

Directed Reading B *continued*

19. Why do scientists try to test many individuals?

So that experimental errors will not give the wrong results in a small sample size or few amount of tests. The results will be more statistically accurate with a large sample size (many individuals)

20. What is one way that scientists can support their conclusions?

With many other independent trial experiments conducted by other scientists.
Then the other scientist's data will also support their conclusions.

ANALYZE THE RESULTS

21. How might a scientist organize data in order to analyze them?

Scientists will organize the data into charts and graphs.

22. What does analyzing the results help a scientist to do?

make conclusions based on the data

DRAW CONCLUSIONS

a. 23. What did the UV light experiment prove about frog deformities?

- a. that they can be caused by UV light
- b. that they cannot be caused by UV light
- c. that the deformities of frogs in Minnesota were definitely caused by UV light
- d. that no Minnesota frogs were harmed by UV light

24. Why is proving that a hypothesis is wrong just as helpful as supporting it?

The scientist may have to change his question and hypothesis and do a different experiment.

25. Finding an answer to a question often leads to a hypothesis.

COMMUNICATE RESULTS

26. What are two reasons that scientists share their results?

So they can get credit for the research.
Also so that other scientists can add more knowledge to the subject area.

Skills Worksheet

Directed Reading B

Section: Tools and Measurement (pp. 20–25)

1. What do life scientists use tools for?

measure living things

TECHNOLOGY IN SCIENCE

2. What is technology?

tools and machines and electronic devices that were built by engineers based on scientific theories.

3. What are two ways that computers and calculators help scientists?

computers help to store and organized the data and calculators help to calculate the results.

4. What is another way in which scientists use computers?

Use the internet to communicate the results.

Match the correct description with the correct term. Write the letter in the space provided.

b.

5. bounces electrons off the surface of a specimen to produce a three-dimensional image

e.

6. passes electrons through a specimen to produce a flat image

a.

7. uses light and lenses to magnify small objects so they can be seen

d.

8. focuses a beam of electrons to magnify small objects

c.

9. is used by scientists to make observations from a distance

a. compound light microscope

b. scanning electron microscope

c. binoculars

d. electron microscope

e. transmission electron microscope