Grade 7 Science

Texas Assessment Review and Practice

Includes

- Review and Practice for Grade 7 TEKS
- TEKS practice items in 4 reporting categories
  - Matter and Energy
  - Forces, Motion and Energy
  - Earth and Space
  - Organisms and Environment
  - *plus* Scientific Investigation and Reasoning Skills
- TEKS Practice Test A and Practice Test B

SAMPLER

Contents

Name_____ Date_____

7.11.A

(11) **Organisms and environments.** The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to: (A) examine organisms or their structures such as insects or leaves and use dichotomous keys for identification;

(2) **Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to: (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

STANDARD REVIEW

Taxonomists have developed special guides to help scientists identify organisms. A dichotomous key is an identification aid that uses sequential pairs of descriptive statements. From each pair of statements, the person trying to identify the organism chooses the statement that describes the organism. Either the chosen statement identifies the organism, or the person is directed to another pair of statements. By working through the statements in the key in order, the person can eventually identify the organism. The following chart is an example of a simple dichotomous key.

Dichotomous Key to 10 Common Mammals in the Eastern United States

1. a. This mammal flies. Its "hand" forms a wing. b. This mammal does not fly. Its "hand" does not form a wing.	little brown bat Go to step 2.
2. a. This mammal has no hair on its tail. b. This mammal has hair on its tail.	Go to step 3. Go to step 4.
3. a. This mammal has a short, naked tail. b. This mammal has a long, naked tail.	eastern mole Go to step 5.
4. a. This mammal has a black mask across its face. b. This mammal does not have a black mask across its face.	raccoon Go to step 6.
5. a. This mammal has a tail that is flat and paddle shaped. b. This mammal has a tail that is not flat or paddle shaped.	beaver opossum
6. a. This mammal is brown and has a white underbelly. b. This mammal is not brown and does not have a white underbelly.	Go to step 7. Go to step 8.
7. a. This mammal has a long, furry tail that is black on the tip. b. This mammal has a long tail that has little fur.	longtail weasel white-footed mouse
8. a. This mammal is black and has a narrow white stripe on its forehead and broad white stripes on its back. b. This mammal is not black and does not have white stripes.	striped skunk Go to step 9.
9. a. This mammal has long ears and a short, cottony tail. b. This mammal has short ears and a medium-length tail.	eastern cottontail woodchuck

Name_____ Date_____

7.11.A

STANDARD PRACTICE

1 According to the dichotomous key on the previous page, what is a flightless mammal that has a long, furry tail with a black tip, a white underbelly, and light brown fur?

A Beaver

B Eastern mole

C Longtail weasel

D Opossum

The Four Main Groups of Living Plants

Nonvascular	Vascular	
	No seeds	Seeds
		Nonflowering / Flowering
		 
Mosses, liverworts, and hornworts	Ferns, horsetails, and club mosses	Gymnosperms / Angiosperms

2 What group does a vascular plant with seeds belong to?

F Angiosperms only

G Gymnosperms or angiosperms

H Gymnosperms only

J Ferns, horsetails, and club mosses

Name_____ Date_____

7.11.A

Characteristics of Cnidarians	Characteristics of Flatworms
Radial symmetry	Bilateral symmetry
Use stinging cells to catch food	Use eyespots to sense direction
Have a nervous system	Have a nervous system
Have a gut for digesting food	Have a gut for digesting food

3 According to the table above, what characteristic do flatworms have that makes them different from cnidarians?

A Nervous system

B Gut

C Stinging cells

D Bilateral symmetry

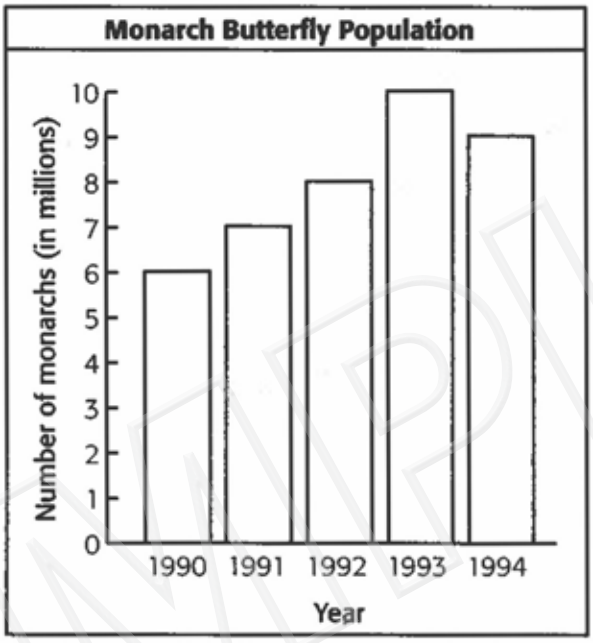
A Dichotomous Key to Common Trees of the Northern United States

1. a. Leaves are thin and needlelike (coniferous) b. Leaves are broad and fanlike (deciduous)	Go to 2 Go to 6
2. a. Needles are over 2.5 cm long and are clustered b. Needles are 1.25 cm long or less.	Go to 3. Go to 4.
3. a. Needles occur in clusters of 3 b. Needles occur in clusters of 5	Pitch pine (*Pinus rigida*) Eastern white pine (*Pinus strobus*)

4 Students using the dichotomous key above notice that one tree has thin 1.2 cm needles that occur in clusters. The students use the key to determine that the tree is a pitch pine. How many clusters must the needles have occurred in?

Name_____ Date_____

SI.2.E



3 Examine the graph above. What evidence supports the conclusion that the monarch butterfly population is increasing?

A The number of butterflies increases every year from 1990 to 1993.

B The number of butterflies increases every year from 1990 to 1994.

C The number of butterflies decreases between the years 1992 and 1993.

D The number of butterflies decreases between the years 1993 and 1994.

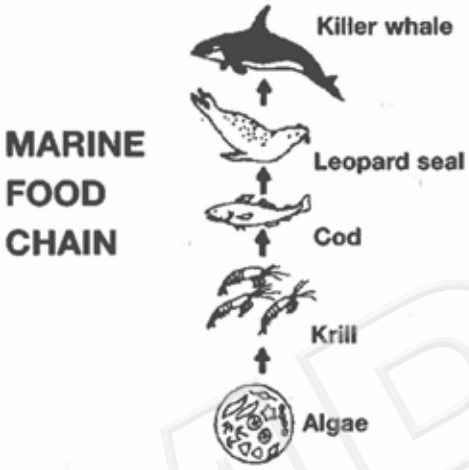
Wildflower Research Results

Field	Average number of flowers (per 10 m^2)	Number of species	Species currently flowering
1	51	12	9
2	17	11	7
3	22	22	20

4 What percentage of the total number of species in Field 1 are currently flowering?

Name_____ Date_____

PRACTICE TEST A



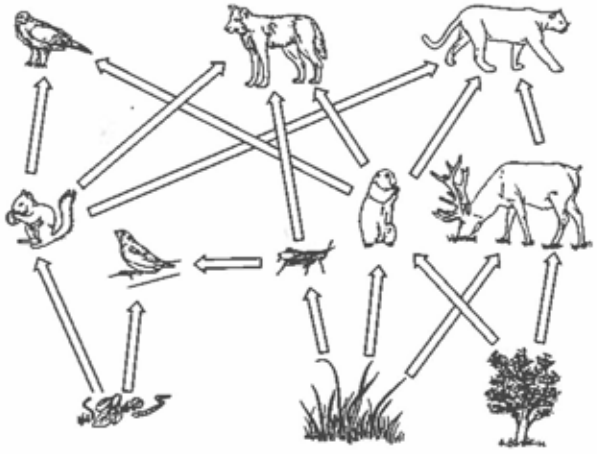
1 The marine food chain shown in the diagram above consists of algae, krill, cod, leopard seals, and killer whales. Which organism is a primary consumer in this food chain?

A Algae

B Krill

C Cod

D Leopard seal



2 What does the arrow between the grasshopper and the coyote represent?

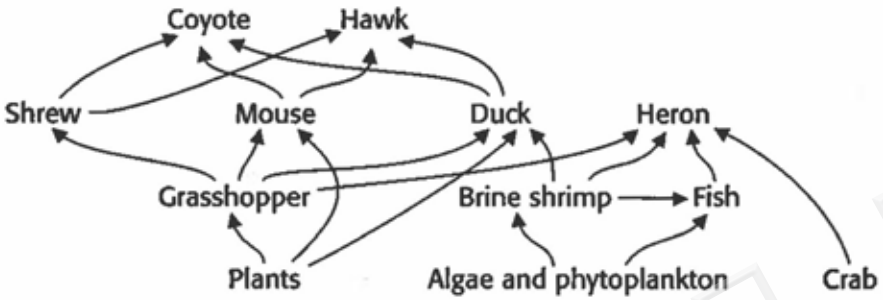
F Energy flowing from producers to consumers

G Energy flowing from consumers to producers

H Energy flowing from the coyote to the grasshopper

J Energy flowing from the grasshopper to the coyote

Name_____ Date_____



12 What is the purpose of a food web diagram as shown above?

F To show the interaction between different ecosystems in the biosphere

G To show how much energy is lost from one feeding level to the next in an ecosystem

H To show how much energy is gained from one feeding level to the next in an ecosystem

J To show the feeding relationships between organisms in an ecosystem

13 How do multicellular organisms benefit from having many different types of cells that are specialized for different functions?

A It allows them to perform more functions than unicellular organisms.

B It allows them to pass genetic material from parent cells to new cells.

C It allows them to move from place to place.

D It allows them to carry out life functions.

14 Cell structures are important for the cell function. What can you infer about cells with cell walls?

F They are unicellular organisms.

G The cell walls help support the cell and the organism.

H They obtain their nutrition by engulfing other organisms.

J Cytokinesis occurs by pinching off to make two new cells.