Answer Key

Directed Reading A

SECTION:WHAT DOES DNA LOOK LIKE?

1. D
2. A
3. B
4. give instructions for building and maintaining cells and be able to be copied each time a cell divides
5. so that each cell contains an identical set of genes
6. complex
7. a sugar, a phosphate, and a base
8. adenine, thymine, guanine, cytosine
9. A, T, G, C
10. adenine
11. cytosine
12. X-ray diffraction
13. spiral
14. a long, twisted ladder
15. how DNA is copied and how it functions in the cell
16. double helix
17. alternating sugar and phosphate molecules
18. a pair of bases
19. B
20. A
21. The matching bases are always present in equal amounts.
22. replicate
23. complementary
24. down the middle
25. complementary nucleotides
26. every time a cell divides
27. proteins

SECTION:HOW DNA WORKS

1. about 2 m
2. A
3. C
4. gene
5. 46
6. 2
7. DNA
8. bases
9. amino acids
10. protein
11. gene
12. Answers may vary. Sample answer: Proteins determine how tall you are, what colors you see, and whether your hair is curly or straight.
13. ribonucleic acid
14. DNA
15. ribosome
16. messenger RNA
17. transfer RNA
18. 2
19. 4
20. 3
21. 5
22. 1
23. mutations
24. B
25. A
26. C
27. mutagens
28. Answers may vary. Sample answers: high-energy radiation from Xrays, ultraviolet radiation from sunlight, asbestos, chemicals in cigarette smoke
29. A
30. D
31. Answers may vary. Sample answers: curing diseases, creating new drugs, new foods, or new fabrics
32. fingerprinting
33. DNA
34. clone

Directed Reading B

SECTION:WHAT DOES DNA LOOK LIKE?

1. B
2. A
3. C
4. A
5. C
6. nucleotide
7. base
8. thymine
9. cytosine
10. B
11. B
12. C

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