

# Biology A Homework



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## CHAPTER

## 1

# Plant Evolution and Classification Worksheets

## Chapter Outline

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- 1.1 INTRODUCTION TO THE PLANT KINGDOM
  - 1.2 FOUR TYPES OF MODERN PLANTS
  - 1.3 PLANT EVOLUTION AND CLASSIFICATION
- 



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- **Lesson 15.1: Introduction to the Plant Kingdom**
- **Lesson 15.2: Four Types of Modern Plants**



# 1.1 Introduction to the Plant Kingdom

## Lesson 1.1: True or False

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Plants are multicellular prokaryotes with cell walls made of cellulose.
- \_\_\_\_\_ 2. In some plants, the male and female reproductive organs are on different plants.
- \_\_\_\_\_ 3. Some plants have lost the ability to do photosynthesis.
- \_\_\_\_\_ 4. In order to carry out photosynthesis, plants need water, carbon dioxide, and light.
- \_\_\_\_\_ 5. A main purpose of roots is to absorb water and minerals.
- \_\_\_\_\_ 6. During photosynthesis, plants release carbon dioxide into the air and use oxygen and argon.
- \_\_\_\_\_ 7. Because plants photosynthesize, they don't need to carry out cellular respiration.
- \_\_\_\_\_ 8. Plants remove water from the air and into the soil by transpiration.
- \_\_\_\_\_ 9. Weeds are defined as highly desirable plants.
- \_\_\_\_\_ 10. Alternation of generations refers to cycling between haploid to diploid generations.
- \_\_\_\_\_ 11. In plants, gametophytes are haploid.
- \_\_\_\_\_ 12. In plants, sporophytes are haploid.
- \_\_\_\_\_ 13. Plants are believed to have evolved directly from prokaryotic cyanobacteria.
- \_\_\_\_\_ 14. The earliest plants could easily reproduce in a dry environment with almost no water.
- \_\_\_\_\_ 15. Development of a vascular system helped plants colonize dry land.

## Lesson 1.1: Multiple Choice

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. The earliest plants had

- a. leaves.
  - b. stems.
  - c. roots.
  - d. none of the above.
2. The flowers of a Venus fly trap
- a. carry out photosynthesis in the dark.
  - b. secrete enzymes that can digest trapped insects.
  - c. thrive in temperatures below freezing.
  - d. all of the above
3. Plants need oxygen because
- a. they carry out cellular respiration just like all other aerobic organisms.
  - b. oxygen is consumed during photosynthesis to make carbon-containing organic molecules.
  - c. the earth's atmosphere contains too much oxygen and too little carbon dioxide.
  - d. none of the above
4. Humans get which of the following kinds of products from plants?
- a. medicines
  - b. dyes
  - c. rubber
  - d. all of the above
5. Red-eyed tree frogs
- a. are green and do photosynthesis, so they do not need to eat or drink.
  - b. are not frogs, because frogs never have red eyes.
  - c. live in banana trees.
  - d. none of the above
6. When plants are transplanted into a new habitat that is not their native one,
- a. they always die immediately.
  - b. due to a lack of predators and parasites in their new environment, they sometimes reproduce and spread so well that they outcompete native plants.
  - c. they stop producing seeds and start making spores.
  - d. they become parasitic plants.
7. Vegetative reproduction is
- a. a type of asexual reproduction.
  - b. a type of sexual reproduction.
  - c. reproduction using seeds.
  - d. reproduction using spores.
8. Lignin
- a. is needed directly for photosynthesis.
  - b. is a red pigment.
  - c. provides structural support and waterproofing to plants.
  - d. is the female reproductive cell in seed plants.

## 1.2 Four Types of Modern Plants

### Lesson 1.2: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Mosses are nonvascular plants.
- \_\_\_\_\_ 2. A ginkgo tree is a nonvascular plant.
- \_\_\_\_\_ 3. Rhizoids are photosynthetic organs of bryophytes.
- \_\_\_\_\_ 4. The spores of bryophytes are haploid.
- \_\_\_\_\_ 5. The female gametophyte of a bryophyte produces female gametes.
- \_\_\_\_\_ 6. Liverworts are much taller than a typical mature tree in the forest.
- \_\_\_\_\_ 7. Mosses are adapted to grow in extremely dry climates, such as the desert.
- \_\_\_\_\_ 8. Another term for vascular plants is tracheophytes.
- \_\_\_\_\_ 9. Xylem transport sugars from the leaves to the roots.
- \_\_\_\_\_ 10. The main function of phloem is to transport minerals such as nitrogen, from the leaves to the roots.
- \_\_\_\_\_ 11. The transport cells of functional xylem are living.
- \_\_\_\_\_ 12. Phloem tissue consists of living cells.
- \_\_\_\_\_ 13. Water evaporates more rapidly from needle-like leaves than from broad, flat leaves.
- \_\_\_\_\_ 14. The first leaf of a plant, which develops inside the seed, is called a cotyledon.
- \_\_\_\_\_ 15. Seed plants existed at the same time as dinosaurs.

### Lesson 1.2: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. Which seed structure provides the main source of food for the embryo?
  - a. endosperm
  - b. seed coat



- c. radicle
  - d. hypocotyl
2. Which of the following is **nota** plant adaptation to cold?
- a. a waxy cuticle on the leaves
  - b. rhizoids
  - c. woody trunks
  - d. seeds
3. The sugar-filled liquid produced by flowers is
- a. honey.
  - b. maple syrup.
  - c. nectar.
  - d. high-fructose corn syrup.
4. The female plant structure consisting of the stigma, style, and ovary is called
- a. a stamen.
  - b. a sepal.
  - c. a pistil.
  - d. a carpel.
5. The plant structure made of a filament and anther and which makes pollen is called
- a. an ovary.
  - b. a stamen.
  - c. a pistil.
  - d. a sepal.
6. Fruits can be best described as
- a. ripened ovaries.
  - b. enlarged stems.
  - c. above ground roots.
  - d. hardened pollen.
7. One advantage a plant gets from having flowers is that
- a. flowers are smaller than spores and easier to make.
  - b. there is no sexual reproduction in plants with flowers.
  - c. flowers attract pollinators, which spread pollen to other plants and thus promote cross-fertilization.
  - d. all of the above
8. Which of the following is **nota** major class of flowering plants?
- a. magnolids
  - b. eudicots
  - c. monocots
  - d. mosses

## 1.3 Plant Evolution and Classification

### Chapter 1.3 Review Worksheet

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

#### Multiple Choice

*Circle the letter of the correct choice.*

1. Skunk cabbage has evolved stinky flowers because
  - a. the smell prevents other plants from growing nearby all year long.
  - b. all yellow flowers smell bad.
  - c. the odor attracts pollinators.
  - d. the odor repels pollinators.
2. Which of the following is **nota** characteristic of most plants?
  - a. carries out photosynthesis
  - b. has cell walls made of cellulose
  - c. has yellow flowers
  - d. has specialized reproductive organs
3. Much of the oxygen in the earth's atmosphere
  - a. is produced as a waste product of cellular respiration in plants.
  - b. is released as a byproduct of photosynthesis.
  - c. is produced as a waste product of cellular respiration in animals.
  - d. is produced by tree frogs.
4. The mature sporophyte of a fern
  - a. produces haploid spores by meiosis.
  - b. produces diploid spores by meiosis.
  - c. produces diploid spores by mitosis.
  - d. produces haploid spores by mitosis.
5. Fusion of male and female gametes in plants produces
  - a. a eudicot stamen.
  - b. a style.
  - c. a haploid spore.
  - d. a diploid embryo.
6. Marine plants
  - a. have always been the dominant organisms of the oceans.
  - b. evolved after land plants.
  - c. are restricted to the water closer to the air, so they can get sufficient light for photosynthesis.
  - d. do not need to photosynthesize.
7. The vascular tissue that transports water and minerals from the soil to the rest of the plant is the
  - a. phloem.
  - b. phlegm.

- c. leaf.
  - d. xylem.
8. The vascular tissue that transports sugars from photosynthetic tissues to the rest of the plant is
- a. phloem.
  - b. phlegm.
  - c. leaf.
  - d. xylem.
9. In most land plants, the \_\_\_\_\_ generation is the dominant one.
- a. diploid sporophyte
  - b. diploid gametophyte
  - c. haploid sporophyte
  - d. haploid gametophyte
10. In seed plants, the \_\_\_\_\_ helps transfer of sperm from the pollen grain to the egg.
- a. sepal
  - b. petal
  - c. tuberos ovule
  - d. pollen tube
11. The scales of pine cones are
- a. always green.
  - b. modified roots.
  - c. modified leaves.
  - d. modified stems.
12. Plants that make flowers are called
- a. gymnosperms.
  - b. byrophytes.
  - c. gametophytes.
  - d. angiosperms.
13. The class of plants that has vascular tissue and reproduces with spores is the
- a. clubmosses.
  - b. liverworts.
  - c. flowering plants.
  - d. conifers.
14. The embryonic stem in a seed is called the
- a. radicle.
  - b. hypocotyl.
  - c. seed coat.
  - d. endosperm.
15. Pollen contains
- a. male gametes.
  - b. female gametes.
  - c. fruits.
  - d. a stigma.

**True or False**

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 16. Plants are a direct or indirect source of food for most organisms living on earth.
- \_\_\_\_\_ 17. A ripened ovary becomes a pollen grain.
- \_\_\_\_\_ 18. Cross-pollination decreases genetic diversity.
- \_\_\_\_\_ 19. Monocot embryos have one cotyledon.
- \_\_\_\_\_ 20. Currently on earth, there are many more gymnosperm species than angiosperm species.

## CHAPTER

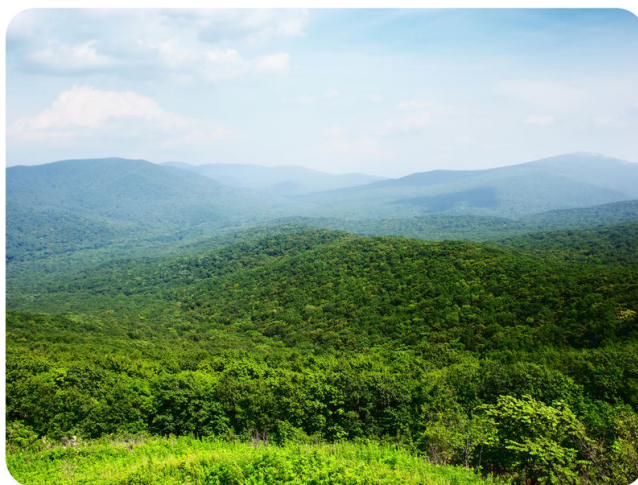
## 2

# Plant Biology Worksheets

## Chapter Outline

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- 2.1 PLANT TISSUES AND GROWTH**
  - 2.2 PLANT ORGANS: ROOTS, STEMS, AND LEAVES**
  - 2.3 VARIATION IN PLANT LIFE CYCLES**
  - 2.4 PLANT ADAPTATIONS AND RESPONSES**
- 



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- **Lesson 16.1: Plant Tissues and Growth**
- **Lesson 16.2: Plant Organs: Roots, Stems, and Leaves**
- **Lesson 16.3: Variation in Plant Life Cycles**
- **Lesson 16.4: Plant Adaptations and Responses**

## 2.1 Plant Tissues and Growth

### Lesson 2.1: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. An organ is a structure made of only one type of tissue.
- \_\_\_\_\_ 2. A tissue is made of a group of cells that have the same job.
- \_\_\_\_\_ 3. Instead of having a plasma membrane, plant cells have a cell wall.
- \_\_\_\_\_ 4. Plant cells are prokaryotic.
- \_\_\_\_\_ 5. The main function of plastids is to maintain pressure against the cell wall.
- \_\_\_\_\_ 6. A plant's central vacuole is typically large.
- \_\_\_\_\_ 7. The plant cell wall is located just inside the plant's plasma membrane.
- \_\_\_\_\_ 8. Plant cells walls can contain both cellulose and lignin.
- \_\_\_\_\_ 9. Some types of parenchymal cells are photosynthetic cells.
- \_\_\_\_\_ 10. Cell walls of sclerenchyma are very thick.
- \_\_\_\_\_ 11. Xylem and phloem are types of dermal tissue.
- \_\_\_\_\_ 12. The plant cuticle protects and waterproofs the above-ground parts of the plant.
- \_\_\_\_\_ 13. Most plants grow only during a very short period during their lifetime.
- \_\_\_\_\_ 14. Cell division decreases the number of cells in a plant.
- \_\_\_\_\_ 15. Meristem is made of differentiated cells.

### Lesson 2.1: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. Which of the following types of cells would be best at storing food for a plant?



- a. parenchymal
  - b. sclerenchymal
  - c. cell in a flower petal
  - d. prokaryotic
2. The organelle that maintains pressure against the cell wall, so that the plant cell keeps its shape, is the
- a. central vacuole.
  - b. rough endoplasmic reticulum.
  - c. smooth endoplasmic reticulum.
  - d. nucleus.
3. A membrane-bound organelle that contains DNA is a
- a. Golgi body.
  - b. smooth endoplasmic reticulum.
  - c. chloroplast.
  - d. cell wall.
4. The plant cuticle
- a. coats the surface of the root.
  - b. is made by ground tissue.
  - c. transports sugars throughout the plant.
  - d. is made by epidermal cells.
5. Xylem and phloem are
- a. dermal tissue.
  - b. ground tissue.
  - c. vascular tissue.
  - d. epidermal tissue.
6. The meristem consists of
- a. cells with a thick cuticle.
  - b. differentiated cells.
  - c. undifferentiated cells.
  - d. all of the above.
7. Plant roots can grow to become wider
- a. by cell division of differentiated root cells.
  - b. from water absorption in the leaves.
  - c. when the cuticle is made.
  - d. through cell division in a root meristem.
8. When a single cell divides once by mitosis, the product is
- a. a single cell with half the DNA of the original cell.
  - b. two cells.
  - c. four cells.
  - d. eight cells.

## 2.2 Plant Organs: Roots, Stems, and Leaves

### Lesson 2.2: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Stems absorb water and minerals and transport them to the roots.
- \_\_\_\_\_ 2. Roots contain dermal, ground, and vascular tissues.
- \_\_\_\_\_ 3. Many plants with taproots use the root as a place to store food.
- \_\_\_\_\_ 4. Fibrous roots anchor the plant less securely to the ground than taproots.
- \_\_\_\_\_ 5. Root hairs detect gravity so the root grows downward.
- \_\_\_\_\_ 6. Mycorrhizal relationships allow the plant to absorb more water.
- \_\_\_\_\_ 7. Secondary stems grow from internodes on the primary stem.
- \_\_\_\_\_ 8. Some plants have stems that can store water during dry seasons.
- \_\_\_\_\_ 9. The only function of stems is to bear leaves and flowers.
- \_\_\_\_\_ 10. The width of a tree ring represents a single year's growth in the width of the tree's stem.
- \_\_\_\_\_ 11. The leaf petiole does the majority of photosynthesis for a leaf.
- \_\_\_\_\_ 12. Microphylls are the leaves of flowering plants.
- \_\_\_\_\_ 13. Plants with a basal rosette of leaves are taking advantage of higher temperatures close to the ground.
- \_\_\_\_\_ 14. Compound leaves are made up of a number of leaflets.
- \_\_\_\_\_ 15. Deciduous leaves change color in the fall when their chlorophyll breaks down.

### Lesson 2.2: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. The main difference between a taproot system and a fibrous root system is that

- a. taproots can store a lot of food, while fibrous roots do not.
  - b. taproots absorb water, while fibrous roots do not.
  - c. fibrous roots can access water sources deep under the ground, while taproots cannot.
  - d. fibrous roots have an epidermal cell layer, while taproots do not.
2. Roots grown downward because
- a. they have vascular bundles.
  - b. they grow opposite to the force of gravity.
  - c. they grow away from water sources.
  - d. there are gravity-sensing cells in the root cap.
3. The xylem of the vascular tissue in the root
- a. carries sugars from the leaves to the roots for storage.
  - b. carries water and minerals from the root up to the stem.
  - c. detects gravity and causes the root to grow downward.
  - d. none of the above
4. In stems, the \_\_\_\_\_ meristem is responsible for growth in length, and the \_\_\_\_\_ meristem is primarily responsible for growth in width.
- a. secondary, primary
  - b. primary, secondary
  - c. node, epidermal
  - d. epidermal, node
5. A main function of the leaf petiole is
- a. to extend the leaf blade away from the stem so the blade can collect sufficient sunlight.
  - b. to keep the leaf away from the secondary meristem of the stem.
  - c. to produce pollen.
  - d. none of the above.
6. Very thick stems are specialized for
- a. clinging and climbing.
  - b. strength and support.
  - c. storing water or food.
  - d. photosynthesis.
7. Leaves arranged in whorls are optimized to
- a. collect sunlight from all directions.
  - b. to increase resistance to wind.
  - c. to increase water loss.
  - d. to increase food storage capacity.
8. The air spaces in the leaf interior
- a. block gas exchange between the mesophyll cells and the environment.
  - b. make the leaf weigh more than a leaf packed tightly with cells.
  - c. make the leaf weigh less than a leaf packed tightly with cells.
  - d. carry out most of the photosynthesis in the leaf.

## 2.3 Variation in Plant Life Cycles

### Lesson 2.3: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. A plant species has either a haploid gametophyte phase, or a diploid sporophyte phase, but not both.
- \_\_\_\_\_ 2. Meiosis in the sporangium produces haploid spores.
- \_\_\_\_\_ 3. A haploid spore develops into a haploid gametophyte.
- \_\_\_\_\_ 4. Fertilization of gametes produces a haploid zygote.
- \_\_\_\_\_ 5. The dominant generation in vascular plants is the gametophyte.
- \_\_\_\_\_ 6. In nonvascular plants, archegonia are the male reproductive organs.
- \_\_\_\_\_ 7. Ferns are seedless vascular plants.
- \_\_\_\_\_ 8. A new sporophyte fern plant develops from a fertilized egg and sperm.
- \_\_\_\_\_ 9. Gymnosperms are flowering vascular plants.
- \_\_\_\_\_ 10. Cones are the reproductive structure in gymnosperms.
- \_\_\_\_\_ 11. The dots on the back of fern fronds are sporangia.
- \_\_\_\_\_ 12. Gymnosperms have male cones and female cones.
- \_\_\_\_\_ 13. Angiosperms are flowering nonvascular plants.
- \_\_\_\_\_ 14. Angiosperms produce pollen.
- \_\_\_\_\_ 15. Fruit develops from a ripened ovary surrounding a seed.

### Lesson 2.3: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. In plants, sperm and eggs are produced by

- a. mitosis in reproductive organs of the gametophyte.
  - b. mitosis in the diploid sporophyte.
  - c. meiosis in the zygote.
  - d. mitosis of root hairs.
2. The gametophyte generation is dominant in
- a. pine trees, spruce trees, and maple trees.
  - b. clubmosses, ginkgo, and cycads.
  - c. hornworts, liverworts, and mosses.
  - d. all of the above.
3. In nonvascular plants, eggs are produced
- a. by the same structure that produces sperm.
  - b. in female reproductive organs called archegonia.
  - c. in male reproductive organs called archegonia.
  - d. by mitosis in the diploid sporophyte.
4. In seedless vascular plants,
- a. spores fuse to form a zygote.
  - b. there are no antheridia.
  - c. the haploid gametophyte generation dominates.
  - d. the diploid sporophyte generation dominates.
5. Gymnosperms are
- a. seedless nonvascular plants.
  - b. flowering nonvascular plants.
  - c. vascular plants producing flowers.
  - d. vascular plants producing seeds in cones.
6. Gymnosperms reproduce using
- a. xylem and phloem.
  - b. pollen and female cones.
  - c. flowers and wind.
  - d. antheridia and spores.
7. In pollen grains, \_\_\_\_\_ are formed.
- a. eggs
  - b. sperm
  - c. female reproductive structures
  - d. ovules
8. In angiosperms, the \_\_\_\_\_ produces eggs via meiosis.
- a. stamen
  - b. pollen tube
  - c. pistil
  - d. seed

## 2.4 Plant Adaptations and Responses

### Lesson 2.4: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Aquatic plants have thick cuticles on their leaves.
- \_\_\_\_\_ 2. Pollination is most effective when it happens under water.
- \_\_\_\_\_ 3. Xerophytes are adapted to live in wet, rainy climates.
- \_\_\_\_\_ 4. A saguaro cactus stores water in its thick stem.
- \_\_\_\_\_ 5. A cactus is an epiphyte.
- \_\_\_\_\_ 6. An orchid is an epiphyte.
- \_\_\_\_\_ 7. Epiphytes grow on other plants mainly to avoid getting excess sunlight.
- \_\_\_\_\_ 8. Some epiphytes absorb water from the air.
- \_\_\_\_\_ 9. Some kinds of epiphytes can collect water in a tank-like structure.
- \_\_\_\_\_ 10. Phototropism is growth of roots away from the light.
- \_\_\_\_\_ 11. The tip of a plant grows toward a light source.
- \_\_\_\_\_ 12. Some plants produce toxic chemicals that can kill pathogens.
- \_\_\_\_\_ 13. Plants always respond to an infection with increased cell division and growth around the area of infection.
- \_\_\_\_\_ 14. Plant hormones regulate growth in plants.
- \_\_\_\_\_ 15. Because they cannot run away like animals can, plants cannot respond to environmental stimuli.

### Lesson 2.4: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. Which of the following is **nota** typical characteristic of aquatic plants?



- a. They live in the water.
  - b. They have extensive vascular tissues for transporting water.
  - c. Their leaves collect sunlight.
  - d. They do not need roots.
2. Desert plants adapt to a limited water supply by
  - a. conserving water.
  - b. storing water.
  - c. efficiently absorbing water when it is available.
  - d. all of the above
3. Which of the following plants is an epiphyte?
  - a. orchid
  - b. saguaro cactus
  - c. cattail
  - d. water lily
4. Which kind of plant is best adapted for life in the tropical rainforest?
  - a. saguaro cactus
  - b. epiphyte
  - c. oak tree
  - d. all of the above
5. The leaves of which plant are shaped to collect and store a lot of water?
  - a. water lily
  - b. cattail
  - c. saguaro cactus
  - d. bromeliad
6. Growth toward the force of gravity is called
  - a. auxin.
  - b. geotropism.
  - c. phototropism.
  - d. thigmotropism.
7. Growth toward the light is called
  - a. auxin.
  - b. geotropism.
  - c. phototropism.
  - d. thigmotropism.
8. Plants often enter dormancy
  - a. when rainfall is abundant.
  - b. just before they form flowers.
  - c. during winter.
  - d. in the spring.

## CHAPTER

## 3

# Introduction to Animals Worksheets

## Chapter Outline

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- 3.1 OVERVIEW OF ANIMALS
  - 3.2 OVERVIEW OF INVERTEBRATES
- 



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- Lesson 17.1: Overview of Animals
- Lesson 17.2: Overview of Invertebrates

## 3.1 Overview of Animals

### Lesson 3.1: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Animals are multicellular prokaryotes.
- \_\_\_\_\_ 2. Animal cells have cell walls to maintain their shape.
- \_\_\_\_\_ 3. All animals are heterotrophs.
- \_\_\_\_\_ 4. Vertebrates do not have a backbone.
- \_\_\_\_\_ 5. All animal cells are exactly the same shape.
- \_\_\_\_\_ 6. Animals have a nervous system.
- \_\_\_\_\_ 7. Almost all animals digest their food inside their bodies.
- \_\_\_\_\_ 8. Most animals reproduce by sexual reproduction.
- \_\_\_\_\_ 9. Fish are in the phylum Chordata.
- \_\_\_\_\_ 10. Roundworms are in the phylum Arthropoda.
- \_\_\_\_\_ 11. Over 90% of all animals species are vertebrates.
- \_\_\_\_\_ 12. A characteristic of animals is that they have sensory organs.
- \_\_\_\_\_ 13. An exoskeleton is a bony skeleton on the outside of some organisms.
- \_\_\_\_\_ 14. A notochord is a rigid, supportive rod spanning the length of the body of chordates.
- \_\_\_\_\_ 15. The first animals to evolve with true lungs were the reptiles.

### Lesson 3.1: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Animal cells and bacterial cells both may have all of the following cell structures **except**
  - a. mitochondria.
  - b. DNA.

- c. plasma membrane.
  - d. flagella.
2. Which of the following are animals?
- a. snake
  - b. sponge
  - c. flatworm
  - d. all of the above
3. Which of the following is **nota** characteristic shared by almost all animals?
- a. digestion of food internally
  - b. the ability to fly
  - c. the ability to move, at least at some stage of their life
  - d. detection of environmental stimuli
4. Invertebrates evolved adaptations including
- a. a fluid-filled body cavity.
  - b. a complete digestive system.
  - c. a symmetrical body.
  - d. all of the above.
5. A skeleton forming outside the animal's body is a(n)
- a. endoskeleton.
  - b. exoskeleton.
  - c. notochord.
  - d. vertebrate.
6. One of the main challenges animals faced when moving to land was
- a. switching to asexual reproduction.
  - b. getting rid of their nervous systems, which would be too sensitive on land.
  - c. getting rid of extra water.
  - d. not losing too much water from their bodies.
7. An example of an animal that has a notochord but lacks a backbone is a
- a. tunicate.
  - b. fish.
  - c. bird.
  - d. all of the above
8. Animals that have eggs with internal membranes that permit diffusion of gases but prevent water loss are classified as
- a. chordates.
  - b. echinoderms.
  - c. amniotes.
  - d. rotifers.

## 3.2 Overview of Invertebrates

### Lesson 3.2: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. An earthworm is an example of a segmented invertebrate.
- \_\_\_\_\_ 2. Invertebrates with an incomplete digestive system starve, because their food cannot be completely digested.
- \_\_\_\_\_ 3. A psuedocoelom refers to concentration of nervous tissue at one end of the animal.
- \_\_\_\_\_ 4. Some invertebrates move, but cannot regulate which direction they move or how fast they move.
- \_\_\_\_\_ 5. A larva is a juvenile stage of the life cycle.
- \_\_\_\_\_ 6. A bilaterally symmetrical invertebrate has two identical left and right halves.
- \_\_\_\_\_ 7. A radially symmetrical invertebrate can be divided into two similar halves by a line traversing the center of the animal.
- \_\_\_\_\_ 8. Endoderm becomes muscle tissue.
- \_\_\_\_\_ 9. All invertebrates reproduce by asexual budding.
- \_\_\_\_\_ 10. Body segments make an animal less flexible.
- \_\_\_\_\_ 11. Protostome and deuterostome are two main classes of invertebrates.
- \_\_\_\_\_ 12. Some invertebrates have an internal skeleton.
- \_\_\_\_\_ 13. The outside of an animal is formed from the ectoderm.
- \_\_\_\_\_ 14. A partial coelom is called a psuedocoelom.
- \_\_\_\_\_ 15. Complete digestion is less efficient than incomplete digestion because most animals eat too much food.

### Lesson 3.2: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. An example of an organism that has an incomplete digestive system is
  - a. a sea star.
  - b. a sponge.
  - c. a spider.
  - d. a sand dollar.
2. Animals who can control the direction they move in all have
  - a. a home in the ocean.
  - b. development as a deuterostome.
  - c. muscles.
  - d. radial symmetry.
3. Corals detect touch with
  - a. a nerve net.
  - b. a brain.
  - c. a complete digestive system.
  - d. a gamete.
4. \_\_\_\_\_ was one of the first animal traits to evolve.
  - a. cephalization
  - b. a complete digestive system
  - c. a notochord
  - d. multicellularity
5. Humans have
  - a. no symmetry.
  - b. radial symmetry.
  - c. bilateral symmetry.
  - d. none of the above.
6. The mesoderm is located
  - a. outside the ectoderm.
  - b. inside the endoderm.
  - c. in between the ectoderm and endoderm.
  - d. inside the gut.
7. The notochord evolved
  - a. before a bony backbone.
  - b. before multicellularity.
  - c. outside the animal's body.
  - d. none of the above.
8. Squids belong to the phylum
  - a. Porifera.
  - b. Nematoda.
  - c. Arthropoda.
  - d. none of the above



## CHAPTER

## 4

# From Sponges to Invertebrate Chordates Worksheets

## Chapter Outline

- 4.1 SPONGES, CNIDARIANS, FLATWORMS, AND ROUNDWORMS
- 4.2 MOLLUSKS AND ANNELIDS
- 4.3 ARTHROPODS AND INSECTS
- 4.4 ECHINODERMS AND INVERTEBRATE CHORDATES



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- Lesson 18.1: Sponges, Cnidarians, Flatworms, and Roundworms
- Lesson 18.2: Mollusks and Annelids
- Lesson 18.3: Arthropods and Insects
- Lesson 18.4: Echinoderms and Invertebrate Chordates

## 4.1 Sponges, Cnidarians, Flatworms, and Roundworms

### Lesson 4.1: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Sponges are terrestrial invertebrates.
- \_\_\_\_\_ 2. Adult sponges cannot move from place to place on their own.
- \_\_\_\_\_ 3. Because sponges evolved before other invertebrates, they do not have a skeleton.
- \_\_\_\_\_ 4. Bacteria are one food source for sponges.
- \_\_\_\_\_ 5. The function of a nematocyst is gamete (egg and sperm) production.
- \_\_\_\_\_ 6. Cnidarians have ectoderm, endoderm, and mesoderm.
- \_\_\_\_\_ 7. Some Cnidarians have a life cycle in which they alternate between medusa and polyp body forms.
- \_\_\_\_\_ 8. The planula is the larval form of Cnidarians.
- \_\_\_\_\_ 9. Corals have a mutualistic relationship with algae.
- \_\_\_\_\_ 10. Some flatworms are less than an inch long, while others are over 60 feet long.
- \_\_\_\_\_ 11. Flatworms have a respiratory system.
- \_\_\_\_\_ 12. Some flatworms are parasitic.
- \_\_\_\_\_ 13. Roundworms are round because they have pseudocoelom.
- \_\_\_\_\_ 14. Most roundworms reproduce asexually.
- \_\_\_\_\_ 15. Pinworms are a type of roundworm.

### Lesson 4.1: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Members of the Porifera phylum have

- a. no skeleton.
  - b. an exoskeleton.
  - c. an endoskeleton.
  - d. either an exoskeleton or endoskeleton, depending on the species.
2. Sponges reproduce
- a. sexually in a way favoring cross-fertilization.
  - b. sexually in a way favoring self-fertilization.
  - c. asexually with sperm only.
  - d. none of the above
3. Sponges can protect themselves against predators by
- a. moving away from the predator.
  - b. making toxins to poison predators.
  - c. using their muscles.
  - d. a and b
4. The motile stages of the Cnidarian life cycle include the
- a. polyp stage.
  - b. larval stage.
  - c. medusa stage.
  - d. b and c
5. The phylum with endoderm, mesoderm, and ectoderm is
- a. Cnidaria.
  - b. Porifera.
  - c. Platyhelminthes.
  - d. all of the above.
6. Liver flukes
- a. live in a snail host during part of their life cycle, and in a human during another part of their life cycle.
  - b. live in invertebrate hosts only.
  - c. live in vertebrates hosts only.
  - d. are free-living.
7. Roundworms have
- a. a complete digestive system.
  - b. a pseudocoelom.
  - c. muscles.
  - d. all of the above.
8. Pinworm eggs
- a. are a type of egg made by flatworms.
  - b. are made in the soil.
  - c. are made in the host's digestive tract.
  - d. are never found in the United States.

## 4.2 Mollusks and Annelids

### Lesson 4.2: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Mollusks were the first vertebrates to evolve.
- \_\_\_\_\_ 2. Earthworms are mollusks.
- \_\_\_\_\_ 3. The hard outer shell of mollusks is made by the mantle.
- \_\_\_\_\_ 4. Mollusks can be filter feeders.
- \_\_\_\_\_ 5. The radula of mollusks excretes waste from the mollusk's body.
- \_\_\_\_\_ 6. Mollusks have an incomplete digestive system with one opening.
- \_\_\_\_\_ 7. Gills function to digest food.
- \_\_\_\_\_ 8. Mollusks have one or two hearts.
- \_\_\_\_\_ 9. Bivalves are typically very fast moving.
- \_\_\_\_\_ 10. The phylum Annelida consists of unsegmented worms.
- \_\_\_\_\_ 11. Some annelids live in the ocean.
- \_\_\_\_\_ 12. Annelids have a true coelom.
- \_\_\_\_\_ 13. Annelids have an open circulatory system.
- \_\_\_\_\_ 14. Snails are annelids.
- \_\_\_\_\_ 15. In some species of annelids, the same individual can make both female and male gametes.

### Lesson 4.2: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Which of the following is **nota** mollusk?
  - a. hydra
  - b. clam

- c. snail
  - d. squid
2. The outer shell of mollusks is made of
- a. chitin.
  - b. spicules.
  - c. calcium carbonate.
  - d. muscle.
3. Wastes are excreted from mollusks via the
- a. outer shell.
  - b. nerve fibers.
  - c. radula.
  - d. nephridia.
4. Which of the following classes of mollusks has a closed circulatory system?
- a. bivalves
  - b. cephalopods
  - c. gastropods
  - d. poriferans
5. A trochophore is
- a. an excretory organ of annelids.
  - b. an excretory organ of mollusks.
  - c. a larval form of mollusks.
  - d. a larval form of annelids.
6. The class of mollusks that contains only ocean-living organisms is
- a. bivalves.
  - b. cephalopods.
  - c. gastropods.
  - d. segmented worms.
7. The ability of segmented worms to replace broken off segments by growing new ones is called
- a. regeneration.
  - b. suckers.
  - c. tentacles.
  - d. degeneration.
8. An example of a deposit feeder is \_\_\_\_\_.
- a. a squid
  - b. a clam
  - c. a polychaete
  - d. an earthworm

## 4.3 Arthropods and Insects

### Lesson 4.3: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Some estimate that 80% of all species living on earth today are arthropods.
- \_\_\_\_\_ 2. The body segments of an arthropod are the antipode, midpode, and postpode.
- \_\_\_\_\_ 3. Coxal glands get rid of wastes.
- \_\_\_\_\_ 4. Trilobites were terrestrial arthropods.
- \_\_\_\_\_ 5. Arthropods were the first terrestrial animals.
- \_\_\_\_\_ 6. Centipedes and millipedes are characterized by their poison claws.
- \_\_\_\_\_ 7. When crustaceans grow, they shed their exoskeleton by molting and grow a new one.
- \_\_\_\_\_ 8. Hexapoda refers to the six legs of insects.
- \_\_\_\_\_ 9. All insects have only two body regions: thorax and abdomen.
- \_\_\_\_\_ 10. Wings are part of the endoskeleton of an insect.
- \_\_\_\_\_ 11. Some insects use their wings to make sound.
- \_\_\_\_\_ 12. Many insects have a larval stage.
- \_\_\_\_\_ 13. All insects in a colony have the same job.
- \_\_\_\_\_ 14. Termites are solitary insects.
- \_\_\_\_\_ 15. Some crops depend on insects to pollinate them.

### Lesson 4.3: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. A protective, waterproofing structure consisting of several cuticle layers is the \_\_\_\_\_.
  - a. endoskeleton
  - b. exoskeleton

- c. labium
  - d. ocelli
2. Shedding of the exoskeleton is called
- a. molting.
  - b. bolting.
  - c. incision.
  - d. extrasensation.
3. Structures that collect liquid wastes from the blood of some arthropods and concentrate it are the
- a. Macrolipid tubules.
  - b. Malphigian tubules.
  - c. coxal glands.
  - d. toxal glands.
4. The caterpillar is the \_\_\_\_\_ stage of a butterfly
- a. larval
  - b. pupal
  - c. gamete
  - d. adult
5. There are fossil records of the earliest arthropods to evolve, the \_\_\_\_\_.
- a. millipedes
  - b. ticks
  - c. mites
  - d. trilobites
6. Arthropods that are mainly aquatic, scavengers or predators, and have two pairs of antennae and claws are in the subphylum
- a. Myriapoda.
  - b. Chelicerata.
  - c. Crustacea.
  - d. Hexapoda.
7. Arthropods that mainly terrestrial, can be predators or parasites, and have eight walking legs and two body segments are in the subphylum
- a. Myriapoda.
  - b. Chelicerata.
  - c. Crustacea.
  - d. Hexapoda.
8. Ants communicate with chemicals called
- a. silica.
  - b. metronomes.
  - c. biomes.
  - d. pheromones.

## 4.4 Echinoderms and Invertebrate Chordates

### Lesson 4.4: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. A lancelet belongs to the same phylum as a tunicate.
- \_\_\_\_\_ 2. A sea cucumber belongs to the same phylum as a sea star (starfish).
- \_\_\_\_\_ 3. While larval echinoderms have bilateral symmetry, adult echinoderms have radial symmetry.
- \_\_\_\_\_ 4. Echinoderms live in either freshwater or ocean water.
- \_\_\_\_\_ 5. Tube feet depend upon the echinoderm's water vascular system for their ability to attach to a surface.
- \_\_\_\_\_ 6. Wastes are excreted and oxygen diffuses in through the tube feet of echinoderms.
- \_\_\_\_\_ 7. Unlike annelids, echinoderms cannot regenerate a lost body part.
- \_\_\_\_\_ 8. The fertilized embryo of echinoderms develops directly into an adult.
- \_\_\_\_\_ 9. As a group, Echinoderms can obtain food by filter-feeding, scavenging, or preying on other organisms.
- \_\_\_\_\_ 10. The phylum Chordata contains only animals with a backbone.
- \_\_\_\_\_ 11. Chordates have an unsegmented body.
- \_\_\_\_\_ 12. The hollow nerve cord of chordates is located along the dorsal (top) side of the organism.
- \_\_\_\_\_ 13. Adult tunicates are sessile.
- \_\_\_\_\_ 14. Adult lancelets are sessile.
- \_\_\_\_\_ 15. Tunicates can be very brightly colored.

### Lesson 4.4: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. Which of the following organisms is not in the phylum Echinodermata?
  - a. brittle star
  - b. lancelet



- c. sea star
  - d. sand dollar
2. Larval echinoderms have \_\_\_\_\_ symmetry, and adult echinoderms have \_\_\_\_\_ symmetry.
- a. no, bilateral
  - b. radial, radial
  - c. bilateral, radial
  - d. trilateral, bilateral
3. The function of muscular contractions that force water into the tube feet is
- a. regeneration.
  - b. allowing the echinoderm to float with ocean currents.
  - c. digestion.
  - d. to enable the echinoderm to attach to surfaces.
4. Echinoderm reproduction typically is
- a. sexual reproduction by budding.
  - b. sexual reproduction with internal fertilization.
  - c. by regeneration.
  - d. sexual reproduction with external fertilization.
5. The life cycle of an echinoderms typically contains a
- a. free-swimming larval phase.
  - b. pupal phase.
  - c. long-lasting haploid phase.
  - d. all of the above
6. Tunicates live
- a. in the desert.
  - b. in shallow freshwater ponds.
  - c. in shallow ocean water.
  - d. at the bottom of deep freshwater ponds.
7. Which of the following is **nota** defining characteristic of chordates?
- a. pharyngeal slits
  - b. a dorsal hollow nerve cord
  - c. a complete digestive system
  - d. an open circulatory system
8. In humans, pharyngeal slits are present in the embryo and develop into the \_\_\_\_\_ during maturation.
- a. eyes
  - b. nose
  - c. middle ear
  - d. outer ear

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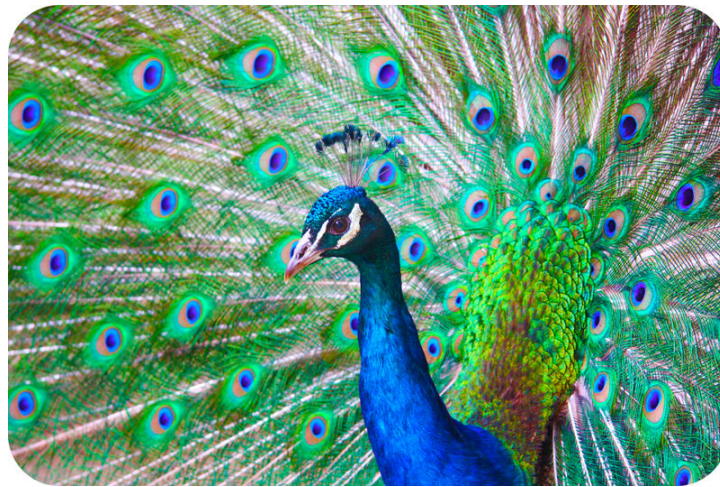
# CHAPTER 5

# From Fish to Birds Worksheets

## Chapter Outline

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- 5.1 OVERVIEW OF VERTEBRATES
  - 5.2 FISH
  - 5.3 AMPHIBIANS
  - 5.4 REPTILES
  - 5.5 BIRDS
- 



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- Lesson 19.1: Overview of Vertebrates
- Lesson 19.2: Fish
- Lesson 19.3: Amphibians
- Lesson 19.4: Reptiles
- Lesson 19.5: Birds

## 5.1 Overview of Vertebrates

### Lesson 5.1: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Like all chordates, vertebrates have a notochord, a dorsal hollow nerve cord, gills, and a post-anal tail.
- \_\_\_\_\_ 2. The main distinguishing feature of vertebrates is their backbone.
- \_\_\_\_\_ 3. Bone is a tough tissue that contains a protein called collagen.
- \_\_\_\_\_ 4. Cartilage is a hard tissue that consists of a collagen matrix, or framework, filled in with minerals such as calcium.
- \_\_\_\_\_ 5. Kidneys are organs that filter blood from waste.
- \_\_\_\_\_ 6. Vivipary occurs in almost all mammals.
- \_\_\_\_\_ 7. The immune system is the organ system that defends the body from pathogens.
- \_\_\_\_\_ 8. There are about 50,000 vertebrate species.
- \_\_\_\_\_ 9. Mammals and birds both evolved from reptile-like ancestors.
- \_\_\_\_\_ 10. Amphibians evolved from reptiles, which evolved from fish.
- \_\_\_\_\_ 11. The earliest vertebrates were jawless fish.
- \_\_\_\_\_ 12. Reptiles were the first vertebrates to live on land.
- \_\_\_\_\_ 13. The earliest vertebrates lived between 500 and 600 million years ago.
- \_\_\_\_\_ 14. The first vertebrates to lay amniotic eggs were amphibians.
- \_\_\_\_\_ 15. Endothermy means regulating body temperature from the outside through behavioral changes.

### Lesson 5.1: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. The main distinguishing feature of vertebrates is their
  - a. fur or hair.

- b. backbone.
  - c. cranium.
  - d. immune system.
2. Which statement about cartilage and bone is correct?
- a. An endoskeleton made of bone rather than cartilage allows animals to grow larger and heavier.
  - b. Cartilage is less flexible than bone, but stronger.
  - c. Cartilage is a hard tissue that consists of a collagen matrix, or framework, filled in with minerals such as calcium.
  - d. A distinguishing feature of vertebrates is their exoskeleton made of bone or cartilage.
3. Traits of vertebrates include
- a. an endoskeleton made of bone or cartilage.
  - b. an excretory system that includes a pair of kidneys.
  - c. a system of muscles that enable movement.
  - d. all of the above.
4. Most mammals reproduce using which strategy?
- a. ovovivipary
  - b. vivipary
  - c. ovipary
  - d. placental development
5. The nine different classes of vertebrates include
- a. four fish classes and amphibians, reptiles, birds, whales and mammals.
  - b. four fish classes and amphibians, reptiles, birds, mammals and primates.
  - c. five fish classes and amphibians, reptiles, birds, and mammals.
  - d. five fish classes and amphibians, reptiles, monkeys, and mammals.
6. The first vertebrate class to evolve was the
- a. hagfish class.
  - b. lamprey class.
  - c. mammalian class.
  - d. amphibian class.
7. The first vertebrates on land were the
- a. reptiles.
  - b. birds.
  - c. lobe-finned fish.
  - d. amphibians.
8. Which of the following statements is correct concerning endothermy? (1) Mammals and birds evolved endothermy. (2) All vertebrates are endothermic. (3) Endothermy is regulating body temperature from the inside using metabolic or other physical changes. (4) Endothermy is regulating body temperature from the outside through behavioral changes.
- a. 1 and 3
  - b. 2 and 4
  - c. 1 and 4
  - d. 2 and 3

## 5.2 Fish

### Lesson 5.2: True or False

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Fish make up more than half of all vertebrate species.
- \_\_\_\_\_ 2. Fish can be more than 50 feet long.
- \_\_\_\_\_ 3. Fish breathe oxygen found in the water.
- \_\_\_\_\_ 4. Fish have a four-chambered heart that allows them to swim long distances.
- \_\_\_\_\_ 5. Spawning increases the chances that fertilization will take place, and is the first step in parental care of their young.
- \_\_\_\_\_ 6. Fish larvae are attached to a large yolk sac.
- \_\_\_\_\_ 7. Lampreys feed on the blood of other fish species.
- \_\_\_\_\_ 8. Many cartilaginous fish have powerful jaws.
- \_\_\_\_\_ 9. Hagfish are the first fish with a backbone.
- \_\_\_\_\_ 10. The rays are excellent swimmers, despite their strong bony skeletons.
- \_\_\_\_\_ 11. According to the fossil record, bony fish evolved before the cartilaginous fish.
- \_\_\_\_\_ 12. The majority of living fish species is ray-fined fish.
- \_\_\_\_\_ 13. Sharks have a small brain but keen eyesight, making them excellent predators.
- \_\_\_\_\_ 14. Some fish can self-fertilization by producing sperm and eggs.
- \_\_\_\_\_ 15. A swim bladder allows fish to move up or down through the water column.

### Lesson 5.2: Multiple Choice

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Adaptations for water in fish include
  - a. several fins for swimming.

- b. a system of muscles for movement.
  - c. gills that allow them to “breathe” oxygen in water.
  - d. all of the above.
- 2. A swim bladder allows fish to
  - a. move the tail fin against the water to propel the fish through the water.
  - b. move up or down through water.
  - c. reduce water resistance when they swim.
  - d. get rid of waste products while they swim.
- 3. Most fish species belong to which class?
  - a. cartilaginous fish
  - b. lobe-finned fish
  - c. ray-finned fish
  - d. lampreys
- 4. Characteristics of sharks include
  - a. an endoskeleton composed of cartilage.
  - b. a swim bladder, like all other fish.
  - c. a relatively small brain.
  - d. all of the above.
- 5. Lampreys are known for
  - a. secreting large amounts of thick, slimy mucus.
  - b. feeding on the blood of other fish species using their large round sucker.
  - c. their relatively large brain.
  - d. a lung-like organ for breathing air.
- 6. A fish larvae
  - a. is very similar to the adult fish.
  - b. is born sexually mature.
  - c. is attached to a large yolk sac, which provides the larva with food.
  - d. none of the above
- 7. Spawning is when a
  - a. large group of adults release their gametes into the water at the same time.
  - b. male and female fish release their gametes together.
  - c. male fertilizes the females eggs.
  - d. a group of eggs develops into larvae.
- 8. Fish organ systems include
  - a. a centralized nervous system with a brain.
  - b. an incomplete digestive system with just one opening.
  - c. a circulatory system with a four-chambered heart.
  - d. all of the above.

## 5.3 Amphibians

### Lesson 5.3: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Amphibians live on land and in the water.
- \_\_\_\_\_ 2. Amphibians are the first true vertebrates with four limbs.
- \_\_\_\_\_ 3. Amphibians are ectothermic, meaning they can warm their body through metabolic processes.
- \_\_\_\_\_ 4. Amphibians have a cloaca, a shared body cavity with separate openings for wastes and gametes.
- \_\_\_\_\_ 5. Of all amphibians, frogs generally have the best vision and hearing, and a larynx to make sounds.
- \_\_\_\_\_ 6. Most amphibians breathe with lungs as larvae and with gills as adults.
- \_\_\_\_\_ 7. Just like their vertebrate relatives, the reptiles, birds, and mammals, amphibians produce amniotic eggs.
- \_\_\_\_\_ 8. Many amphibians can absorb oxygen through their skin.
- \_\_\_\_\_ 9. During metamorphosis, the amphibian grows legs, grows a tail, and develops lungs.
- \_\_\_\_\_ 10. Frogs croak when searching for mates.
- \_\_\_\_\_ 11. Salamanders cannot jump; instead, they walk and swim.
- \_\_\_\_\_ 12. The amphibian tadpole resembles a fish.
- \_\_\_\_\_ 13. Caecilians are most closely related to salamanders; these amphibians also walk and swim.
- \_\_\_\_\_ 14. Amphibians have important roles in food webs, as predators of birds and snakes, and as prey for worms, snails, and insects.
- \_\_\_\_\_ 15. The frog's back legs are modified for jumping, whereas the toad's back legs are modified for swimming.

### Lesson 5.3: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Amphibian skin

- a. contains keratin, which in amphibians is not very tough, and it allows gases and water to pass through the skin.
  - b. is usually moist and has scales.
  - c. can be either moist or dry.
  - d. contains keratin, a tough, fibrous protein which keeps skin water- and air-tight.
2. Amphibians breathe
  - a. with lungs.
  - b. with lungs as larvae and with gills as adults.
  - c. with gills as larvae and with lungs as adults.
  - d. with gills.
3. Which statement is true of amphibian larvae?
  - a. The amphibian larval stage is very different from the adult form.
  - b. The early amphibian larvae resembles a fish.
  - c. The early amphibian larvae has gills to absorb oxygen from water.
  - d. all of the above
4. Frogs and tadpoles
  - a. are separate orders of amphibian.
  - b. have front and back legs that are modified for jumping.
  - c. have back legs that are modified for jumping.
  - d. none of the above
5. Salamanders
  - a. have a long body with short legs.
  - b. are adapted for walking and swimming rather than jumping.
  - c. can regrow legs that have been lost to predators.
  - d. all of the above
6. Caecilians
  - a. have a long, worm-like body without legs.
  - b. are adapted for walking and swimming.
  - c. can regrow legs that have been lost to predators.
  - d. have front and back legs that are modified for jumping.
7. Which statement is true of amphibians and their role in the ecosystem?
  - a. Amphibians are important predators of animals such as birds, snakes, raccoons, and fish.
  - b. Amphibians are important in an ecosystem as both prey and predators.
  - c. As adults, amphibians are omnivores, feeding on both plants and animals.
  - d. all of the above
8. Amphibians evolved into
  - a. reptiles.
  - b. birds.
  - c. mammals.
  - d. fish.



## 5.4 Reptiles

### Lesson 5.4: True or False

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Reptiles include crocodiles, alligators, lizards, turtles, and all snakes except water snakes.
- \_\_\_\_\_ 2. Reptiles are tetrapod vertebrates that produce amniotic eggs.
- \_\_\_\_\_ 3. Reptile skin is covered with scales, which keeps the skin moist.
- \_\_\_\_\_ 4. On land, reptiles breathe air through their lungs, and in the water, they breathe using their gills.
- \_\_\_\_\_ 5. It is possible for some reptiles to go weeks without eating.
- \_\_\_\_\_ 6. Snakes smell using their tongue.
- \_\_\_\_\_ 7. All reptiles have a three-chambered heart.
- \_\_\_\_\_ 8. Like the amphibian tadpole, the reptilian larval stage also resembles a fish.
- \_\_\_\_\_ 9. The shell, membranes, and other structures of the reptilian amniotic egg protect and nourish the embryo.
- \_\_\_\_\_ 10. Some reptiles are at the top of the food chain - they are the top predators in their ecosystems.
- \_\_\_\_\_ 11. Alligators replace their teeth throughout their life.
- \_\_\_\_\_ 12. Turtles are the least specialized of all living reptiles.
- \_\_\_\_\_ 13. Snakes can swallow large prey whole.
- \_\_\_\_\_ 14. Small crocodiles were early ancestors of most reptiles.
- \_\_\_\_\_ 15. Crocodiles and alligators use a diaphragm to control their breathing, just like humans.

### Lesson 5.4: Multiple Choice

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Reptiles include which of the following? (1) crocodiles, (2) lizards, (3) snakes, (4) turtles.
  - a. 1 and 2
  - b. 3 and 4

- c. 1, 2, and 3
  - d. 1, 2, 3, and 4
2. Adaptations of reptiles for living on land include
- a. sense organs to smell and taste chemicals.
  - b. a relatively complex circulatory system with a three-chambered heart.
  - c. skin of most reptiles is covered with scales made of very tough keratin.
  - d. all of the above.
3. Reptiles breathe air
- a. only through their lungs.
  - b. through their skin.
  - c. through both the skin and lungs, like amphibians.
  - d. with gills as larvae.
4. Reptiles are ectotherms. This means
- a. they warm their bodies through their behavior.
  - b. they cannot use metabolism to generate heat.
  - c. they need less food than mammals to survive.
  - d. all of the above.
5. There are four orders of reptiles. They are the
- a. Crocodilia, Sphenodontia, Squamata, and Testudines.
  - b. Crocodilia, Alligatoria, Squamata, and Testudines.
  - c. Crocodiles, Lizards, Snakes, and Turtles.
  - d. Alligatoria, Sphenodontia, Squamata, and Testudines.
6. The reptile amniotic egg
- a. protect and nourish the embryo during development.
  - b. keeps the embryo moist and safe while it grows and develops.
  - c. provides the embryo with a rich, fatty food source.
  - d. all of the above
7. Characteristics of the Crocodilia order include
- a. permanent teeth.
  - b. a three-chambered heart.
  - c. four sprawling legs that can be used to gallop.
  - d. none of the above.
8. Which statement about reptilian evolution is correct? (1) Reptiles, dinosaurs, and birds all developed from sauropsids. (2) Sauropsids evolved into dinosaurs. (3) Dinosaurs evolved from reptiles. (4) Lizards and snakes were the last reptiles to evolve.
- a. 1 and 2
  - b. 1, 2, and 3
  - c. 1, 2, and 4
  - d. 1, 2, 3, and 4

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## 5.5 Birds

### Lesson 5.5: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Birds are endothermic tetrapod vertebrates.
- \_\_\_\_\_ 2. Birds lay amniotic eggs with hard, calcium carbonate shells.
- \_\_\_\_\_ 3. Birds are the youngest but most numerous class of vertebrates on Earth.
- \_\_\_\_\_ 4. All modern birds have wings, feathers, and beaks.
- \_\_\_\_\_ 5. Wings are modified front legs.
- \_\_\_\_\_ 6. Down feathers are short and fluffy; they help a bird fly downward.
- \_\_\_\_\_ 7. Birds have an organ called a crop, which contains stones that grind food.
- \_\_\_\_\_ 8. Most birds abandon their young at birth.
- \_\_\_\_\_ 9. Flightless birds are good at running or swimming.
- \_\_\_\_\_ 10. Courtship in birds can involve singing or dancing.
- \_\_\_\_\_ 11. Bird beaks have adapted for the food they eat.
- \_\_\_\_\_ 12. Some birds stay together for life.
- \_\_\_\_\_ 13. Shorebirds, such as ducks, geese, and swans, spend most of their time on the water surface.
- \_\_\_\_\_ 14. Diurnal raptors are active during the night and sleep during the day.
- \_\_\_\_\_ 15. Parrots are found in tropical regions and are very intelligent.

### Lesson 5.5: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Birds
  - a. have eggs with hard, calcium carbonate shells.
  - b. lay amniotic eggs.

- c. are bipedal.
  - d. all of the above
2. Adaptations for flight in birds include
- a. air sacs that store inhaled air and push it into the lungs.
  - b. solid bones that are filled with air.
  - c. a relatively large, two-chambered heart.
  - d. all of the above.
3. A crop and gizzard
- a. keep the lungs constantly filled with oxygenated air.
  - b. are both part of the bird's digestive process.
  - c. keep oxygenated blood flowing to muscles and other tissues.
  - d. are part of a light-weight keratin beak.
4. Courtship in birds may include
- a. singing and dancing.
  - b. a display of bravery.
  - c. drinks and dinner.
  - d. all of the above.
5. Which of the following statements about incubation is true? In birds, incubation (1) keeps the eggs warm while the embryos inside continue to develop, (2) may be done by males, (3) is only done by females.
- a. 1 only
  - b. 1 and 2
  - c. 3 only
  - d. 1, 2, and 3
6. Flightless birds include
- a. ostriches.
  - b. penguins.
  - c. kiwis.
  - d. all of the above.
7. Birds probably evolved from
- a. frogs and toads.
  - b. dinosaurs.
  - c. insects.
  - d. none of the above.
8. Which of the following statements are true of bird diets? (1) Some birds are generalists. (2) Vultures are scavengers. (3) Bird beaks are generally adapted for the food they eat. (4) Raptors such as hawks and owls are omnivores.
- a. 1 and 2
  - b. 2 and 3
  - c. 1, 2, and 3
  - d. 1, 2, 3, and 4

## CHAPTER

## 6

# Mammals and Animal Behavior Worksheets

## Chapter Outline

- 6.1 MAMMALIAN TRAITS
- 6.2 REPRODUCTION IN MAMMALS
- 6.3 EVOLUTION AND CLASSIFICATION OF MAMMALS
- 6.4 OVERVIEW OF ANIMAL BEHAVIOR



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- Lesson 20.1: Mammalian Traits
- Lesson 20.2: Reproduction in Mammals
- Lesson 20.3: Evolution and Classification of Mammals
- Lesson 20.4: Overview of Animal Behavior

## 6.1 Mammalian Traits

### Lesson 6.1: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Examples of mammals include frogs, bats, whales, mice, and humans.
- \_\_\_\_\_ 2. Milk contains disease-fighting molecules and nutrients a baby mammal needs.
- \_\_\_\_\_ 3. The heart of a mammal consists of three chambers, making it very efficient and powerful for delivering oxygenated blood to tissues.
- \_\_\_\_\_ 4. The mammalian middle ear has three tiny bones that carry sound vibrations from the inner to outer ear.
- \_\_\_\_\_ 5. The cheetah is the fastest land mammal.
- \_\_\_\_\_ 6. Herbivores such as zebras and lions live in herds.
- \_\_\_\_\_ 7. Of all animals, mammals are most capable of learning.
- \_\_\_\_\_ 8. The cerebrum controls functions such as memory and learning.
- \_\_\_\_\_ 9. Clusters of alveoli in the lungs resemble tiny bunches of grapes.
- \_\_\_\_\_ 10. Cellular respiration maintains the high metabolic rate in mammals.
- \_\_\_\_\_ 11. Omnivores, such the bear, fox, wolf, and rat, eat both plants and animals.
- \_\_\_\_\_ 12. Maintaining the high metabolic rate needed by mammals takes a lot of energy, which comes from either the sun or food.
- \_\_\_\_\_ 13. Goosebumps result from tiny muscles in the skin.
- \_\_\_\_\_ 14. Mammals, like all vertebrates, have four different types of teeth.
- \_\_\_\_\_ 15. Mammals have hair, scales, or fur, which insulates the body to help conserve body heat.

### Lesson 6.1: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Examples of mammals include

- a. fish.
  - b. snakes.
  - c. whales.
  - d. frogs.
2. Two characteristics used to define mammals include
  - a. mammary glands and scales.
  - b. mammary glands and hair or fur.
  - c. mammary glands and sweat glands.
  - d. sweat glands and a four-chamber heart.
3. Mammals generate heat by
  - a. keeping a high metabolic rate.
  - b. laying in the sun and absorbing heat.
  - c. increasing blood flow to the skin.
  - d. all of the above
4. Mammals are unique in having
  - a. lungs with alveoli, tiny, sac-like structures where gas exchange occurs.
  - b. kidneys with alveoli, tiny, sac-like structures where blood filtering occurs.
  - c. alveoli, which increase blood flow to the skin allowing excess heat to escape.
  - d. alveoli with extra mitochondria, keeping metabolism high and generating heat.
5. Mammals with a carnivorous diet include the
  - a. rabbit, mouse, elephant, zebra, and monkey.
  - b. bear, badger, fox, human, and rat.
  - c. aardvark, whale, hyena, dog, dolphin, and mole.
  - d. giraffe, deer, elk, walrus, human, and rat.
6. Which of the following statements are true of the mammalian brain? (1) Of all vertebrates, mammals have the biggest and most complex brain for their body size. (2) The cerebrum controls functions such as memory and learning. (3) The larger the neocortex, the greater the mental abilities of an animal. (4) The area of the neocortex is greatest in humans.
  - a. 1 and 2
  - b. 3 and 4
  - c. 1, 2, and 3
  - d. 1, 2, 3, and 4
7. Mammals are social animals. Which of the following statements is correct?
  - a. Herbivores such as zebras and dolphins live in herds.
  - b. Adults in a herd surround and protect the young, who are most vulnerable to predators.
  - c. Adult males in a pride hunt cooperatively, which is more efficient than hunting alone.
  - d. all of the above
8. Tree-living mammals have a variety of different specializations for moving in trees, including
  - a. very long arms for swinging from tree to tree.
  - b. sticky pads on their arms and legs that help them cling to tree trunks and branches.
  - c. a prehensile tail used for climbing and hanging from branches.
  - d. all of the above.

## 6.2 Reproduction in Mammals

### Lesson 6.2: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Most mammals are viviparous.
- \_\_\_\_\_ 2. Mammals that are viviparous are called therian mammals.
- \_\_\_\_\_ 3. There are mammals that lay eggs instead of giving birth to an infant or embryo.
- \_\_\_\_\_ 4. The vagina is a pouch-like, muscular organ where the baby develops.
- \_\_\_\_\_ 5. Therian mammals are divided into three groups: placental mammals, monotreme mammals, and marsupial mammals.
- \_\_\_\_\_ 6. The uterus sustains the fetus while it grows inside the mother's placenta.
- \_\_\_\_\_ 7. The placenta allows the exchange of gases, nutrients, and other substances between the fetus and mother.
- \_\_\_\_\_ 8. Kangaroo and koala are marsupials.
- \_\_\_\_\_ 9. The marsupial embryo is nourished inside the placenta with food from a yolk sac instead of through the uterus.
- \_\_\_\_\_ 10. Because the mother produces a placenta, a fetus can become large and mature before birth.
- \_\_\_\_\_ 11. Marsupials live mainly in Australia.
- \_\_\_\_\_ 12. Therian females have reproductive structures that are not found in other vertebrates.
- \_\_\_\_\_ 13. The only living monotreme specie is the platypus.
- \_\_\_\_\_ 14. Female monotremes are like reptiles and birds, with a cloaca with one opening.
- \_\_\_\_\_ 15. Only five living species of mammals are therian mammals.

### Lesson 6.2: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*



1. Therian mammals
  - a. are viviparous.
  - b. have young that are born live.
  - c. have young that are born either as relatively large, well-developed fetuses or as tiny, immature embryos.
  - d. all of the above
2. All female mammals have
  - a. ovaries, which are the organs that produce eggs.
  - b. a uterus, which is a tubular passageway through which the embryo or fetus leaves the mother's body during birth.
  - c. a vagina, a pouch-like, muscular organ where the embryo or fetus develops until birth.
  - d. all of the above.
3. Which statement is true of a placenta?
  - a. The placenta passes oxygen, nutrients, and other useful substances from the fetus to the mother.
  - b. The placenta passes oxygen, nutrients, and other useful substances from the mother to the fetus.
  - c. The placenta mixes blood from the mother and fetus together.
  - d. The placenta protects the mother from being attacked by the fetal immune system.
4. Advantages to placental reproduction include
  - a. reduced mobility of the mother as the baby grows.
  - b. the ability to abandon the baby to save the mother's life if necessary.
  - c. a long period of fetal growth, allowing the fetus to become large and mature before birth.
  - d. all of the above.
5. Marsupials include
  - a. the kangaroo.
  - b. the platypus.
  - c. humans.
  - d. all whales.
6. Among mammals, female monotremes are unique in that they
  - a. have a pouch where the fetus completes development.
  - b. have a cloaca with one opening.
  - c. "sweat" milk from a patch on their mammary glands.
  - d. live mainly in Australia.
7. Female monotremes
  - a. lay eggs.
  - b. have a placenta.
  - c. lack a vagina but have a uterus.
  - d. lay eggs and have a placenta.
8. An advantage to marsupial reproduction is that
  - a. the marsupial mother has to eat extra food, and marsupials love to eat.
  - b. there is a short period of development within the mother's uterus.
  - c. a newborn marsupial is small, making delivery and development easy on the mother.
  - d. due to their size, newborn marsupials have a very high survival rate.

## 6.3 Evolution and Classification of Mammals

### Lesson 6.3: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. Ancestors of mammals evolved close to 30 million years ago.
- \_\_\_\_\_ 2. The positioning of legs under the body instead of along the sides was an early adaptation in mammal evolution.
- \_\_\_\_\_ 3. The ability to regulate body temperature would allow nocturnal animals to remain active at night.
- \_\_\_\_\_ 4. A good sense of vision would be more useful than good hearing when hunting in the dark.
- \_\_\_\_\_ 5. Cynodonts were early ancestors to mammals, and were about the size of a rat.
- \_\_\_\_\_ 6. Of all the mammals, placental mammals were probably the first to evolve.
- \_\_\_\_\_ 7. Unlike modern monotremes, early monotremes did not lay eggs.
- \_\_\_\_\_ 8. The earliest placental mammals were tree climbers and probably ate insects and worms.
- \_\_\_\_\_ 9. Dinosaurs went extinct 65 million years ago.
- \_\_\_\_\_ 10. To this day, marsupials remain the most common and diverse mammals found only in Africa.
- \_\_\_\_\_ 11. The extinction of the dinosaurs allowed mammals to flourish.
- \_\_\_\_\_ 12. The most widely accepted classification of mammals divides living placental mammals into 17 families.
- \_\_\_\_\_ 13. Whales are mammals, but seals are not.
- \_\_\_\_\_ 14. Humans and rats are grouped into the same superorder.
- \_\_\_\_\_ 15. Though not mammals, cynodonts evolved many mammalian traits.

### Lesson 6.3: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. When did the earliest mammal live?
  - a. over 150 million years ago

- b. 150 million years ago
  - c. 130 million years ago
  - d. 110 million years ago
2. Pelycosaurs
- a. had sprawling legs and walked like a lizard.
  - b. had teeth of different types.
  - c. was a synapsid.
  - d. all of the above
3. Therapsids
- a. had a good sense of hearing.
  - b. had the ability to regulate their body temperature.
  - c. had legs positioned under the body instead of along the sides.
  - d. all of the above
4. By the end of the Triassic Period, cynodonts had
- a. three tiny bones in the middle ear.
  - b. ectothermy.
  - c. a diaphragm for eating.
  - d. all of the above.
5. Place the following in their correct evolutionary order.
- a. marsupials - placental mammals - monotremes
  - b. monotremes - marsupials - placental mammals
  - c. marsupials - monotremes - placental mammals
  - d. placental mammals - marsupials - monotremes
6. The most widely accepted traditional classification of mammals divides living placental mammals into \_\_\_\_ - \_\_\_\_\_ orders.
- a. 7
  - b. 12
  - c. 17
  - d. 22
7. Traits of primates include
- a. five digits on their hands and feet.
  - b. rubbery pads on their feet.
  - c. long, pointed canine teeth.
  - d. all of the above.
8. The most successful mammals are the
- a. marsupials, who practically have a whole continent to themselves.
  - b. monotremes, who have a very specific niche without competitors.
  - c. placental mammals, who have become dominant on most continents.
  - d. none of the above

## 6.4 Overview of Animal Behavior

### Lesson 6.4: True or False

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. The branch of biology that studies animal behavior is called psychology.
- \_\_\_\_\_ 2. Some behaviors are controlled by genes.
- \_\_\_\_\_ 3. Hunting in packs is an adaptive behavior because it increases the chances of killing prey and obtaining food.
- \_\_\_\_\_ 4. A spider spinning a web is a learned behavior.
- \_\_\_\_\_ 5. Innate behaviors must be practiced to be learned.
- \_\_\_\_\_ 6. Innate behaviors involve basic life functions, such as finding food.
- \_\_\_\_\_ 7. A society forms from all the different species that live together.
- \_\_\_\_\_ 8. Animals can communicate with sounds, chemicals, or visual cues.
- \_\_\_\_\_ 9. Social animals live and work together for the good of the group.
- \_\_\_\_\_ 10. Ants communicate with sounds while frogs communicate with chemicals.
- \_\_\_\_\_ 11. Circadian rhythms are regular changes in biology or behavior that occur in a daytime-nighttime cycle.
- \_\_\_\_\_ 12. Aggression is behavior that is intended to cause harm or pain.
- \_\_\_\_\_ 13. Two male deer competing for mates is an example of interspecific competition.
- \_\_\_\_\_ 14. In most species of mammals, parents provide little care to their offspring.
- \_\_\_\_\_ 15. In many mammals, females are more selective than males in choosing mates.

### Lesson 6.4: Multiple Choice

Name\_\_\_\_\_ Class\_\_\_\_\_ Date\_\_\_\_\_

*Circle the letter of the correct choice.*

- 1. Examples of animal behaviors include
  - a. a spider spinning its web.

- b. children playing.
  - c. animals hunting.
  - d. all of the above.
2. The branch of biology that studies animal behavior is
- a. veterinary biology.
  - b. ethology.
  - c. psychology.
  - d. behaviorology.
3. Behaviors that are closely controlled by genes with little or no environmental influence are
- a. innate behaviors.
  - b. instinct behaviors.
  - c. learning behaviors.
  - d. cooperation behaviors.
4. The nature-nurture debate is a discussion of
- a. the effects of nature on behavior.
  - b. the effects of one's parents on their behavior.
  - c. whether behaviors are controlled mainly by genes or by the environment.
  - d. the effects of the constant struggle between nature and the environment.
5. A reflex is a
- a. response that always occurs when a certain instinct is present.
  - b. response that always occurs when a certain stimulus is present.
  - c. response that always occurs when a certain behavior is present.
  - d. response that always occurs when a certain learning is present.
6. Social animals
- a. must have a way to communicate.
  - b. cooperate together for the good of the group.
  - c. can do many things that a lone animal could never do.
  - d. all of the above
7. Circadian rhythms
- a. are regular changes in biology that occur in a 24-hour cycle.
  - b. are seasonal movements of animals.
  - c. refers to the union of a male and female of the same species for reproduction.
  - d. is a rhythm that develops as a result of learned experience.
8. Aggression
- a. is a learned behavior.
  - b. is based on one's circadian rhythms.
  - c. is intended to cause harm or pain.
  - d. all of the above