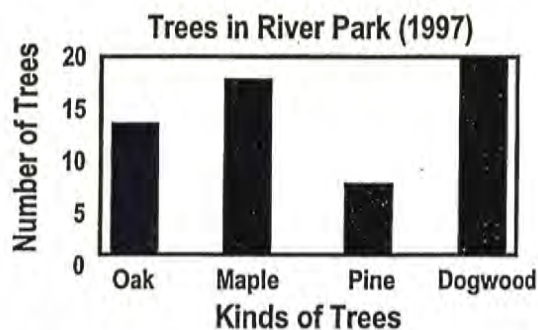
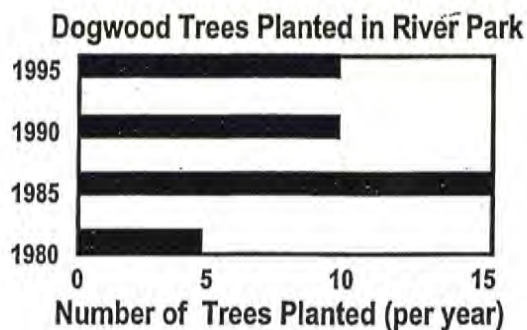


CHAPTER 1 REVIEW

Choose the best answer.

1. Keisha observes goldfish in an outdoor pond. The goldfish seem to be more active when the weather is warm than when it is cold. She asks herself, how do temperature changes affect goldfish? If she were to do an experiment, which of the following would be the best hypothesis?
 - A. Do goldfish like warm water or cold water?
 - B. Goldfish are more active in warm water than in cold water.
 - C. Goldfish live in warm and cold water.
 - D. Temperature changes will kill goldfish.
2. For a science project, Hans conducted a taste test on 4 types of regular cola. As part of his research, he determined the percentages of the main ingredients in each cola. He found that the percent of sugar in the colas strongly correlated with taste preference. He wanted to present the data showing the percentages of main ingredients of each cola as a main part of his project. Which of the following would be the best way to present this data?
 - A. in separate pie charts
 - B. in a multiple line graph
 - C. in a short paragraph summarizing each percentage
 - D. in a data table
3. Four groups of rats are tested in a lab. Group 1 is given a special hormone for muscle growth. Group 2 is given a special multivitamin diet. Group 3 receives both the hormone treatment and the multivitamin diet. Group 4 does not receive any extra treatment or special diet. Which of the following groups is the control group for this experiment?
 - A. group 4
 - B. group 2
 - C. group 3
 - D. group 1
4. In a previous experiment, Josh determined that the growth of goldfish depends on the size of the container they are in. Now, Josh wants to know if the number of goldfish in a container affects the growth of goldfish. To conduct his experiment, he placed 10 goldfish in a 20 gallon aquarium, 5 goldfish in a 10 gallon aquarium, and 1 goldfish in a 1 gallon aquarium. All the goldfish received the same food in equal amounts. He recorded goldfish growth over a 10 week period. From his data, he concluded that the more goldfish in an aquarium, the larger they grow. Why was his conclusion not valid?
 - A. His data was skewed because he should have put the 10 goldfish in the 1 gallon aquarium and the 1 goldfish in the 20 gallon aquarium.
 - B. His data was not valid because he failed to control the size of the aquariums equally for all the groups.
 - C. His data was valid, but he should not make a conclusion based on just one experiment.
 - D. His new experiment assumed the validity of a past experiment.

Study the bar graphs below, and answer questions 5-7.



5. How many dogwood trees were in the park in 1997?
A. 20
B. 15
C. 10
D. 5
6. What is the total number of dogwood trees planted between 1980 and 1995?
A. 5
B. 15
C. 30
D. 40
7. What percent of the total dogwood trees planted remained alive in 1997?
A. 25%
B. 50%
C. 75%
D. 100%

Study the table below and answer questions 8-11.

Incubation Temperature of Turtle Eggs Versus Sex of Hatchling				
Four Groups of 25 Eggs	Temperature	Number of Male	Number of Female	Eggs Not Hatched
Group 1	26°C	21	2	2
Group 2	28°C	13	11	1
Group 3	30°C	1	19	5
Group 4	32°C	1	20	4

8. At what temperature did most of the turtle eggs hatch?
A. 26°C B. 28°C C. 30°C D. 32°C
9. What temperature produced the most females?
A. 26°C B. 28°C C. 30°C D. 32°C
10. What temperature produced the most males?
A. 26°C B. 28°C C. 30°C D. 32°C

11. What conclusion can be made about the relationship between incubation temperature and the number of male hatchlings in comparison to incubation temperature and the number of female hatchlings?
- A. Higher temperatures during incubation produce more males, and lower temperatures during incubation produce more females.
 - B. Higher temperatures during incubation produce more females, and lower temperatures during incubation produce more males.
 - C. Higher temperatures during incubation caused more eggs to hatch.
 - D. No relationship can be determined between incubation temperature and the sex of turtle hatchlings.

Read the Science Experiment below, and then answer the questions that follow.

Science Experiment On Bean Plants

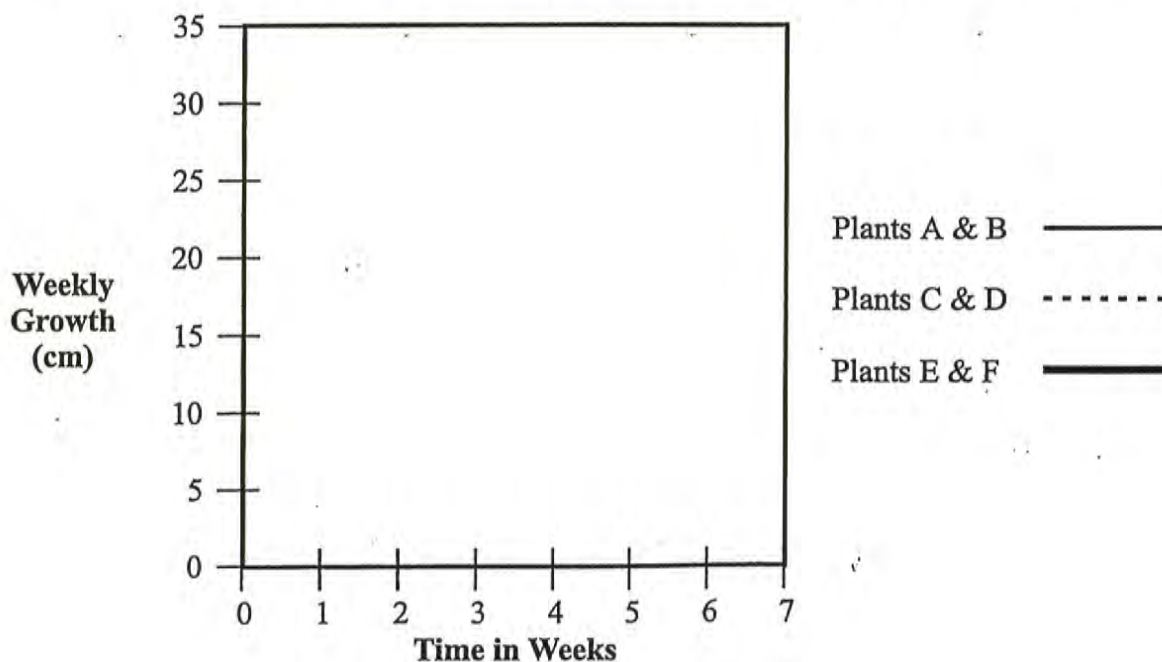
- Problem:** Some green bean plants grow in shaded areas while others grow in full sun.
- Question:** What would happen to a green bean plant if the amount of sunlight it received was altered?
- Hypothesis:** Green bean plants will grow better in full sunlight.
Set up an experiment with green bean plants to record their growth over a seven week period.
- Materials:** 6 small green bean plants of approximately the same size.
6 Styrofoam cups filled with potting soil and with a hole in the bottom of each.
10 mL of water for each plant once a week.
A metric ruler.
- Directions:** Transfer the bean plants to the Styrofoam cups. Water each plant only once a week. Measure each plant and record the height. Place plants A and B in complete darkness. Place plants C and D in full sunlight. Place plant E and plant F in partial sunlight.
- Observations:** Closely measure the rate of growth of the control group plants and the experimental groups. Take notes about the conditions of each plant and record the measurements on tables.
- Record Data:** Make a graph to show the growth rate for each plant. Plot their growth on a multiple line graph showing height and time.
- Conclusion:** What conclusion can be drawn about the growth of the plants in relationship to the amount of light they each received? Does the investigation support the hypothesis? Can a theory be stated about the effect light had on the green bean plants?
- Prediction:** Based on the theory that is stated, make a prediction about the behavior of green bean plants in the presence of full sunlight.

12. What was the variable in the experiment with the green bean plants?
13. Which plants were the control group plants?
14. What factors were kept constant in order for the data to be valid?

The growth rate for the plants was recorded in the following table.

Week Number	Plants A & B		Plants C & D		Plants E & F	
	Plant Height (cm)	Growth (cm)	Plant Height (cm)	Growth (cm)	Plant Height (cm)	Growth (cm)
0	5	—	5	—	5	—
1	6	1	6	1	5.5	0.5
2	6.5	1.5	9	4	7	2
3	7	2	15	10	10.5	5.5
4	7	0	25	20	17	12
5	6	0	30	25	20	15
6	5	0	35	30	22	18
7	3	0	35	0	25	20

15. Plot the weekly growth record of each group of plants on the line graph below.



16. In which week did plants C & D show the greatest growth? The least growth?
17. What happened to plants A & B in the fourth week?
18. What conclusion can you draw about the growth of the plants in relationship to the amount of light they each received?
19. Does the investigation support the hypothesis? Why or why not?
20. Predict what might happen if this experiment was repeated for tomato plants. Give reasons for your prediction.

