Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading A

Section: Seed Plants

1. How are gymnosperms and angiosperms different?

_____

_____

_____

_____

_____

_____

CHARACTERISTICS OF SEED PLANTS

Fill in each blank with either "seedless plants" or "seed plants."

2. In _____, the gametophytes do not live independently of the sporophytes.

3. The gametophytes of _____ form within the reproductive structures of the sporophyte.

4. The sperm of _____ need water to swim to the eggs of female gametophytes.

5. The sperm of _____ can reach the eggs without the help of water.

6. The sperm of _____ form inside of pollen, which is carried by wind or by animals

7. The most common plants on Earth are _____.

Name _____ Class _____ Date _____

Directed Reading A *continued*

THE STRUCTURE OF SEEDS

Match the correct definition with the correct term. Write the letter in the space provided.

_____ **8.** the young plant within a seed

_____ **9.** structure that surrounds and protects the young plant

_____ **10.** seed leaves of a young plant

_____ **11.** joining of sperm and egg

_____ **12.** often the purpose of the cotyledons

a. cotyledons
b. fertilization
c. food storage
d. seed coat
e. sporophyte

13. Name two advantages of seeds over spores.

_____

_____

_____

_____

GYMNOSPERMS

_____ **14.** Seed plants that do not have flowers or fruit are called
a. sporophytes. **c.** gametophytes.
b. angiosperms. **d.** gymnosperms.

_____ **15.** Gymnosperm seeds are usually protected by
a. leaves. **c.** fruits.
b. cones. **d.** humans.

_____ **16.** The most economically important gymnosperms are the
a. conifers. **c.** cycads.
b. ginkgoes. **d.** gnetophytes.

_____ **17.** Three things that conifers are used for are
a. building materials, cancer drugs, and gardens and parks.
b. paper products, resin, and syrup.
c. allergy drugs, leather, and resin.
d. building materials, fresh fruit, and gardens and parks.

Name _____ Class _____ Date _____

Directed Reading A *continued*

Match the correct definition with the correct term. Write the letter in the space provided.

_____**18.** most are evergreens

_____**19.** group of gymnosperms that are shrubs that grow in dry areas

_____**20.** group of gymnosperms with only one living species

_____**21.** gymnosperms that grow in the Tropics

a. ginkgoes
b. cycads
c. conifers
d. gnetophytes

22. During the pine life cycle, sex cells are produced in the _____.

23. The male _____ of gymnosperms are found in pollen.

24. Pollen is carried from the male cone to the female cone by _____.

25. Some pine cones release seeds only during _____.

26. The transfer of pollen from the male reproductive structures to the female reproductive structures of seed plants is called _____.

ANGIOSPERMS

_____**27.** About how many species of angiosperms can be found today?
a. over 1,000
b. at least 235,000
c. just a few
d. over one million

28. How are angiosperm fruits and seeds transported to new areas?

_____

_____

_____

Name _____ Class _____ Date _____

Directed Reading A *continued*

Each of the following phrases describes, or is an example of, either a monocot or a dicot. In the space provided, write M for a monocot and D for a dicot.

_____**29.** plant that has one cotyledon (seed leaf)

_____**30.** vascular tissue in bundles that are scattered

_____**31.** plant that has leaves with branching veins

_____**32.** flower parts in threes

_____**33.** vascular tissue in a ring

_____**34.** flower parts in fours or fives

35. Explain the difference between the way that a field mouse and the way that an owl benefit from flowering plants.

36. List three ways that people use flowering plants.

Answer Key

Directed Reading A

SECTION: WHAT IS A PLANT?

1. Almost all food is made from plants or from animals that eat plants.
2. B
3. C
4. C
5. C
6. E
7. A
8. D
9. B
10. sporophyte
11. gametophytes
12. sporophyte
13. F
14. A
15. E
16. B
17. C
18. D
19. Answers will vary. Sample answers: Modern green algae and plants contain the same kinds of chlorophyll. They both make food through photosynthesis. They both store energy as starch. They both have a two-stage life cycle. They have similar cell walls.

SECTION: SEEDLESS PLANTS

1. nonvascular plants: liverworts, mosses, hornworts; seedless vascular plants: horsetails, ferns, club mosses
2. B
3. C
4. C
5. D
6. Answers will vary. Sample answer: They are usually the first plants to live in a new environment. When they die, they form a thin layer of soil that new plants can grow in. They reduce soil erosion. They are food for some animals. Some animals use them for nesting material. Humans can dry and burn some types of nonvascular plants as a fuel. Some types of nonvascular plants are used in potting soil.
7. club mosses
8. rhizome
9. The fern gametophyte is tiny, green, and heart-shaped.
10. fiddleheads
11. C
12. F
13. H
14. D
15. G
16. A
17. B
18. E
19. Answers will vary. Sample answers: They help form soil. They help prevent soil erosion. In rocky areas, ferns can play a role in the formation of communities. Ferns add to soil depth, which allows other plants to grow.
20. Answers will vary. Sample answer: ferns and some club mosses
21. Answers will vary. Sample answer: fiddleheads of some ferns, young horsetail shoots and roots
22. Their remains formed coal, which is used for energy.

SECTION: SEED PLANTS

1. Answers will vary. Sample answer: Gymnosperms do not have flowers or fruits. Angiosperms have flowers and fruits and the fruits protect the seeds.
2. seed plants
3. seed plants
4. seedless plants
5. seed plants
6. seed plants
7. seed plants
8. E
9. D
10. A
11. B
12. C

13. Answers will vary. Sample answer: Seeds have stored food that young plants can use to start growing, while spores do not have stored food. Seeds can be spread by animals, while spores are generally spread by the wind, which is not as efficient as animals.
14. D
15. B
16. A
17. A
18. C
19. D
20. A
21. B
22. cones
23. gametophytes
24. wind
25. forest fires
26. pollination
27. B
28. Answers will vary. Sample answer: Some seeds are carried by the wind. Some fruits are eaten by animals, which discard the seeds. Some fruits, such as burrs, are carried by sticking to animal fur.
29. M
30. M
31. D
32. M
33. D
34. D
35. Answers will vary. Sample answer: A field mouse uses flowering plants directly as food when it eats seeds and berries. An owl uses flowering plants indirectly as food when it eats a field mouse.
36. Answers will vary. Sample answer: major food crops, such as corn, wheat, and rice; as building materials; to make clothing and rope; to make medicines, rubber, and perfume oils

SECTION: STRUCTURES OF SEED PLANTS

1. B
2. C
3. underground
4. Answers will vary. Sample answer: They supply plants with water and minerals from the soil. They hold plants in the soil. They store surplus food.
5. F
6. H
7. E
8. C
9. G
10. B
11. D
12. A
13. A
14. C
15. A
16. B
17. Answers will vary. Sample answers: clovers, poppies, buttercups, beans, tomatoes, corn
18. Answers will vary. Sample answer: A growth ring is a ring of dark cells, formed by small xylem cells produced in fall, surrounding lighter cells, formed by larger xylem cells produced in spring.
19. C
20. upper epidermis, palisade layer, spongy layer, lower epidermis
21. palisade layer
22. B
23. E
24. D
25. A
26. C
27. F
28. modified leaves
29. insects
30. Answers will vary. Sample answer: Flowers are adaptations for sexual reproduction.
31. sepals
32. petals
33. stamen
34. pistil
35. ovary, ovule