

Grade 8 Science

Unit 5: Genetics

Driving question: Why are living things different from one another?

23 lessons (investigations and weekly readings) and a words quiz. Use this pack with the unit's **Teacher Guide**, **Student Procedure Guide**, **Student Work Pages** and **Science Literacy Student Reader** (download them once from the course) to teach the whole unit without the internet.

What is in this pack

- A plan for each lesson: the lesson question, how many class days it takes, the Teacher Guide pages to follow, and the student pages to print.
- For each weekly reading: the Student Reader pages, words to know and the exercise page.
- The words quiz, ready to print, with its key at the back.

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Lesson schedule

Each investigation lesson takes the number of class days shown (about 45 minutes a day). Do each reading over a week alongside the lessons. Tick each one off as you go.

	Lesson	Days	Student pages
☐	Reading: Science Literacy Preface: Put Yourself in This Scene	1 week	—
☐	Lesson 1: How do organisms get their differences?	3	3 to print
☐	Lesson 2: How do extra-big muscles compare to typical ones up close?	1	5 to print
☐	Lesson 3: How do diet and exercise affect muscle size?	1	11 to print
☐	Reading: Science Literacy Collection 1: Muscles and Other Traits	1 week	1 to print
☐	Lesson 4: What is different about the food and exercise for cattle with extra-big muscles?	1	3 to print
☐	Lesson 5: Where do the babies with extra-big muscles get that trait variation?	2	4 to print
☐	Lesson 6: How do chromosomes cause cattle to be born with extra-big muscles?	2	6 to print
☐	Reading: Science Literacy Collection 2: Born or Built	1 week	1 to print
☐	Lesson 7: How does an animal get extra-big muscles?	2	2 to print
☐	Lesson 8: Why don't offspring always look like their parents or their siblings?	2	4 to print
☐	Lesson 9: How do farmers control the variation in their animals?	2	6 to print
☐	Reading: Science Literacy Collection 3: Picking Parents	1 week	1 to print
☐	Lesson 10: How can we use our model to explain a different trait variation?	1	1 to print
☐	Lesson 11: How can we answer the rest of our questions?	1	2 to print

	Lesson	Days	Student pages
☐	Lesson 12: Do plants have genetic material?	1	3 to print
☐	Lesson 13: How do plants reproduce?	2	6 to print
☐	Reading: Science Literacy Collection 4: Plants and Variation	1 week	1 to print
☐	Lesson 14: (How) do other organisms reproduce without sperm and eggs?	2	2 to print
☐	Lesson 15: How do we get variations if the genetic information is exactly the same?	1	3 to print
☐	Lesson 16: How much of trait variation in a population is controlled by genes or by the environment?	2	7 to print
☐	Reading: Science Literacy Collection 5: Making New Individuals	1 week	1 to print
☐	Lesson 17: Why are living things different from one another?	2	3 to print
☐	Words quiz	—	—

Page numbers are PDF page numbers of each file, so they match what your PDF reader shows.

Reading: Science Literacy Preface: Put Yourself in This Scene

Words to know

- **environment** — the surroundings or conditions in which an organism lives
- **genes** — segments of DNA that transfer hereditary information from parent organisms to offspring
- **genetics** — the branch of biology concerned with the study of genes and heredity
- **science literacy** — the ability to read, hear, and

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 38–41: the steps, materials and timing for this lesson.

Read

Read Science Literacy Student Reader, Preface: “Put Yourself in This Scene”: PDF pages 6–7. Look at the pictures and maps together.

Check for understanding

- Use one of today's words in a sentence of your own.

Lesson 1: How do organisms get their differences?

LESSON QUESTION

How do organisms get their differences?

Plan about **3 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 42–60: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 7–10
- Initial Model — Student Work Pages, PDF pages 7–8
- Reading: Version 2: How to Build Muscles — Student Procedure Guide, PDF page 86

For the teacher

- Teacher Reference 1 — Teacher Guide, PDF pages 394–399

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How do organisms get their differences?

Lesson 2: How do extra-big muscles compare to typical ones up close?

LESSON QUESTION

How do extra-big muscles compare to typical ones up close?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 61-76: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 11-13
- Muscle Protein Questions — Student Work Pages, PDF pages 9-10
- Model Update — Student Work Pages, PDF pages 11-12
- Reading: How Muscles Contract — Student Procedure Guide, PDF page 80
- Reading: Version 2: Protein's Effect on Muscles — Student Procedure Guide, PDF page 89

For the teacher

- Answer Key 1 — Teacher Guide, PDF pages 400-401

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How do extra-big muscles compare to typical ones up close?

Lesson 3: How do diet and exercise affect muscle size?

LESSON QUESTION

How do diet and exercise affect muscle size?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 77–90: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 14–17
- Organizer for Obtaining and Evaluating Information — Student Work Pages, PDF pages 13–14
- Exit Ticket - Role of Protein and Exercise in Building Muscle — Student Work Pages, PDF pages 15–16
- Reading: Version 1: How to Build Muscles — Student Procedure Guide, PDF page 81
- Reading: Version 1: Greek Yogurt + Resistance Training (Study 1) — Student Procedure Guide, PDF page 82
- Reading: Version 1: Carbs or Protein with Exercise (Study 2) — Student Procedure Guide, PDF page 83
- Reading: Version 1: Protein's Effect on Muscles — Student Procedure Guide, PDF page 84
- Reading: Version 1: Effect of Resistance Exercise on Muscles — Student Procedure Guide, PDF page 85
- Reading: Version 2: Greek Yogurt + Resistance Training (Study 1) — Student Procedure Guide, PDF page 87
- Reading: Version 2: Carbs or Protein with Exercise (Study 2) — Student Procedure Guide, PDF page 88
- Reading: Version 2: Effect of Resistance Exercise on Muscles — Student Procedure Guide, PDF page 90

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation: How do diet and exercise affect muscle size?

Reading: Science Literacy Collection 1: Muscles and Other Traits

Words to know

- **environment** — the surroundings or conditions in which an organism lives
- **fast-twitch muscle** — muscle tissue composed of fibers that provide quick bursts of power but for short durations
- **recessive allele/gene, n.** a variant of a gene that is overridden by a different, dominant variant of the same
- **genes** — segments of DNA that transfer hereditary information from parent organisms to offspring
- **genetics** — the branch of biology concerned with the study of genes and heredity
- **phenotype** — observable traits of an individual, based on interactions of the individual's genes and its environment
- **skeletal muscle** — organs in humans and other vertebrates that attach to bones and enable movement
- **slow-twitch muscle** — muscle tissue composed of fibers that provide fatigue-resistant duration

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 91–97: the steps, materials and timing for this lesson.

Read

Read Science Literacy Student Reader, Collection 1: “Muscles and Other Traits”: PDF pages 8–17. Look at the pictures and maps together.

Student pages to print

- Exercise Page 1 — Student Work Pages, PDF pages 63–64

Check for understanding

- Use one of today's words in a sentence of your own.

Lesson 4: What is different about the food and exercise for cattle with extra-big muscles?

LESSON QUESTION

What is different about the food and exercise for cattle with extra-big muscles?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 98–110: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 18–19
- Reading: Exercise: Ask a Farmer Transcript — Student Procedure Guide, PDF page 91
- Reading: Diet: Ask a Farmer Transcript — Student Procedure Guide, PDF page 92

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
What is different about the food and exercise for cattle with extra-big muscles?

Lesson 5: Where do the babies with extra-big muscles get that trait variation?

LESSON QUESTION

Where do the babies with extra-big muscles get that trait variation?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 111–139: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 20–23
- Family Phenotype Graphic Organizer — Student Work Pages, PDF pages 17–18
- Chromosomes in Sex Cells — Student Work Pages, PDF pages 19–20
- Karyotype of Lorenc's Muscle Cell — Student Work Pages, PDF pages 21–22

For the teacher

- Answer Key — Teacher Guide, PDF pages 402–406

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
Where do the babies with extra-big muscles get that trait variation?

Lesson 6: How do chromosomes cause cattle to be born with extra-big muscles?

LESSON QUESTION

How do chromosomes cause cattle to be born with extra-big muscles?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 140–165: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 24–29
- Guiding Questions for Chromosome and Protein Data — Student Work Pages, PDF pages 23–24
- Reading: Version 1: New Protein Linked to the Heavily Muscled Phenotype — Student Procedure Guide, PDF page 93
- Reading: Version 1: Function of the Myostatin Protein — Student Procedure Guide, PDF pages 94–96
- Reading: Version 2: New Protein Linked to the Heavily Muscled Phenotype — Student Procedure Guide, PDF page 97
- Reading: Version 2: Function of the Myostatin Protein — Student Procedure Guide, PDF pages 98–100

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation: How do chromosomes cause cattle to be born with extra-big muscles?

Reading: Science Literacy Collection 2: Born or Built

Words to know

- **essential amino acids** — chemical components necessary for life function but that cannot be made by the body and thus must come from food
- **fraternal twins** — a pair of offspring produced by two gene separate zygotes during the same pregnancy
- **gamete** — a male or female germ cell that can fuse with comprehend information about scientific topics and a cell of the opposite sex in sexual reproduction to demonstrate understanding in discussion and through produce a zygote writing
- **genes** — segments of DNA that transfer hereditary information from parent organisms to offspring
- **genetics** — the branch of biology concerned with the study of genes and heredity
- **identical twins** — a pair of offspring produced by the division of a single zygote into two during the same pregnancy
- **karyotype** — an individual's complete set of chromosomes
- **sexual reproduction** — reproduction that results from the union of a male and female gamete
- **zygote** — a cell resulting from the fusing of two gametes; a fertilized egg

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 166–172: the steps, materials and timing for this lesson.

Read

Read Science Literacy Student Reader, Collection 2: “Born or Built”: PDF pages 18–27. Look at the pictures and maps together.

Student pages to print

- Exercise Page 2 — Student Work Pages, PDF pages 65–66

Check for understanding

- Use one of today's words in a sentence of your own.

Lesson 7: How does an animal get extra-big muscles?

LESSON QUESTION

How does an animal get extra-big muscles?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 173–193: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 30–32
- Gotta-Have-It Checklist — Student Work Pages, PDF pages 25–26

For the teacher

- Rubric — Teacher Guide, PDF pages 407–410
- Answer Key 1 — Teacher Guide, PDF pages 411–413
- Answer Key 2 — Teacher Guide, PDF pages 414–417

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How does an animal get extra-big muscles?

Lesson 8: Why don't offspring always look like their parents or their siblings?

LESSON QUESTION

Why don't offspring always look like their parents or their siblings?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 194–224: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 33–37
- Traditional Pedigree Graphic Organizer — Student Work Pages, PDF pages 27–28
- Using Pedigrees to Make Predictions — Student Work Pages, PDF pages 29–34
- Reference: Student Support for Probability Work — Student Procedure Guide, PDF pages 67–71

For the teacher

- Answer Key 1 — Teacher Guide, PDF pages 418–424

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation: Why don't offspring always look like their parents or their siblings?

Lesson 9: How do farmers control the variation in their animals?

LESSON QUESTION

How do farmers control the variation in their animals?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 225–240: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 38–39
- Bird Breeder Simulation Results — Student Work Pages, PDF pages 35–36
- Reference: Instructions for Bird Breeder Simulation — Student Procedure Guide, PDF page 72
- Reading: Interview with Penny, Cattle Farmer — Student Procedure Guide, PDF page 101
- Reading: Raising Heavily Muscled Cattle to Reduce Environmental Impacts of Cattle — Student Procedure Guide, PDF pages 102–103
- Reading: Interview with Wilbur, Cattle Breeder — Student Procedure Guide, PDF pages 104–105

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How do farmers control the variation in their animals?

Reading: Science Literacy Collection 3: Picking Parents

Words to know

- **gene pool** — the collective of genes in an interbreeding population of a species
- **genes** — segments of DNA that transfer hereditary information from parent organisms to offspring
- **genetics** — the branch of biology concerned with the study of genes and heredity
- **heterozygous** — having inherited different forms of a particular gene from each parent
- **pheromone** — a type of hormone that sends a signal from one organism to another
- **selective breeding** — the human practice of choosing and pairing parent organisms for the purpose of promoting desired traits in offspring

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 241–247: the steps, materials and timing for this lesson.

Read

Read Science Literacy Student Reader, Collection 3: “Picking Parents”: PDF pages 28–37. Look at the pictures and maps together.

Student pages to print

- Exercise Page 3 — Student Work Pages, PDF pages 67–68

Check for understanding

- Use one of today's words in a sentence of your own.

Lesson 10: How can we use our model to explain a different trait variation?

LESSON QUESTION

How can we use our model to explain a different trait variation?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 248–252: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF page 40

For the teacher

- Rubric 1 — Teacher Guide, PDF pages 425–432
- Answer Key 1 — Teacher Guide, PDF pages 433–438
- Answer Key 2 — Teacher Guide, PDF pages 439–440

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How can we use our model to explain a different trait variation?

Lesson 11: How can we answer the rest of our questions?

LESSON QUESTION

How can we answer the rest of our questions?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 253–263: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 41–43
- Reading: Arm Span Length — Student Procedure Guide, PDF page 110

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How can we answer the rest of our questions?

Lesson 12: Do plants have genetic material?

LESSON QUESTION

Do plants have genetic material?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 264–280: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 44–47
- Lab v1: Extracting Genetic Material — Student Work Pages, PDF pages 37–38
- Lab v2: Extracting Genetic Material — Student Work Pages, PDF pages 39–42

For the teacher

- Teacher Reference — Teacher Guide, PDF pages 441–442

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
Do plants have genetic material?

Lesson 13: How do plants reproduce?

LESSON QUESTION

How do plants reproduce?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 281–302: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 48–51
- Flower Diagram — Student Work Pages, PDF pages 43–44
- Breeding Tulips — Student Work Pages, PDF pages 45–46
- Exit Ticket — Student Work Pages, PDF pages 47–48
- Giving Feedback to Peers — Student Work Pages, PDF pages 49–50
- Reading: How do we get new tulip variations? — Student Procedure Guide, PDF pages 106–107

For the teacher

- Teacher Reference 1 — Teacher Guide, PDF pages 443–449

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How do plants reproduce?

Reading: Science Literacy Collection 4: Plants and Variation

Words to know

- **clone** — a genetically identical copy of an organism
- **genes** — segments of DNA that transfer hereditary information from parent organisms to offspring
- **genetic diversity** — the range of different inherited traits that contribute to variations within a species
- **pollination** — the transfer of pollen in plants enabling fertilization

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 303–309: the steps, materials and timing for this lesson.

Read

Read Science Literacy Student Reader, Collection 4: “Plants and Variation”: PDF pages 38–47. Look at the pictures and maps together.

Student pages to print

- Exercise Page 4 — Student Work Pages, PDF pages 69–70

Check for understanding

- Use one of today's words in a sentence of your own.

Lesson 14: (How) do other organisms reproduce without sperm and eggs?

LESSON QUESTION

(How) do other organisms reproduce without sperm and eggs?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 310–324: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 52–55
- Asexual Reproduction Notes — Student Work Pages, PDF pages 51–52

For the teacher

- Answer Key — Teacher Guide, PDF page 450

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
(How) do other organisms reproduce without sperm and eggs?

Lesson 15: How do we get variations if the genetic information is exactly the same?

LESSON QUESTION

How do we get variations if the genetic information is exactly the same?

Plan about **1 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 325–335: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 56–57
- Explaining Environmental Effects — Student Work Pages, PDF pages 53–54
- Reading: Two Examples of Environmental Influences on Trait Variation — Student Procedure Guide, PDF pages 108–109

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
How do we get variations if the genetic information is exactly the same?

Lesson 16: How much of trait variation in a population is controlled by genes or by the environment?

LESSON QUESTION

How much of trait variation in a population is controlled by genes or by the environment?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 336–362: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 58–62
- Data Collection: Wheat Kernels — Student Work Pages, PDF pages 55–56
- Arm Span Histogram Instructions — Student Work Pages, PDF pages 57–58
- Arm Span Reading and Modeling — Student Work Pages, PDF pages 59–60
- Reference: Wheat Kernel Environmental Factors Investigation — Student Procedure Guide, PDF pages 73–77
- Reference: Steps for Using Probability to Make Predictions — Student Procedure Guide, PDF page 78
- Reading: Color of Wheat Kernels — Student Procedure Guide, PDF pages 111–117

For the teacher

- Teacher Reference — Teacher Guide, PDF pages 451–452

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation: How much of trait variation in a population is controlled by genes or by the environment?

Reading: Science Literacy Collection 5: Making New Individuals

Words to know

- **asexual reproduction** — reproduction that occurs without the union of a male and female gamete
- **clone** — a genetically identical copy of an organism
- **environment** — the surroundings or conditions in which an organism lives
- **epigenetic** — above the gene; something that affects the expression of a gene
- **fast-twitch muscle** — muscle tissue composed of fibers that provide quick bursts of power but for short durations
- **allele/gene, n.** a variant of a gene that is overridden by a different, dominant variant of the same
- **genes** — segments of DNA that transfer hereditary information from parent organisms to offspring
- **genetic diversity** — the range of different inherited traits that contribute to variations within a species
- **genetics** — the branch of biology concerned with the study of genes and heredity
- **parthenogenesis** — spontaneous development of an embryo from an unfertilized egg
- **sexual reproduction** — reproduction that results from the union of a male and female gamete
- **skeptic** — a person who uses caution and expresses doubt about claims, especially those that do not seem backed up by facts
- **slow-twitch muscle** — muscle tissue composed of fibers that provide fatigue-resistant duration

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 363–368: the steps, materials and timing for this lesson.

Read

Read Science Literacy Student Reader, Collection 5: “Making New Individuals”: PDF pages 48–57. Look at the pictures and maps together.

Student pages to print

- Exercise Page 5 — Student Work Pages, PDF pages 71–76

Check for understanding

- Use one of today's words in a sentence of your own.

Lesson 17: Why are living things different from one another?

LESSON QUESTION

Why are living things different from one another?

Plan about **2 class days** for this lesson.

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 369–380: the steps, materials and timing for this lesson.

Student pages to print

- Student procedures for this lesson — Student Procedure Guide, PDF pages 63–66
- Questions and Answers from Our DQB — Student Work Pages, PDF pages 61–62
- Reference: Reference Images for Redwoods Assessment — Student Procedure Guide, PDF page 79

For the teacher

- Rubric — Teacher Guide, PDF pages 453–459
- Answer Key 1 — Teacher Guide, PDF pages 460–471

Check for understanding

- Explain your answer to the lesson question, using evidence from your investigation:
Why are living things different from one another?

WORDS QUIZ

Genetics

Name: _____ Date: _____

Circle the letter of the best answer.

- 1.** Which word means “an individual’s complete set of chromosomes”?
 - a) genes
 - b) genetic diversity
 - c) karyotype
 - d) science literacy
- 2.** Which word means “the transfer of pollen in plants enabling fertilization”?
 - a) skeletal muscle
 - b) genetic mutation
 - c) inbreeding
 - d) pollination
- 3.** Which word means “the ability to read, hear, and”?
 - a) selective breeding
 - b) science literacy
 - c) fraternal twins
 - d) parthenogenesis
- 4.** Which word means “differences in appearance and function among organisms of the same species stemming from different inherited information”?
 - a) gene pool
 - b) slow-twitch muscle
 - c) fraternal twins
 - d) trait variation
- 5.** Which word means “muscle tissue composed of fibers that provide quick bursts of power but for short durations recessive allele/gene, n. a variant of a gene that is overridden by a different, dominant variant of the same”?
 - a) zygote
 - b) genes
 - c) science literacy
 - d) fast-twitch muscle
- 6.** Which word means “the human practice of choosing and pairing parent organisms for the purpose of promoting desired traits in offspring”?
 - a) selective breeding
 - b) epigenetic
 - c) science literacy
 - d) genes

7. Which word means “a person who uses caution and expresses doubt about claims, especially those that do not seemed backed up by facts”?

- a) asexual reproduction
- b) trait variation
- c) skeptic
- d) genetic diversity

8. Which word means “a change in the sequence of chemical components within a section of an organism’s DNA”?

- a) genetic mutation
- b) zygote
- c) genetics
- d) essential amino acids

9. Which word means “food produced with modifications to organisms’ DNA”?

- a) phenotype
- b) essential amino acids
- c) genetically modified crop
- d) genetic diversity

10. Which word means “a pair of offspring produced by the division of a single zygote into two during the same pregnancy”?

- a) parthenogenesis
- b) identical twins
- c) epigenetic
- d) homozygous

11. Which word means “spontaneous development of an embryo from an unfertilized egg”?

- a) fraternal twins
- b) fast-twitch muscle
- c) parthenogenesis
- d) zygote

12. Which word means “a cell resulting from the fusing of two gametes; a fertilized egg”?

- a) homozygous
- b) zygote
- c) karyotype
- d) skeletal muscle

FOR THE TEACHER

Answers

Unit quiz key

1. c 2. d 3. b 4. d 5. d 6. a 7. c 8. a 9. c 10. b 11. c 12. b