

The Diversity of Living Things: Unit 1, Lesson 5, “Classification of Living Things.”

Answers

Answers for 1-3 should represent students' current thoughts, even if incorrect.

1. F; F; T; T; F

2. Sample answer: The plant does not have green leaves surrounding its stem. It has petals like other plants.

3. Sample answer: a group of plants

4. Students should define or sketch each vocabulary term in the lesson.

4. Students should fill in the table with the following check marks. Yellow pansy butterfly: wings, antennae; American goldfinch: wings, beak, feathers

6. The butterfly and the goldfinch are both animals, and they both have yellow and black coloration and wings. They are different kinds of animals and have different body parts and coverings.

7. DNA indicates characteristics that may not be visible to scientists. It is also more objective than an observation. A red panda looks a bit like a giant panda, but its DNA indicates that they are not as similar as they look.

8. *See students' pages for annotations.*

9. *See students' pages for annotations.*

10. There are fewer organisms in the level of classification.

11. *See students' pages for annotations.*

12. A: Eukarya; B. Plants; C: Fungi; D: Animals

13. Bacteria are single-celled, have cell walls, and reproduce by cell division. they do not have a nucleus. Eukarya may be multicellular and have cell membranes instead of walls. They contain a nucleus, and have larger and more complex cells.

14. Protists may be single-celled or multicellular, while plants are always multicellular. Protists either make their own food or eat the organisms. Almost all plants make their own food.

15. *See students' pages for annotations.*

16. Students should fill in the table with the following check marks: Protista: All boxes are checked; Plantae: Unicellular, Multicellular, Autotrophic, Sexual, Asexual; Fungi: Unicellular, Multicellular, Sexual, Asexual; Animalia: Multicellular, Heterotrophic, Sexual, Asexual.

17. Sample answer: Protists may need to be classified in several kingdoms instead of just one.

18. All of the plants to the right of the line marked “seeds” produce seeds. This means flowering plants and conifers produce seeds.

19. A sea spider would be in the domain Eukarya because it is an animal

20. Student output should demonstrate knowledge of how DNA is used to classify organisms.

21. Student output should demonstrate knowledge of the characteristics used to classify Euglena and sea spiders.

Answers (cont.)

22. A: beaver; B. long-tailed weasel

23. *See students' pages for annotations.*

24. Student output should demonstrate knowledge of how dichotomous keys are set up.

Visual Summary Answers

25. T

26. T

27. F

28. F

29. F

30. T

31. Sample answer: Scientists can now classify living things according to DNA. In the past, scientists could only look at physical characteristics.

Lesson Review Answers

1. dichotomous key

2. Protista

3. Bacteria; Archaea

4. domain, kingdom, phylum, class, order, family, genus, species

5. Scientists ask questions, such as: Is the organism unicellular or multicellular, autotrophic or heterotrophic? How does the organism reproduce?

6. physical characteristics and chemical characteristics

7. Sample answer: Dichotomous keys are used to identify unknown organisms. Branching diagrams are used to describe the characteristics that different organisms share.

8. forward vision, opposable thumbs, and full color vision

9. chimpanzees

10. No, they do not both have the trait. Only humans have the trait. Lemurs are listed on a branch to the left of the train, so they do not have it.

11. Sample answer: The organism belongs in Kingdom Fungi. Fungi can be multicellular. Most cannot move, and they get food by releasing digestive juices into their environment.