate of cell division on an organism

## Concepts You Will Learn

In this chapter, you will:

- describe the cell cycle in plants and animals, and explain the importance of mitosis for the growth of cells and repair of tissues
- explain the importance of cell division and cell specialization in generating new tissues
- explain the links between specialized cells and tissues in plants and animals

## Why It Is Important

An important step in understanding how your body works is understanding the cell. Your body is made of trillions of cells.

### Before Reading



#### Set a Goal to Understand New Vocabulary

To understand the content of this chapter, you will need to understand many new terms. How many words in the following list of key terms do you recognize? Preview section 1.1, and note the terms in bold print. Make a two-column chart, recording new terms in the first column. Add definitions or explanations in the second column as you read.

#### Key Terms

- anaphase • cell • concentration • differentiation • diffusion
- meristematic cells • meristematic tissue • mesophyll
- mitosis • organelle • phloem • prophase • red blood cells
- regeneration • stomate • tissue • xylem