Test Bank for What Is Life A Guide to Biology 4th Edition by Phelan

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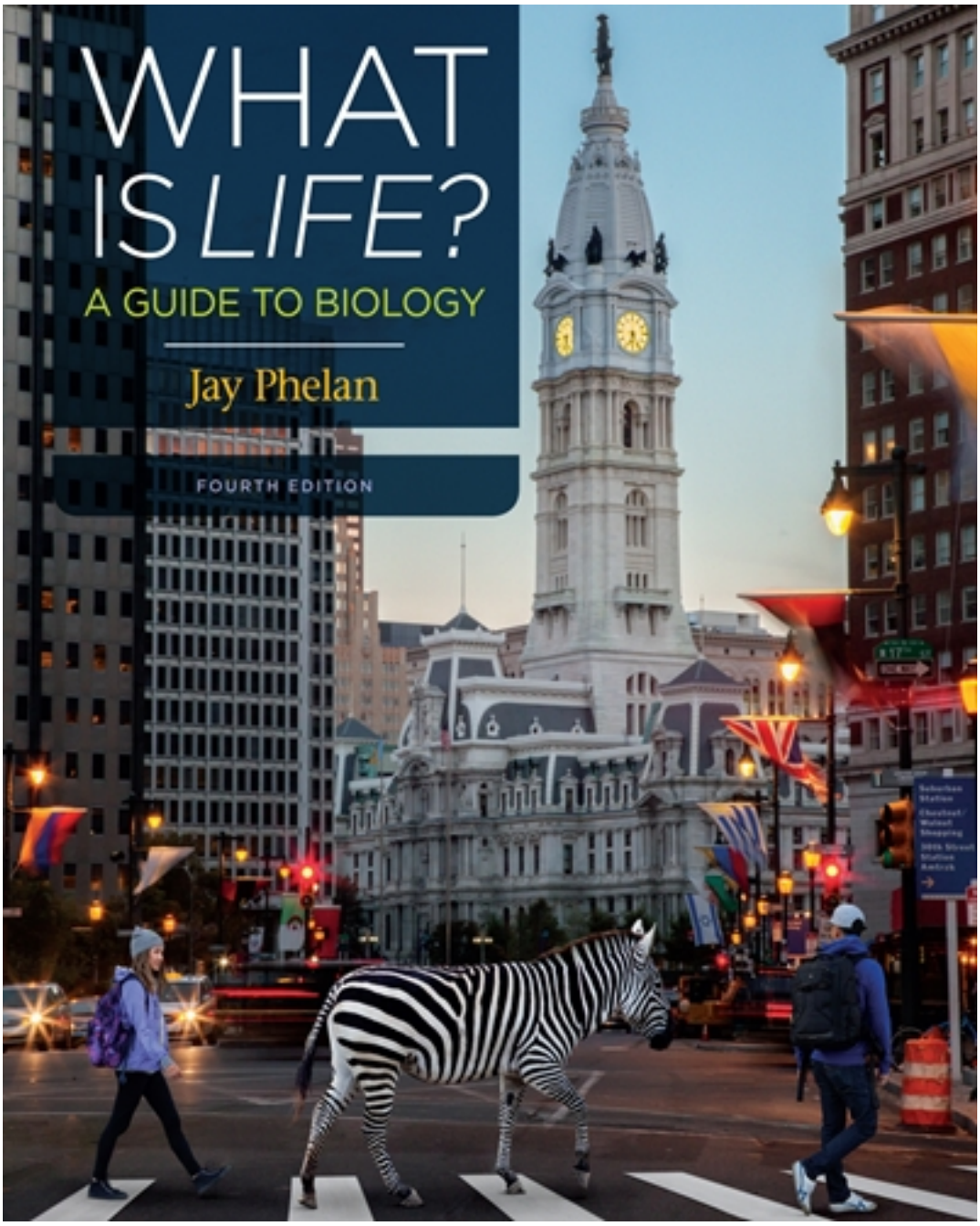


Test Bank

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve MC

1. By applying scientific thinking, one should be able to:
   a. prove that bees are attracted to colorful flowers because it makes them feel happy.
   b. determine whether there is a God in the heavens.
   c. prove that there is life after death, and what that life is like.
   d. determine exactly how many grains of dust are on the Moon.
   e. determine whether eating more meat makes you grow taller.

ANSWER: e

2. The study of living things is called:
   a. botany.
   b. zoology.
   c. archaeology.
   d. biology.
   e. geology.

ANSWER: d

3. True or False: Science is only relevant to professionals who conduct clinical trials and gather research for a living.
   a. True
   b. False

ANSWER: b

4. Which of the following questions underlies scientific thinking?
   a. "Is science relevant to me?"
   b. "What do the experts say?"
   c. "How do I know that is true?"
   d. "Can I trust scientific theories?"
   e. "How can I manipulate evidence to my advantage?"

ANSWER: c

5. Scientific literacy:
   a. is only important for students studying biology.
   b. is increasingly important in our everyday lives.
   c. can come from accepting what experts tell us.
   d. is not necessary if you rely on "gut instinct."
   e. is only useful for those with careers in medicine.

ANSWER: b

6. True or False: Biological literacy is useful for making better decisions for your own life.
   a. True
   b. False

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve MC

ANSWER: a

7. Which of the following statements could not arise from making scientific observations?
   a. The hair on my legs grew to a length of 1 cm in 3 days after shaving it off.
   b. Human twins have exactly the same DNA.
   c. The quartz crystal I had in my pocket today increased the likelihood of life being discovered on other planets by ten times.
   d. There are tiny creatures visible under a microscope that can't be seen by the naked eye.
   e. I sneezed two separate times today; both times, I sneezed three sneezes in a row.

ANSWER: c

8. The scientific method is:
   a. a deductive process based on testable and measurable events.
   b. a way of thinking that relies heavily on faith and belief.
   c. a process that starts with a conclusion and move toward a hypothesis.
   d. a method that uses different steps, depending on who is using it.
   e. a rigid process, like following a recipe exactly.

ANSWER: a

9. Generally, what is the third step in the scientific method, after one formulates a hypothesis?
   a. Make observations.
   b. Draw conclusions and make revisions.
   c. Devise a testable prediction.
   d. Conduct a critical experiment.
   e. Formulate a null hypothesis.

ANSWER: c

10. To be useful in the scientific method, an observation must be:
   a. hypothetical.
   b. definite.
   c. measurable.
   d. proven.
   e. metaphysical.

ANSWER: c

11. Scientific study always begins with:
   a. hypotheses.
   b. conclusions.
   c. experiments.
   d. observations.
   e. data.

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve MC

ANSWER: d

12. In scientific thinking, which of the following are not subject to revision?
    a. experiments
    b. hunches
    c. theories
    d. hypotheses
    e. observations

ANSWER: e

13. The proposed explanation for a phenomenon is best described as:
    a. a testable prediction.
    b. a conclusion.
    c. an observation.
    d. an experiment.
    e. a hypothesis.

ANSWER: e

14. If your hypothesis is, "Echinacea reduces the duration and severity of the symptoms of the common cold," what is your null hypothesis?
    a. Vitamin C reduces the duration and severity of the symptoms of the common cold.
    b. Echinacea increases the duration and severity of the symptoms of the common cold.
    c. Echinacea has no effect on the duration and severity of the symptoms of the common cold.
    d. Echinacea reduces the duration and severity of the symptoms of the flu.
    e. Vitamin C increases the duration and severity of the symptoms of the common cold.

ANSWER: c

15. Which of the following commonly used terms comes closest to the meaning of what scientists call a "hypothesis"?
    a. fact
    b. description
    c. observation
    d. explanation
    e. experiment

ANSWER: d

16. You notice that over the past month, many students have started carrying a new style of backpack. You think to yourself, "Maybe the bookstore recently started selling this new style of backpack." The statement in quotation marks is:
    a. a type of control.
    b. an example of a hypothesis.

Chapter 1 - LearningCurve MC

c. a type of observation.
d. an example of an experimental question.
e. an experiment.

ANSWER: b

17. By 1796 it had been observed that milkmaids who had been exposed to cowpox did not succumb to the deadly plague of smallpox that was ravishing both Europe and Britain. From this observation, Edward Jenner was able to construct the world's first successful vaccine. Which of the following statements best fits Jenner's hypothesis that led him to his creation of the vaccine?

a. If milkmaids exposed to cowpox are immune to smallpox, then cowpox and smallpox are the same disease.
b. If exposure to cowpox gives immunity to smallpox in milkmaids, then milkmaids have a natural immunity and their blood should be used to develop a smallpox vaccine.
c. Exposure to smallpox always gives immunity to cowpox.
d. If exposure to cowpox gives immunity to smallpox in milkmaids, then exposure to cowpox should give immunity to smallpox in other individuals as well.
e. Cowpox and smallpox are caused by the same microorganism.

ANSWER: d

18. Bonnie is preparing dinner and begins to wonder why cutting onions always makes her cry. Using scientific thinking, she decides to explore and hopefully answer this question. Which of the following statements represents a reasonable testable prediction for Bonnie's experiment?

a. People often cry when they cut onions, despite gender, age, or race.
b. People cry when they cut onions because onions release a chemical that is harmful to their eyes.
c. If you cut an onion near a person, then his/her eyes will always begin to produce tears.
d. The chemical that is released when one cuts onions has no effect in producing tears.
e. Slicing an onion releases enzymes, which react to create an airborne chemical that irritates the eyes and causes people to cry.

ANSWER: c

19. After generating a hypothesis, a scientist typically:

a. does an experiment.
b. designs a series of tests.
c. formulates a theory.
d. makes a prediction.
e. collects data.

ANSWER: d

20. Once a scientist has formulated a hypothesis that generates a testable prediction, she will:

a. make observations.
b. make revisions.
c. publish the hypothesis and prediction.

Chapter 1 - LearningCurve MC

d. conduct a critical experiment.
e. draw conclusions.

ANSWER: d

21. If you were to design an experiment to test whether a particular pathogen caused a disease, which of the following choices would be the first and last steps, if you follow the scientific method precisely?
a. first: formulate hypothesis; last: draw conclusions
b. first: make observations; last: draw conclusions
c. first: collect data; last: interpret data
d. first: formulate hypothesis; last: consult prior knowledge
e. first: make observations; last: interpret data

ANSWER: b

22. If the results of experimentation support a particular hypothesis, then:
a. a hypothesis becomes a theory.
b. the hypothesis is a true fact about how the world works.
c. no further testing is required.
d. new and more specific testable predictions should be made to refine a hypothesis.
e. all of the predictive, testable statements made in the study are supported.

ANSWER: d

23. Generally, what is the next step after the completion of a critical experiment?
a. admission that you were right or wrong
b. formation of predictive statements
c. formation of testable statements
d. making more observations
e. review of the hypothesis in light of the data gathered

ANSWER: e

24. If you were to propose one additional step in the scientific method beyond the common last step of "conclusion," which of the following choices is a reasonable selection?
a. Go back and make further observations to support your conclusion.
b. Review your background information to make sure your conclusion fits with other similar conclusions.
c. Create a further question, based on your new conclusion that can lead to further experiments in the future.
d. Reword your hypothesis to more correctly fit with your chosen conclusion.
e. Re-record your results to fit your conclusion more precisely.

ANSWER: c

25. Which of the following has scientific investigation shown to be least reliable in criminal prosecutions?

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve MC

a. ballistics
b. fingerprints
c. DNA evidence
d. blood work
e. eyewitness identification

ANSWER: e

26. Which of the following statements does not fulfill the qualities of a scientific theory?
a. All living things are made of cells.
b. Objects fall to the ground when dropped from a height.
c. If you talk about biology to your friends, you will probably do better on a biology test.
d. The genetic characteristics of individuals in a population change over time, over several generations.
e. Life on earth developed from simple biological compounds.

ANSWER: c

27. You are conducting an experiment where neither you nor the participants know who is receiving treatment versus a placebo. This is an example of:
a. the placebo effect.
b. double-blind experimental design.
c. superstition.
d. experimenter bias.
e. poor experimental design.

ANSWER: b

28. Before experimental drugs can be brought to market, they must undergo many rigorous trials to ensure they deliver their medical benefits effectively and safely. One method commonly used in this process is to compare the effect of a drug with that of a placebo in double-blind tests. Which of the following correctly describes a double-blind test?
a. The researchers apply two-layered blindfolds to the study participants, so they cannot see whether they are receiving the drug or a placebo.
b. Neither the researchers nor the study participants know who is receiving the drug and who is receiving the placebo.
c. The researchers know who is receiving the drug and who is receiving the placebo, but do not know what the supposed effects of the drug should be.
d. The researchers do not know who receives the drug or the placebo, but the participants know and tell them later.
e. The researchers and the control group participants know who is receiving the drug and who is receiving the placebo, but those in the experimental group do not.

ANSWER: b

29. An experiment was designed to determine the effect of temperature on the growth rate of phasmids—insects more commonly known as "walking sticks." Five walking sticks were grown in four different incubators, set at

Chapter 1 - LearningCurve MC

variable temperatures for two weeks. Which component of the experiment is the dependent variable?

a. number of walking sticks per incubator
b. temperature of incubators
c. growth of walking sticks
d. amount of time data are collected
e. species of walking sticks

ANSWER: c

30. A company wants to determine the effect of an herbicide on a species of a common weed. Thirty total plants are tested. Fifteen plants are treated with the herbicide, and 15 plants are not. Which of the following would describe a controlled variable in this experiment?

a. only one species of plant is used in the experiment
b. the 15 plants not treated with herbicide
c. the 15 plants treated with the herbicide
d. only one herbicide is being used in the experiment
e. the number of total plants tested

ANSWER: a

31. Researchers set up an experiment to determine the effectiveness of a drug. A total of 50 participants are chosen: 25 women are placed in the experimental group and given the drug, and 25 men are placed in the control group and given a placebo. How should the researchers improve the design of this experiment?

a. All participants should be in the same group.
b. Sexes should be evenly distributed between the experimental and control groups.
c. All participants should be given the drug.
d. The number of participants should be decreased.
e. The design of the experiment is sound; nothing should be changed.

ANSWER: b

32. An independent variable is:

a. an experimental condition applied to research subjects.
b. a group of subjects who are exposed to a particular treatment.
c. a group of subjects who are not exposed to a particular treatment.
d. an observed and measured component determined at the beginning of an experiment.
e. a measurable entity whose response is created by the process being observed.

ANSWER: d

33. Double-blind experimental design is an important component of a well-designed experiment. Which of the following describes a double-blind experiment?

a. A group of experimental subjects receive a drug, whereas another group receives a placebo.
b. The experimenter is unaware of which treatment a subject is receiving.
c. Both the experimenter and the subject are unaware of which treatment a subject is receiving.

Chapter 1 - LearningCurve MC

d. The experimenter is unaware of the types of subjects that are receiving which treatments.
e. The subject is unaware of which treatment they are receiving.

ANSWER: c

34. A powerful element of an experiment is to divide subjects into experimental and control groups. What is the purpose of a control group?
a. to keep all factors equal between both groups
b. to ensure neither the experimenter nor the subject are aware of which treatment the subject is receiving
c. to establish a baseline to which you can compare experimental results
d. to increase the sample size of subjects receiving a treatment
e. to repeat a study to determine the effectiveness of the experiment

ANSWER: c

35. If a researcher collects data by using the same experimental setup as in another study, but uses different research subjects, this is called _____ the study:
a. balancing
b. reasoning
c. extrapolating
d. replicating
e. extracting

ANSWER: d

36. The greater the number of repeated scientific studies with the same results:
a. the more likely scientists have made an error in experimental design.
b. the less likely the experiment can be reproduced with the same results by others.
c. the more likely the results are significant, and not due to random chance.
d. the more likely the results are once-in-a-lifetime events, never to be seen again.
e. the less likely the experiment will increase our confidence in the results.

ANSWER: c

37. What does it mean when you replicate a study?
a. The same study is repeated, sometimes with a tiny variation.
b. Someone at another lab or location copies your exact experiment, illegally.
c. You cannot replicate studies; they are unique, one-time instances.
d. When you replicate a study, you repeat multiple versions of the experiment all at once.
e. Replicating a study is when someone illegally copies the results from another study and falsifies their own study with those results.

ANSWER: a

38. Which of the following best describes biases?

Chapter 1 - LearningCurve MC

a. Biases can influence our behavior, collection, and interpretation of data, sometimes subconsciously.
b. Biases are impossible to minimize.
c. Scientists are the only people without biases.
d. Biases only influence the results of a study.
e. Biases only influence how one collects data.

ANSWER: a

39. Why is replication an important element of the scientific process?
a. Reproducing the results of an experiment increases confidence and reduces bias.
b. Replication of an experiment is used to determine what was done incorrectly in an experiment.
c. Replication of an experiment is required for the scientific community to have confidence in the results of an experiment.
d. Replication of an experiment is done to change the variable being tested.
e. Reproducible results are not required by the scientific community.

ANSWER: a

40. What is the purpose of replicating an experiment that has been already been performed?
a. to determine the effect of a placebo in an experiment
b. to study the correlation of two different conclusions
c. to reduce bias and increase confidence in results in the experiment
d. to determine the effects of a control group in an experiment
e. to provide a source for a new hypothesis for an experiment

ANSWER: c

41. What is the one common feature among all types of visual displays, that is, bar graphs, pie charts, and so on?
a. They condense large amounts of information into a more easily digested form.
b. They combine information and can create any type of pattern in the data.
c. There are no common features among all types of visual displays. Pie charts serve an entirely different purpose than line graphs, for example.
d. All visual displays show the proportion of data to the whole.
e. The only common feature among visual displays is a title and axes.

ANSWER: a

42. Which of the following visual displays would best demonstrate the relationship between the following variables: Performance on midterm exams in percentage (*y*-axis) versus time spent studying each day in hours (*x*-axis)?
a. line graph
b. bar graph
c. pie chart
d. map

Chapter 1 - LearningCurve MC

e. flowchart

ANSWER: a

43. Your professor creates a line graph, displaying the relationship between the number of hours spent studying each day with students' performance on midterm exams. What is the dependent variable in this graph?

a. number of hours spent studying each day
b. the exam scores of students who did not study at all
c. exam performance on midterm exams
d. the exam scores of students who spent one hour studying
e. As time spent studying increases, performance on exams increases

ANSWER: c

44. You grow pea plants in eight different treatment scenarios. You record each plant's growth, and then calculate the average growth of the plants for each treatment. Which type graph would display this information best?

a. line graph
b. pie chart
c. bar graph
d. either a pie chart or line graph
e. either a bar graph or line graph

ANSWER: c

45. What is the meaning of the phrase "correlation does not imply causation"?

a. It is not possible to prove the cause of any naturally occurring phenomenon.
b. It is not possible to demonstrate a correlation between two variables.
c. Just because two variables vary in a similar pattern does not mean that changing one variable causes a change in the other.
d. Just because two variables vary in a similar pattern does not mean that they have any relationship to each other.
e. When a change in one variable causes a change in another variable, the two variables are not necessarily related to each other in any way.

ANSWER: c

46. Statistics are used by scientists mainly to determine:

a. whether differences in results between control and treatment groups are theoretical.
b. whether differences in results between control and treatment groups are significant and important.
c. whether two numbers are the same or not.
d. whether a study needs to be repeated.
e. whether or not there was a bias in the study.

ANSWER: b

47. If you toss a coin and it comes up tails on eight consecutive tosses, what is the likelihood it will come up

Chapter 1 - LearningCurve MC

tails on the ninth toss?

a. 1
b. 4/9
c. 0
d. 5/9
e. 1/2

ANSWER: e

48. A new shampoo claims to significantly increase hair growth. To test this, researchers conduct an experiment in which subject A uses the shampoo once a day for 30 days but subject B does not. After 30 days, subject A has had significant hair growth compared to subject B. Should the results of this experiment be used to support the product claims?

a. Yes. The experimental design is sound.
b. Yes. The results support that the shampoo does what it claims.
c. No. The experiment does not include enough subjects in each group.
d. No. The experiment does not include a control group.
e. No. The results do not support that the product does what it claims.

ANSWER: c

49. The average length of crayfish from stream A is 10 cm. The average length of crayfish from stream B is 6 cm. What additional information is needed to determine if there is a significant difference between the average length of crayfish in stream A and the average length of crayfish in stream B?

a. the location of the streams
b. the species of the crayfish
c. the standard deviation for all measurements
d. the flow rate of the streams
e. The average rainfall of the region

ANSWER: c

50. Sitting in the park one afternoon, your friend observes two families. Both families have three young children. Your friend concludes that only families who have at least three children visit the park in the afternoon. His conclusion is an example of:

a. pseudoscience.
b. a double-blind study.
c. an anecdotal observation.
d. a replicated study.
e. a superstition.

ANSWER: c

51. A set of flash cards, designed to be used 15 minutes a day with infants, claims that it will enrich their minds and turn them into geniuses. This form of marketing is an example of:

a. anecdotal observation.

Chapter 1 - LearningCurve MC

b. a double-blind study.
c. replication.
d. pseudoscience.
e. superstition.

ANSWER: d

52. Iridology is a technique where practitioners diagnose health problems by studying changes in the irises of a patient's eyes. Which of the following statements, if true, would suggest that iridology is a pseudoscience?
a. Doctors of standard medicine generally agree with the diagnoses of iridologists.
b. Patients going to both standard doctors and iridologists become measurably healthier.
c. Iridology is taught as an alternative medical diagnostic procedure in most medical schools.
d. Statistically, patients going to iridologists are healthier than those who go to standard doctors.
e. The irises of people remain relatively unchanged throughout life.

ANSWER: e

53. Which of the following statements about statistics is most accurate?
a. Statistics can quantify and summarize large amounts of information, making it possible to draw more accurate conclusions.
b. Statistics allow conclusions to be drawn when a sample set is low.
c. Statistics refers to the data represented on a visual display.
d. According to statistics, if the number of firefighters increases according to the severity of a fire, then the firefighters must be causing the severe fires.
e. Statistics cannot help identify relationships; only visual displays can.

ANSWER: a

54. What is a positive correlation?
a. When one variable increases, so does the other.
b. When one variable's severity increases, the severity of the other variable decreases.
c. Any relationship between two variables that favors longevity of life.
d. Any relationship between two variables that does not favor the longevity of life.
e. When one variable increases, the other stays the same.

ANSWER: a

55. _____ makes scientific-sounding claims that are not supported by trustworthy, methodical scientific studies.
a. Anecdotal evidence
b. Evolutionary biology
c. Pseudoscience
d. Statistics
e. All advertising

ANSWER: c

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve MC

56. Which of the following statements can be supported by science?
    a. Your yellow T-shirt is "lucky."
    b. Your religion is the only valid religion.
    c. Your friend failed his last quiz because he didn't use his favorite pen.
    d. It is unethical to clone human embryos.
    e. It is not possible to catch autism from a vaccination.

ANSWER: e

57. Which of the following is considered an example of scientific thinking?
    a. It is bad luck to open an umbrella indoors.
    b. Using horoscopes can determine personality traits.
    c. Antibiotics are useful in killing infectious bacteria.
    d. A green dress is prettier than a blue dress.
    e. Snakes are vile creatures.

ANSWER: c

58. Two important unifying themes in biology are that (1) life is organized on many levels, and that (2):
    a. living things can die.
    b. the genetic characteristics of individuals in a population change over time.
    c. humans are more evolved and superior than bacteria.
    d. animals with bigger brains are capable of greater thought.
    e. all living things can move, breathe, and communicate.

ANSWER: b

59. All of the following are branches of biology except:
    a. behavior.
    b. evolution.
    c. ecology.
    d. geology.
    e. genetics.

ANSWER: d

60. Which of the following is not a characteristic shared by all life on earth?
    a. Life is characterized by complex, ordered organization consisting of one or more cells.
    b. Living things have the ability to regulate and maintain constant internal conditions.
    c. Organisms acquire, use, and transform energy to perform work.
    d. All living organisms exhibit growth, development, and the ability to pass genetic information to live offspring.
    e. Populations of living organisms are static and do not change with the passage of time.

ANSWER: e

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve MC

61. Viruses contain genetic material, and they can evolve over time. However, they also must use the machinery of the cells they invade to reproduce and do not carry out any metabolic processes on their own. Based on this description, should viruses be classified as "living?"

a. Yes. Reproduction is one of the characteristics of living organisms.
b. Yes. Not all living things conduct metabolic activities.
c. Yes. Viruses have the ability to adapt and change.
d. Yes. Viruses contain genetic material, just like other living things.
e. No. Viruses cannot reproduce or conduct metabolic functions on their own.

ANSWER: e

62. Single-celled organisms, such as paramecia, are able to sense a food source and move toward it. Which key characteristic of all living organisms does this example illustrate?

a. ability to grow and reproduce
b. evolutionary adaptation leading to descent with modification over time
c. sensitivity and responsiveness to the external environment
d. the use and transformation of energy to perform work
e. regulation and homeostasis

ANSWER: c

63. As you will learn in Chapter 5, plants use sunlight and atmospheric carbon dioxide to make sugars. Which characteristic of all living organisms does this example describe?

a. growth, development, and reproduction
b. evolutionary adaptation leading to descent with modification over time
c. the use and transformation of energy to perform work
d. sensitivity and responsiveness to the external environment
e. regulation and homeostasis

ANSWER: c

64. Which of the following is a characteristic of all living things?

a. sexual reproduction
b. multicellular
c. maintain homeostasis
d. obtain energy from an outside food source
e. made of only carbon, oxygen, and hydrogen atoms

ANSWER: c

65. Diversity of life on earth is included in which central and unifying theme of biology?

a. hierarchal organization
b. the power of evolution
c. growth, development, and reproduction

Chapter 1 - LearningCurve MC

d. the scientific method
e. empirical knowledge

ANSWER: b

66. A scientist discovers a new entity. Based on what you know about the characteristics of living organisms, which of the following might lead you to conclude that the entity is not a living organism?

a. It is able to maintain a constant internal environment.
b. It is unable to reproduce without a host organism.
c. It consists of a single cell.
d. It responds to external stimuli.
e. It is able to take in sunlight and produce its own food.

ANSWER: b

Name:_____ Class:_____ Date:_____

Chapter 1 - StreetBio

1. Based on the results of this study, what is the relationship between pollution levels and weekend rainfall?
   a. Increasing pollution levels during the week cause more rainfall on Saturdays.
   b. There is a positive correlation between increased pollution during the week and increased rainfall on Saturdays.
   c. Decreasing pollution levels during the week cause more rainfall on Saturdays.
   d. Decreasing pollution levels during the week correlate with increased rainfall on Saturdays.
   e. Only very high levels of pollution cause cloud formation and increased rainfall.

ANSWER: b

2. Would you expect to find the same pattern of increased weekend rainfall in urban areas of the Midwest?
   a. Yes, because those cities also produce pollution during the week, which would cause increased rainfall on the weekend.
   b. Yes, the pattern would be even more pronounced because the Midwest experiences more intense weather systems than the East Coast.
   c. Perhaps, but the experiment would need to be replicated in those areas first.
   d. No, because the Midwest is farther from the ocean, which limits precipitation.
   e. No, because there is no correlation between pollution and rainfall.

ANSWER: c

3. Your friend is organizing a large outdoor fundraising event on the beach near Charleston, SC. Based on the data from this study, on which day of the week should she schedule the event?
   a. Friday
   b. Saturday
   c. Sunday
   d. Monday
   e. Wednesday

ANSWER: d

Name:_____ Class:_____ Date:_____

Chapter 1 - This Is How We Do It

1. What was the independent variable in this study?
   a. the placebo treatment
   b. the pain level reported by the patient
   c. the number of surgeons performing the operation
   d. the type of surgical procedure performed
   e. the amount of post-operative care performed by the nurses

ANSWER: d

2. This study was an example of double-blind experimental design because:
   a. neither the patient nor the surgeon performing the procedure knew which treatment the patient received.
   b. neither the patient nor the researchers collecting the pain data knew which treatment the patient received.
   c. neither the surgeon performing the procedure nor the nurses taking care of the patients knew which treatment the patient received.
   d. neither the patient nor the nurses caring for the patient knew which treatment the patient received.
   e. neither the surgeon performing the procedure nor the researchers collecting the pain data knew which treatment the patient received.

ANSWER: b

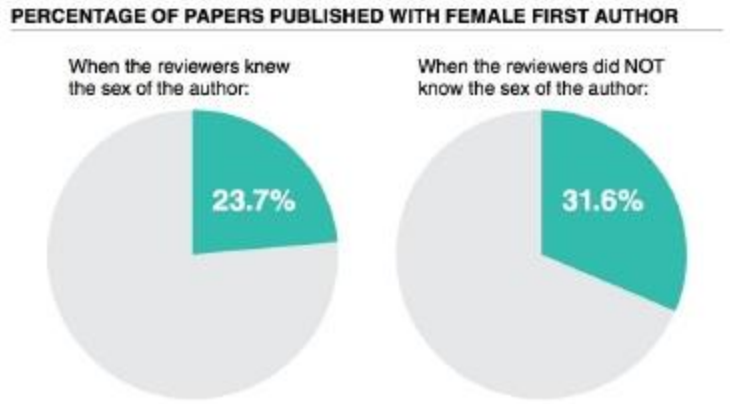
3. Suppose a new study examines the outcomes of arthroscopic debridement in 100 patients, four years after they underwent treatment. The results indicate that 65% of patients who underwent debridement reported reduced pain levels at the end of the four-year period. What conclusion can be drawn about the original study in light of this new study?
   a. The experimental design of the first study was likely flawed since the second study shows that debridement is effective.
   b. It is impossible to compare the results of the two studies without knowing the specific details of how each was conducted.
   c. The results of the original study would likely change if pain levels were monitored over a longer period.
   d. Additional studies are unnecessary because the second study clearly demonstrates a benefit for debridement.
   e. Significant benefits from arthroscopic debridement do not occur until several years after treatment.

ANSWER: b

Name:_____ Class:_____ Date:_____

Chapter 1 - Graphic Content

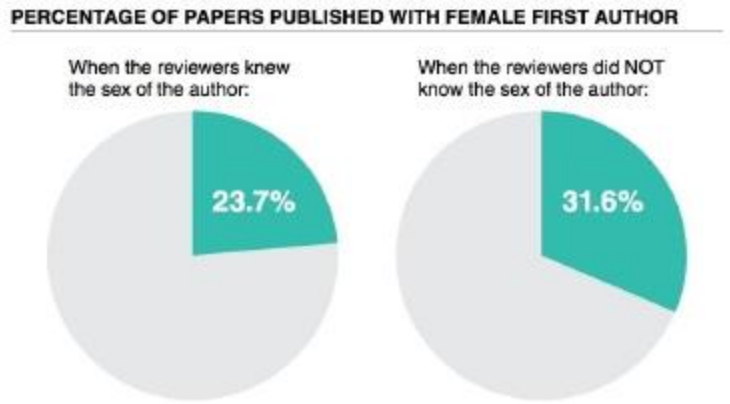
1. After the double-blind review policy was instituted, what percentage of published papers had a male first author?



a. 23.7%
b. 31.6%
c. 55.3%
d. 68.4%
e. 76.3%

ANSWER: d

2. What is the dependent variable in this figure?



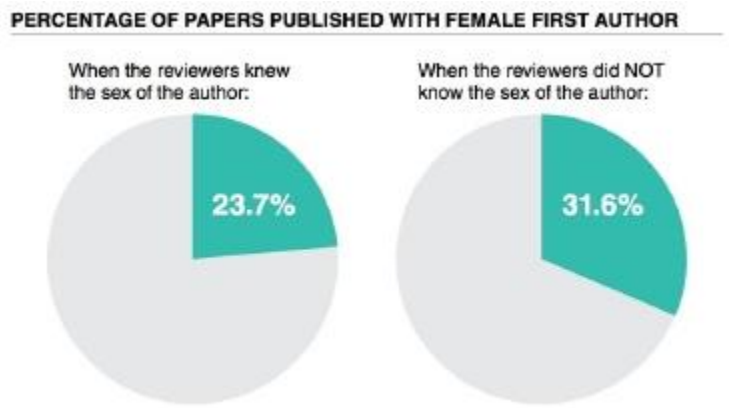
a. percentage of papers published with a female first author
b. reviewer knowledge of the sex of the first author
c. the total number of papers published with a female first author
d. lack of reviewer knowledge of the sex of the first author
e. the overall increase in the number of papers published with a female first author

ANSWER: a

3. Which of the following conclusions can be drawn from the data?

Name:_____ Class:_____ Date:_____

Chapter 1 - Graphic Content



a. A greater percentage of papers submitted by female first authors were accepted for publication after the double-blind review policy was instituted.
b. A greater percentage of papers submitted by male first authors were rejected after the double-blind review policy was instituted.
c. More papers with female first authors were published after the double-blind review policy was instituted.
d. The reviewers showed bias toward papers with female first authors before the double-blind policy was instituted.
e. Instituting the new review policy caused an increase in the number of papers with female first authors accepted for publication.

ANSWER: c

Name:_____ Class:_____ Date:_____

Chapter 1 - LearningCurve FIB

1. Scientific thinking is not only self-correcting, it is also _____meaning it is based on experience and observations that are rational, testable, and repeatable.
ANSWER: empirical

2. The scientific method begins by making _____ about the world around us.
ANSWER: observations

3. A _____ hypothesis is a hypothesis that proposes a lack of a relationship between two factors.
ANSWER: null

4. The _____ effect is a frequently observed, poorly understood phenomenon that people tend to respond favorably to any treatment.
ANSWER: placebo

5. A condition that is applied to research subjects in a study but not to subjects in the control group is called a _____.
ANSWER: treatment

6. In an experiment, the _____ group is the group of subjects who are not exposed to the treatment being studied but are otherwise treated identically to the experimental group.
ANSWER: control

7. Characteristics of an experimental system that are subject to change are called _____.
ANSWER: variables

8. The _____ variable is typically represented by the *y*-axis on a graph.
ANSWER: dependent

9. The application of scientific research in fields such as manufacturing and medicine to solve problems is called _____.
ANSWER: technology