Answer Key

Directed Reading A

SECTION: MENDEL AND HIS PEAS

1. the passing of traits from parents to offspring
2. Answers may vary. Sample answer: I have brown eyes like my mother.
3. B
4. C
5. A
6. self-pollinating
7. true-breeding
8. cross-pollinate
9. wind, insects
10. Answers may vary. Sample answer: Self-pollinating was important because it allowed Mendel to grow true-breeding plants. Cross-pollination was important because he could mix different traits to check results.
11. characteristic
12. traits
13. Answers may vary. Sample answer: True-breeding plants are important because he then knew what to expect if his plants self-pollinated.
14. Answers may vary. Sample answer: Mendel removed the anthers of one plant so that the plant could not self-pollinate. He then did the cross-pollinating himself.
15. C
16. B
17. A
18. B
19. A
20. C
21. D

SECTION: TRAITS AND INHERITANCE

1. C
2. D
3. A
4. B
5. A
6. B
7. G
8. A
9. B
10. F
11. D
12. C
13. E
14. *Pp*
15. It will be passed on to the next generation.
16. *PP, Pp, pP*
17. *Pp, pP*
18. C
19. 25%
20. There are only two possibilities for each trait.
21. incomplete dominance
22. Answers may vary. Sample answer: A cross between a true-breeding red snapdragon and a true-breeding white snapdragon produces pink flowers, because both alleles of the gene have some degree of influence.
23. trait
24. environment

SECTION: MEIOSIS

1. C
2. B
3. one
4. C
5. A
6. B
7. B
8. meiosis
9. 46
10. nucleus
11. genes
12. Two identical copies of the original cell are formed.
13. C
14. A
15. B
16. D
17. 3
18. 5
19. 8
20. 1
21. 7
22. 4
23. 6
24. 2

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25. half the number of chromosomes that were present in the original cell
26. meiosis
27. genotype
28. sex chromosomes
29. two X chromosomes
30. one X and one Y chromosome
31. the X chromosome
32. the Y chromosome
33. They are more likely to have a sex-linked disorder.
34. Answers may vary. Sample answer: color blindness and hemophilia
35. pedigree
36. carrier
37. recessive
38. selective breeding

Directed Reading B

SECTION: MENDEL AND HIS PEAS

1. B
2. B
3. D
4. C
5. A
6. C
7. B
8. B
9. C
10. A
11. dominant
12. recessive
13. D
14. B
15. A

SECTION: TRAITS AND INHERITANCE

1. C
2. D
3. A
4. D
5. B
6. B
7. C
8. B
9. D
10. C
11. D
12. B
13. A
14. C
15. B
16. A
17. D
18. meiosis
19. X chromosomes
20. Y chromosome
21. hemophilia
22. pedigree
23. carriers
24. recessive
25. selective breeding

Vocabulary and Section Summary

SECTION: MENDEL AND HIS PEAS

1. heredity: the passing of genetic traits from parent to offspring
2. dominant trait: the trait observed in the first generation when parents that have different traits are bred
3. recessive trait: a trait that reappears in the second generation after disappearing in the first generation when parents with different traits are bred

SECTION: TRAITS AND INHERITANCE

1. gene: one set of instructions for an inherited trait
2. allele: one of the alternative forms of a gene that governs a characteristic, such as hair color
3. phenotype: an organism's appearance or other detectable characteristic
4. genotype: the entire genetic makeup of an organism; also, the combination of genes for one or more specific traits
5. probability: the likelihood that a possible future event will occur in any given instance of the event

SECTION: MEIOSIS

1. homologous chromosomes: chromosomes that have the same sequence of genes and the same structure
2. meiosis: a process in cell division during which the number of chromosomes decreases to half the original number by two divisions of the nucleus, which results in the production of sex cells

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