Name_____ Class_____ Date_____

Section 1–4 Tools and Procedures (pages 24–28)

TEKS FOCUS: 1A Lab Safety; 2A Equipment and Technology; 2B Make Measurements; 2C Analyze Data

This section describes the measurement system that most scientists use. It also describes light microscopes, electron microscopes, and laboratory techniques.

A Common Measurement System (page 24)

1. Why do scientists need a common system of measurement? _____

_____

_____

2. When collecting data and doing experiments, what system of measurement do most scientists use? _____
3. What is the metric system? _____

_____

_____

4. Complete each equation by writing the correct number or metric unit.
   - **a.** 1000 meters = 1 _____
   - **b.** 1 liter = _____ milliliters
   - **c.** 1 gram = _____ milligrams
   - **d.** 1000 kilograms = 1 _____

Analyzing Biological Data (page 25)

5. When scientists collect data, what are they often trying to find out? _____

_____

_____

6. What does a graph of data make easier to recognize and understand than a table of data? _____

Microscopes (pages 25–26)

7. What are microscopes? _____

_____

8. What are compound light microscopes? _____

_____

_____

9. How do chemical stains make light microscopes more useful? _____

_____

Name_____ Class_____ Date_____

10. What are the two main types of electron microscopes?

a. _____

b. _____

11. Compare how a TEM and an SEM produce images. _____

_____

_____

_____

12. How must samples be prepared for observation by an electron microscope?

_____

Laboratory Techniques (page 27)

13. A group of cells grown in a nutrient solution from a single original cell is called a(an) _____.

14. What technique do biologists use to separate one part of a cell from the rest of the cell?

_____

Working Safely in Biology (page 28)

15. What is the single most important rule for your safety while working in a laboratory?

_____

_____