

Name Key
Period _____ Date _____

STANDARD - 1 Students will explain the role of FFA in agricultural education.

1. Identify 1 major thing that happened in each year below:

- a. 1917 Smith Hughes Act
- b. 1928 FFA Established
- c. 1950 FFA Integral part of Ag Ed
- d. 1965 NFA merges with FFA
- e. 1969 Women allowed
- f. 1971 Alumni
- g. 1988 Name Change

2. FFA Mission

Premier Leadership, Personal Growth, Career Success

3. FFA Motto

Learning To Do, Doing to Learn
Earning to Live, Living to Serve



5. Match the officer to their symbol:

- Flag Reporter
- George Washington Treasurer
- Ear of Corn Secretary
- Rising Sun President
- Plow VP
- Owl Advisor
- Hand Clasp Sentinel

6. Using 1 sentence, describe the meaning of each paragraph of the FFA Creed.

Paragraph 1: Future, learning from Past

Paragraph 2: Joys & Discomforts

Paragraph 3: Ability of self & others

Paragraph 4: Self sufficiency & Service

Paragraph 5: Tradition & personal Influence

7. What is a POA?

Program of Activities

STANDARD 2- SAE

1. Describe 3 or more benefits of having a productive SAE

Money
Career Skill
Record Keeping
Awards, Degrees

2. Distinguish the differences in each of the following types of SAE's

a. Placement

Work for someone else

b. Entrepreneurship

Own your own business

c. Agriscience/Research

Science Project

d. Exploratory

Discovering Different Areas of Ag.

STANDARD 3: Major Areas of Plant Science

3. Describe how agriculture and it's advancements drove the development of civilizations through time.

All major civilizations were started around ag. Mesopotamia.

4. Determine & describe 3 major inventions that became milestones to advance plant based agriculture.

Cotton gin - Eli Whitney
Mechanical Reaper - McCormick
Plows - Steel

5. List 5 ways that plants effect your everyday life

Food, Clothing, Shelter, Food

6. Describe 5 major plant crops and list it's use

- A- Cotton, Flax, Wool - Clothing
- B- Field crops - Alfalfa, Soy beans, Wheat, Barley
- C- Vegetable - Food Crop Horticulture
- D- Ornamental Horticulture - Beauty, Comfort
- E- Forestry

1. Define the following vocabulary used in Plant Science:

- a. Ornamental Horticulture
Growing Plants for beauty
- b. Olericulture
Vegetable Crops
- c. Floriculture
Production of flowers
- d. Pomology
Production of fruit
- e. Agronomy

Field Crop Production -

STANDARD 4: Soil

2. Describe how soil is crucial to sustaining life

No soil, No Nutrients, No water,
No Food

3. List some components (ingredients) that make up soil.

Sand, Silt, Clay

Mineral Matter, Air, Water, OM

4. What is the difference between an ORGANIC soil component and an INORGANIC soil component?

Organic - once alive or living
Inorganic - Mineral

5. What are examples of ORGANIC soil components?

Leaves, worms, bugs, nematodes

13. Define soil fertility

Ability of soil to sustain plant growth

14. List the 3 MACRONUTRIENTS found in soil

NPK

15. Describe why water is considered a soil nutrient.

(How does it effect nutrient availability?)

Water transports nutrients

16. List 3 MICRONUTRIENTS found in soil

Calcium, Iron, magnesium, sulfur

20. What organic substances can be added to soil to increase it's available nutrients?

Biodegraded leaves & other dead stuff

6. What are examples of INORGANIC soil components?

minerals + rocks

7. Describe the 3 particle sizes soil is composed of

Sand, silt, clay

8. What living organisms are found in soil? What is their purpose?

Worms, bacteria
Aerate, provide available nutrients

9. Besides living organisms, what other biologic (live) activity takes place?

Breaking down dead stuff

10. Describe what Cation Exchange Capacity (CEC) in soil is

Soil's negative charge - the total number of cations soil can hold
Nutrients are positively charged

11. How can you increase the CEC in soil?

Increase OM

12. Describe how the following factors effect a soil's ability to absorb water:

a. Soil Texture

Sand - ↑ drainage

Silt - med drainage

Clay - ↓ drainage

b. Slope

Water runs off

c. Soil Temperature

↑ 80°, plants can't absorb water

d. Plant Growth

↑ growth requires ↑ water

17. What macronutrient turns leaves green?

Nitrogen

18. What macronutrient feeds the roots and encourages cell division?

Phosphorus

19. What macronutrient develops chlorophyll and increases disease resistance?

Nitrogen

21. How does the depth of topsoil affect a soil's ability to produce quality plants?

Topsoil = Nutrients

↑ Air space

22. How does slope effect the growth of plants?

Less top soil + OM + water

Plant Science Skills Test Review

STANDARD 5

Students will describe plant anatomy and physiology concepts.

1. What is binomial nomenclature & who developed it?
 Two name naming system
 Linnaeus

2. Why are scientific names of plants used instead of common names?
 Common names different in languages & cultures

5. Label the following characteristics as monocot or dicot:

- a. mono Parallel veins in leaves
- b. mono 1 cotyledon
- c. Di Netted Veins in leaves
- d. Di 2 Cotyledons on leaves



e. Di

3. What is a 'cultivar'?

A variety of a plant made by selective breeding

4. Define the following plants by their life cycle:

- a. Annual 1 year
- b. Biennial 2 years
- c. Perennial Many years



f. mono



g. Dicot

h. mono lillies, onions, corn, grass

i. Dicots trees & flowers

6. What do plant cells have that animal cells

DON'T?
 Cell wall
 chloroplast

7. What cell organelle packages and sorts proteins?

Golgi Apparatus

8. What cell organelle manufactures protein?

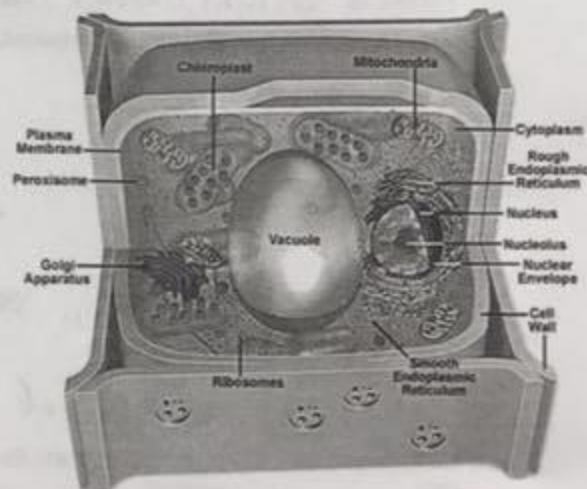
Ribosomes

9. What is the most exterior portion of the plant

cell? Cell wall

10. What organelle controls the function of the cell?

Nucleus



11. What is the difference between mitosis and meiosis?
 Mitosis produces identical new cells
 Meiosis produces sex cells

12. Where in the plant does meiosis take place?

~~Mitosis~~ Ovary & Anther

13. What is the purpose of the seed coat?

Protects seed

14. Which portion of the seed will develop into the new plant?

Embryo

15. Which portion of the root absorbs water and moisture through osmosis?

Root Hairs

16. What type of root has 1 single dominant root that tapers downward? (carrot)

Taproot

17. What type of root has NO primary root, but does have many secondary roots that spread through the soil?

Fibrous Roots

18. Define & describe the following modified stems

a. Rhizome continuous underground stem - puts out shoots, Carnas, alfalfa

b. Tuber Thick, underground stem - potato Aspen

c. Tendril Threadlike appendage - beans, morning glory

d. Bulb or Corm Underground storage organ. Tulips, gladiolus

19. What is the purpose of a leaf?

Absorb sunlight, Convert into energy

20. Label the following leaves as simple, compound, or whorled



Compound



Simple



Whorled

21. What is a petiole?

Stalk that attaches leaf to stem

22. Label the parts of a flower on the diagram to the right

23. What is the difference between a complete flower and an incomplete flower?

Complete - All 4 parts: ~~Complete - Both male + female~~

24. What is the difference between a perfect flower and an imperfect flower?

Perfect - Both male + female parts on flower

Sepal, petal
Stamen, Pistil

25. List 3 functions that water plays in plant growth

Nutrient uptake, Photosynthesis, Turgor pressure

26. What symptoms does an OVERwatered plant show?

Small/No roots/rotted, Slow grow, discolored

27. What symptoms does an UNDERwatered plant show?

Wilting, yellowing, death

28. What is the difference between light color and light intensity?

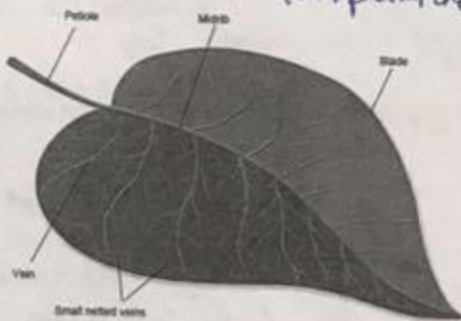
29. Define or describe what a "photoperiodic" plant is.

Responds to light - Pansettias

30. What is the difference between a "short day" plant and a "long day" plant?

31. What is the definition of "thermoperiod"?

Period of exposure to a certain temperature



32. What does the word "vernalization" describe in plant science?

Cooling of seeds during germination to accelerate flowering

33. The United States is divided into 13 areas called Köppen's. These zones use average

minimum and maximum temperatures to determine what plants can grow there.

34. The temperature of different seasons provides a different stage of growth and development for a plant. Describe them:

- a. Spring Planting, beginning growth
- b. Summer Blowing
- c. Fall die
- d. Winter Dormancy

35. In extreme heat, what do plants do to regulate temperature?

Close their stomata
Evaporation (transpiration)

36. What effect do diseases and/or insects have on a growing plant?

Stunt growth, death, etc.
Inability to compete

37. What is IPM? Describe it.

Integrated Pest Management. Pest management
Program - manage, not eradicate.

38. Label the following as a pest or disease:

- a. P Aphids
- b. P Fungus Gnat
- c. P Leaf Miner
- d. P Mealy Bug
- e. P Spider Mite
- f. D Mosaic Virus
- g. D Black Spot
- h. D Botrytis
- i. P Iron Chlorosis
- j. P Scale

39. What purpose does photosynthesis have to a plant?

Produces sugars

40. How does photosynthesis effect our environment?

Produces oxygen

41. Where does a plant get its energy?

The sun

42. What does a plant take IN to conduct

photosynthesis? CO₂, water, sunlight

43. What is a byproduct of photosynthesis?

O₂, C₆H₁₂O₆

44. What is the difference between respiration and photosynthesis?

They are opposite of each other. One makes sugar, the other uses it for energy

45. What is the difference between sexual and asexual plant reproduction?

1 organism - offspring clone
2 organisms

46. What are 3 methods of asexual plant reproduction?

Cuttings, Division, grafting, layering

47. What is the primary method of sexual plant reproduction?

Pollination

48. During pollination, pollen transfers from the

Anther to the Stigma of the flower.

49. What's the difference between cross-pollination and self-pollination?

from same plant from another plant

50. If a flower is NOT pollinated, what is the result on a plant used for a food crop?

Does not produce food/fruit

51. Review the fertilization process

52. A seed can be stored for years. What environmental conditions trigger a seed to germinate?

Moisture, warmth, light

53. Use the diagram below to describe each step of seed germination.

54. Draw the process of the following methods of asexual propagation:

- a. Cuttings:
- b. Division
- c. Separation
- d. Layering

55. What is the purpose of grafting?

56. List & describe 3 methods of grafting (look at Plant Propagation Unit Notes)

- c. Bark graft
- f. Side Veneer graft
- e. Splice graft
- Bridge graft
- Inch graft

57. What are the 2 locations of the apical meristem?

Tips of shoot + root

58. What role do they play in plant growth?

Actively dividing cells

STANDARD 6

Students will explain principles of horticulture.

1. What are 3 benefits of growing your own vegetable/herb garden?

Reduced pesticide use
Save money, Increase physical activity

2. List 3 fruits that grow on trees

Apples, oranges, peaches

3. List 3 vine fruits

Grapes, watermelon, kiwi, honeydew

4. List 3 examples of oil crops

Soybean, flax, mustard, hemp, coconut

5. List 3 examples of small grain products

Barley, rice, wheat,

6. Are oil and small grain crops used for human consumption or animal feed?

Both

7. What are some common forage plants used to produce hay?

Alfalfa, corn, Sorghum, grass

8. How does the production of hay and forage effect our human food system?

Animals eat hay, we eat animals

9. Describe the purpose of the following lawn maintenance procedures:

- a. Fertilizing: Mainly Nitrogen, keeps it green.
- b. Weed Control: Use Dicot herbicides. Keeps non-grass out.
- c. Aerating: Allows more air to get to roots.

10. Using your knowledge of plants, list 3 principles you should consider and follow when planning a flower garden.

Shade, Growth Patterns, Water + Nutrient Requirements

11. What benefit do homeowners have when their yard is landscaped?

12. List 3 things that you should consider when designing a residential landscape.

Slopes
Recreational Areas
Climate
Existing Trees + Structures
Irrigation