

Q1: KNOWLEDGE AND UNDERSTANDING

A. Fill in the blanks by choosing the words from the box below:

Spore, xylem, phloem, photosynthesis, pollen, pollination embryo, Energy pyramid, population, habitat, niche, community, cycle, ecosystem, pesticides, inherit, mutation, extinct.

1. The process that plants use to make food is _____.
2. In asexual reproduction _____ is the cell that can grow into new plant.
3. The process of moving _____ from a stamen to a pistil is _____.
4. A tiny plant inside the seed is called _____.
5. _____ tissues carry sugar from leaves to other parts of plants.
6. _____ tissues carry water and minerals from roots to other parts of plants.
7. A _____ is one way of showing the amount of energy available at each stage of the food chain.
8. The role each organism has in an ecosystem is called _____.
9. The place in an ecosystem where organisms usually live is its _____.
10. Materials often repeat a pattern or _____ as they move through different parts of an ecosystem.
11. All the populations of the organisms in a _____ belong to different species but live in the same area.

12. A _____ is the combination of living and nonliving things and their interactions.
13. A group of organisms of the same species living in one area is called _____.
14. A _____ is the chemical that kills harmful insects.
15. A _____ is a change in organism's genes.
16. When the last animal of the species dies, the species becomes _____.
17. Offspring _____ genes from their parents.

B. Choose the answer by circling the letter.

1. Two types of plant reproduction are:
 - a. respiration and photosynthesis
 - b. sexual and asexual
 - c. chloroplasts and cell walls
 - d. DNA and environment.
2. How does chlorophyll help plants?
 - a. It absorbs light energy in photosynthesis.
 - b. It moves water and minerals through plants.
 - c. It moves sugar and water through plants.
 - d. It absorbs water.
3. Which biome can be best described as an evergreen forest in a cold, dry location?
 - a. Taiga
 - b. Tundra
 - c. Tropical rain forest
 - d. Grassland

4. Which of the following is behavioral adaptation?
- a. A humming's bird strong wings.
 - b. The way bees work together.
 - c. A frog's green slimy skin.
 - d. The long beak of humming bird.
5. Which of the following is a structural adaptation?
- a. A female lion teaches its cubs how to hunt.
 - b. A group of bees that work together.
 - c. A hummingbird has legs that tuck close to the body.
 - d. A flamingo's feathers turn pink after eating crustaceans.
6. Which of the following is the source of much of the oxygen in the atmosphere?
- a. Plants
 - b. Volcanoes
 - c. human
 - d. plankton in the oceans
7. What kind of organism helps clean a habitat of dead and waste remains?
- a. Carnivore
 - b. Omnivore
 - c. Decomposer
 - d. herbivore
8. Which adaptation best helps elk survive in the taiga biome?
- a. thick fur
 - b. large antlers
 - c. change of color
 - d. winter hibernation



9. How much of Dog's genes were inherited from its father.
- a. $\frac{1}{4}$
 - b. $\frac{1}{2}$
 - c. $\frac{3}{4}$
 - d. $\frac{1}{3}$
10. Creatures that live in the deep ocean need to adapt to which environmental factor?
- a. lack of food
 - b. high pressure
 - c. low levels of salt
 - d. high temperatures
11. How do carnivores obtain energy?
- a. They eat plants.
 - b. They eat animals.
 - c. They eat animals and plants.
 - d. They eat the food they make.
12. Two types of the root systems are tap root and _____ root.
- a. mineral
 - b. seed
 - c. DNA
 - d. fibrous

Q2: COMPREHENSION.

a. How do plants make sugar? Explain it by writing an equation of the process.

b. Look at the diagram of a Kangaroo. Compare its Habitat and Niche.

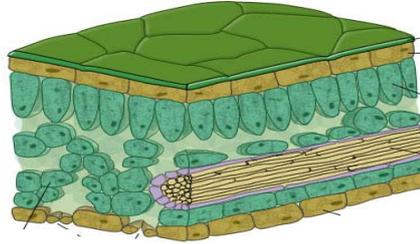


Habitat of a Kangaroo	Niche of a Kangaroo

C. i) Identify two living and two nonliving parts of an ecosystem.

ii) Then explain how the nonliving parts impact (affect) the different kinds of organisms that live in the ecosystem?

D. Match the following parts of the plants with the best suited phrase.



1.	Stomata	
2.	Epidermis	
3.	xylem	
4.	phloem	

A.	Can be compared to skin. (give protection)
B.	Carry water and minerals
C.	Carry sugar
D.	Allows exchange of gases and water

E. What causes bark to form on a tree?

F. Differentiate between sexual and asexual reproduction. Give example of each type of reproduction.

Asexual reproduction	Sexual reproduction
1.	1.
Example:	Example:

G. A desert community has eagles, mouse, insect and grasses. Predict what would happen to the population of grasses in this desert if the population of eagles increased?

H. What is the difference between Taiga and Tundra biomes?

Taiga	Tundra

I. Which biome is home to more species than any other biome and why?

J. How did the bald eagle become endangered?

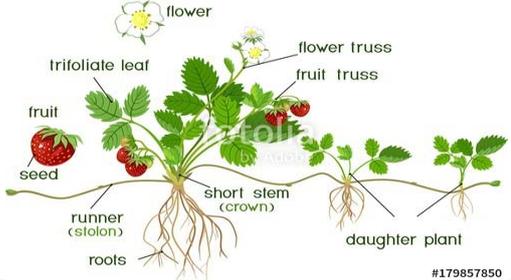
Q3: APPLICATION.

- a. Explain how changes in an ecosystem sometimes be helpful and sometimes harmful? Give two examples of each type of change.

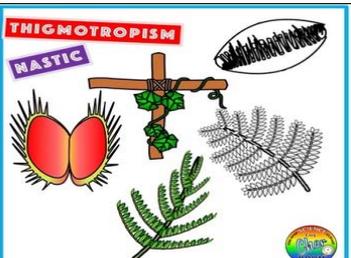
Helpful changes: i) ii)
Harmful changes: i) ii)

- b. Fill in the missing causes and effects.

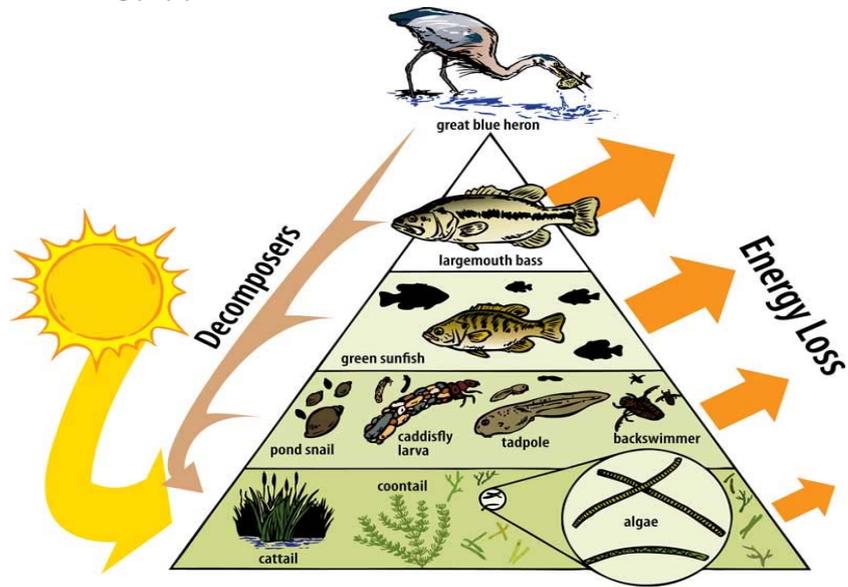
Cause (why it happened)	Effect (what happened)
DDT is sprayed on mosquitoes 	
	Dodo birds become extinct  <small>shutterstock.com • 69727252</small>

	<p>Plants are the same type and color as their parents.</p> 
<p>Plants use oxygen in the process called respiration.</p>	

c. Identify three types of Tropism by looking at the diagrams below. Then explain each type.

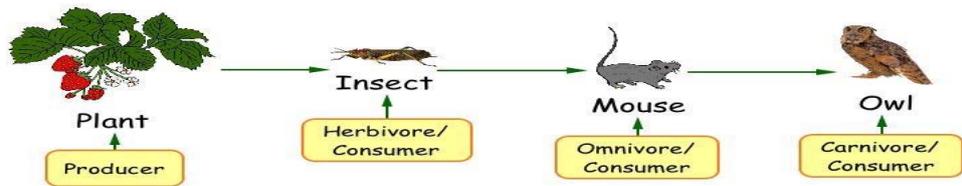
<p>Diagram</p>			
<p>Type:</p>			
<p>Explain:</p>			

d. What does energy pyramid show?



e. What does food chain show?

The Food Chain Of An Owl



A food chain shows the path of energy from one living thing to another. Decomposers like bacteria, are necessary for all food chains.

f. How food chain and food pyramid are the same and how they are different?

Food chain	Same	Food pyramid

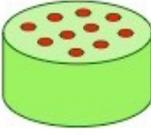
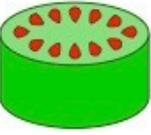
Q4: ANALYSIS

a. i) Describe structural adaptations that help the hare avoid its predators.



i) Include how its color helps the hare survive?

b. Use table below as a reference of Monocot and Dicot plant's features:

	Seed	Root	Vascular	Leaf	Flower
Monocot					
	One cotyledon	Fibrous roots	Scattered	Parallel veins	Multiples of 3
Dicot					
	Two cotyledon	Tap roots	Ringed	Net-like veins	4 or 5

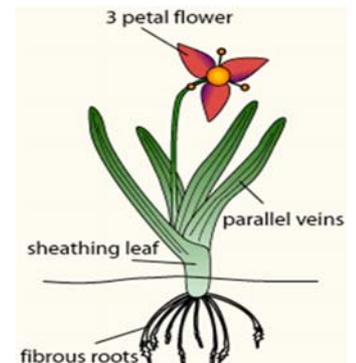
i) Classify the plant on the right side as monocot or dicot.

ii) Give two reasons for your classification.

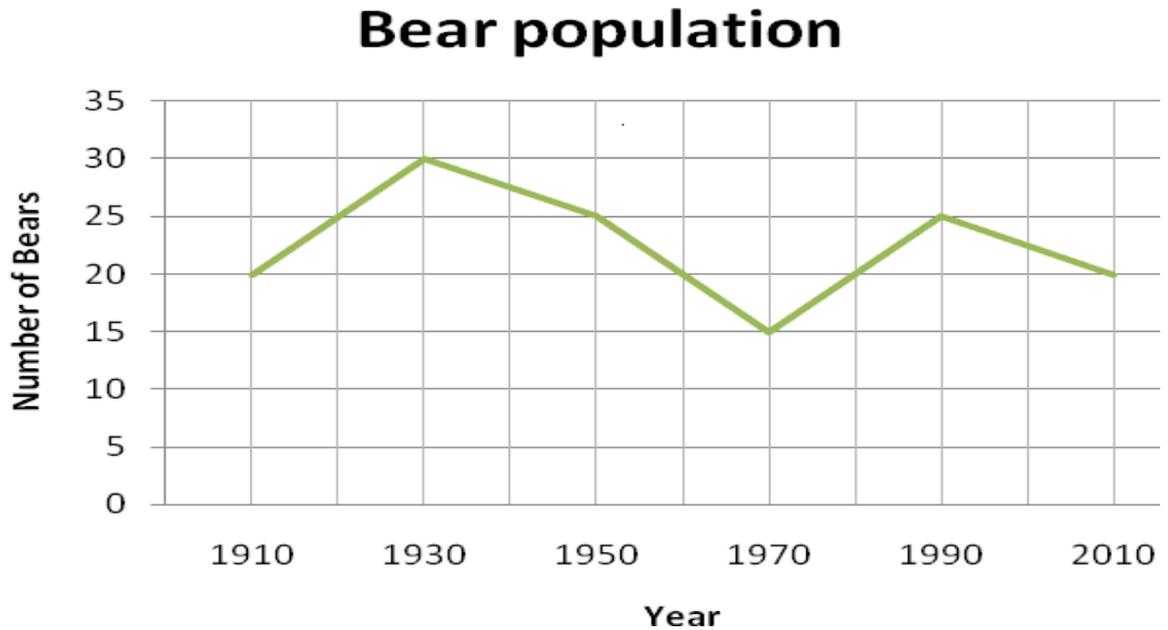


iii) Classify the plant on the right side as monocot or dicot.

iv) Give two reasons for your classification.



- c. The graph below shows the population of bears in a city zoo. Study the line graph and answer the following questions.



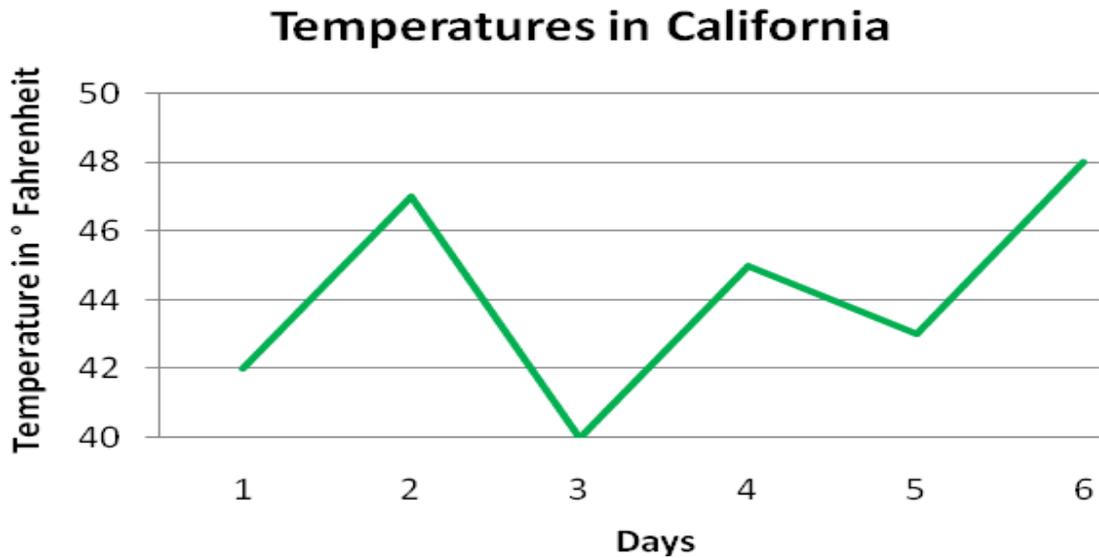
- i) Did the bear population increase or decrease between 1930 and 1970?

- ii) Did the bear population increase or decrease between 1910 and 1930?

- iii) In which year were the numbers of bears 15?

- iv) In which year was the population of bears the greatest?

- d. The graph below shows daily temperatures for California, recorded for 6 days, in degrees Fahrenheit. Study the line graph and answer the following questions.



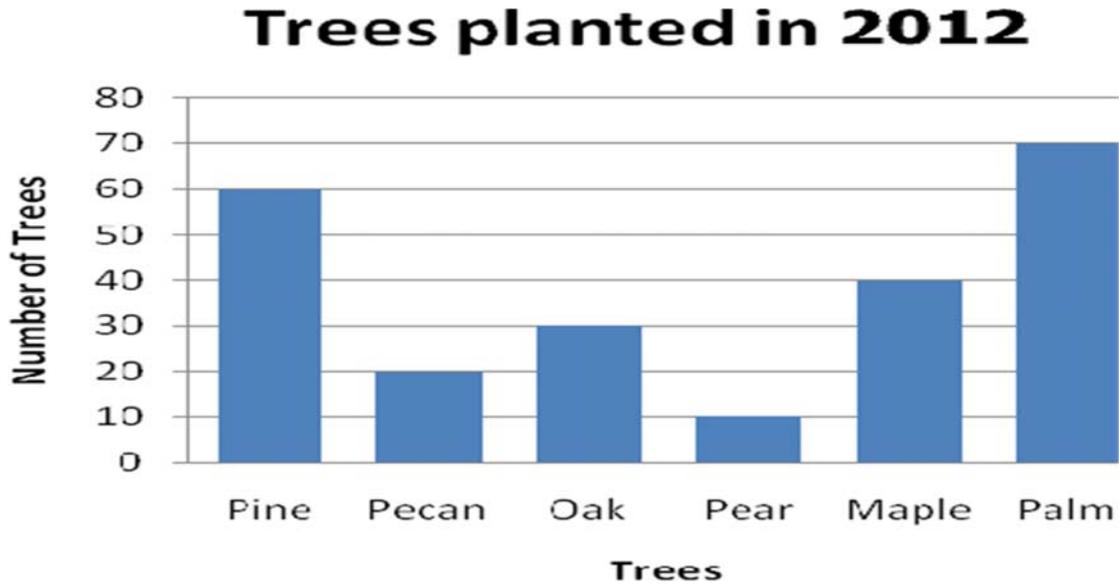
- i) On which day was the lowest temperature recorded?

- ii) What was the highest temperature recorded?

- iii) What was the temperature recorded on day 4?

- iv) Was the temperature lower or higher on day 4 than day 2?

- e. The bar graph below shows the number of different types of trees planted in a city in year 2012. Study the bar graph and answer the following questions.



- i) How many trees were planted in the city altogether in 2012?

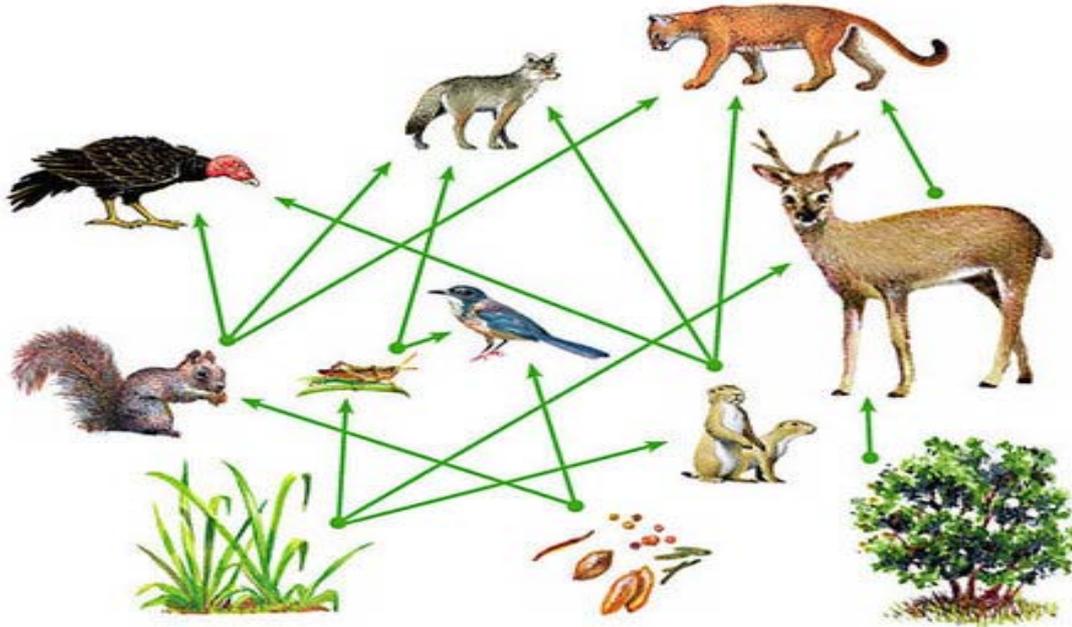
- ii) How many more Maple trees were planted than Oak trees?

- iii) How many Pear trees were planted?

- iv) How many less Pecan trees were planted than Oak trees?

Q5: SYNTHESIS/EVALUATION

1. Look at the food web below.



i) Identify three different food chains.

Food chain 1:
Food chain 2:
Food chain 3:

ii) In each of the chains, label each consumer as an herbivore, carnivore, or omnivore.

Food chain 1: Herbivore: _____, Carnivore or omnivore: _____
Food chain 2: Herbivore: _____, Carnivore or omnivore: _____

Food chain 3:

Herbivore: _____,

Carnivore or omnivore: _____

- iii) What role decomposers play in ecosystem? Explain by looking at the food web.

-----END OF REVISION SHEET----

ANSWER KEY

Q1: KNOWLEDGE AND UNDERSTANDING

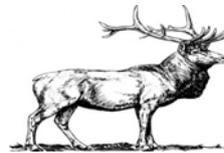
a. Fill in the blanks by choosing the words from the box below:

1. Photosynthesis.
2. Spore.
3. Pollen, pollination.
4. Embryo.
5. Phloem.
6. Xylem.
7. Energy pyramid.
8. Niche.
9. Habitat.
10. Cycle.
11. Community.
12. Ecosystem.
13. Population.
14. Pesticides.
15. Mutation.
16. Extinct.
17. Inherit.

b. Choose the best answer by circling the letter.

1. Two types of plant reproduction are:
 - a. respiration and photosynthesis
 - b. sexual and asexual**
 - c. chloroplasts and cell walls
 - d. DNA and environment.
2. How does chlorophyll help plants?
 - a. It absorbs light energy in photosynthesis.**
 - b. It moves water and minerals through plants.
 - c. It moves sugar and water through plants.
 - d. It absorbs water.

3. Which biome can be best described as an evergreen forest in a cold, dry location?
- a. **Taiga**
 - b. Tundra
 - c. Tropical rain forest
 - d. Grassland
4. Which of the following is behavioral adaptation?
- a. A hummingbird's strong wings.
 - b. **The way bees work together.**
 - c. A frog's green slimy skin.
 - d. The long beak of a hummingbird.
5. Which of the following is a structural adaptation?
- a. A female lion teaches its cubs how to hunt.
 - b. A group of bees that work together.
 - c. A hummingbird has legs that tuck close to the body.
 - d. **A flamingo's feathers turn pink after eating crustaceans.**
6. Which of the following is the source of much of the oxygen in the atmosphere?
- a. **Plants**
 - b. Volcanoes
 - c. human
 - d. plankton in the oceans
7. What kind of organism helps clean a habitat of dead and waste remains?
- a. Carnivore
 - b. Omnivore
 - c. **Decomposer**
 - d. herbivore
8. Which adaptation best helps elk survive in the taiga biome?
- a. **thick fur**
 - b. large antlers
 - c. change of color
 - d. winter hibernation
9. How much of a dog's genes were inherited from its father.
- a. $\frac{1}{4}$
 - b. **$\frac{1}{2}$**
 - c. $\frac{3}{4}$
 - d. $\frac{1}{3}$



10. Creatures that live in the deep ocean need to adapt to which environmental factor?
- lack of food
 - high pressure**
 - low levels of salt
 - high temperatures
11. How do carnivores obtain energy?
- They eat plants.
 - They eat animals.**
 - They eat animals and plants.
 - They eat the food they make.
12. Two types of the root systems are tap root and _____ root.
- mineral
 - seed
 - DNA
 - fibrous**

Q2: COMPREHENSION.

a. How plants make sugar? Explain it by writing an equation of the process.

Answer: Plants make sugar by photosynthesis. This is the process of making sugar, which cells use as an energy source from sunlight energy, water and carbon dioxide. Only plant cells can do this, and the special organelle in the plant cells that can do through this process is called a chloroplast.

Equation:

Carbon dioxide + water + light energy → sugar + oxygen

b. Look at the diagram of a Kangaroo. Compare its Habitat and Niche.

Habitat of a Kangaroo	Niche of a Kangaroo
live in varied habitats, from forests and woodland areas to grassy plains and savannas.	Kangaroo teeth are particularly adapted to their diet of tough grasses.

c. i) Identify **two living** and **two nonliving** parts of an ecosystem.

Answer: Living things: plants, animals.

Non livings: things: air, water, sand, sunlight, soil, rocks

ii) Then explain how the nonliving parts impact (affect) the different kinds of organisms that live in the ecosystem?

Answer: Abiotic factors include water, sunlight, oxygen, soil and temperature. ... All living organisms need water, oxygen to live. Plants need sunlight to do photosynthesis.

d. Match the following parts of the plants with the best suited phrase.

1.	Stomata	2.	Can be compared to skin. (give protection)
2.	Epidermis	3.	Carry water and minerals
3.	xylem	4.	Carry sugar
4.	phloem	1.	Allows exchange of gases and water

e. What causes bark to form on a tree?

Ans: When new phloem cells form and grow, they push old, dead phloem outward. This dead phloem makes up bark.

f. Differentiate between sexual and asexual reproduction. Give example of each type of reproduction.

Asexual reproduction	Sexual reproduction
1. One parent is required of producing offspring.	1. Two parents are required of producing offspring.
Example: budding, runners, by spores.	Example: flowering plants or seed producing plants.

g. A desert community has eagles, mouse, insect and grasses. Predict what would happen to the population of grasses in this desert if the population of eagles increased?

Ans: I predict that grasses population will decrease.

More eagles will hunt more mouse that will let insect's population to increase which will eat more grasses making their population decrease.

h. What is the difference between Taiga and Tundra biomes?

Taiga	Tundra
<p><u>The taiga is located near the top of the world, just below the tundra biome.</u> <u>A lot of coniferous trees (pine trees) grow in the taiga.</u></p> <p><u>Animals present: elk, wolves, bears.</u></p>	<p><u>The tundra has a layer of permafrost (frozen land). It has really poor vegetation with no trees. Only small grasses are present.</u></p> <p><u>Animals present: owls, foxes, weasels.</u></p>

i. Which biome is home to more species than any other biome and why?

Ans: Tropical rain forest has more species than all other land biomes because of more rainfall. In places like this, many plants have their needs met. As a result, population of plants and other species increases.

j. How did the bald eagle become endangered?

Ans: The eagle did not adapt to the pesticide in its ecosystem. The eagle population kept getting smaller because fewer offspring hatched.

Q3: APPLICATION.

a. Explain how changes in an ecosystem sometimes be helpful and sometimes harmful? Give two examples of each type of change.

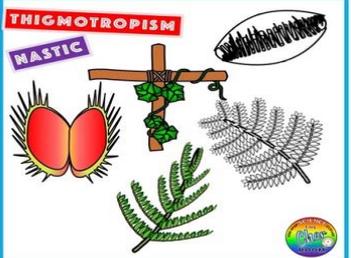
<p>Helpful changes:</p> <p>i) Earthworms dig holes in the soil, bringing oxygen to plant roots.</p> <p>ii) Beaver make ponds that is new home and safe for them.</p>
<p>Harmful changes:</p> <p>i) Plants and animals can die from acid rain.</p> <p>ii) Open landfills can harm ecosystem by polluting it.</p>

b. Fill in the missing causes and effects.

Cause (why it happened)	Effect (what happened)
<p>DDT is sprayed on mosquitoes</p> 	<p><u>Some mosquitoes will die, some will adapt to pesticides.</u></p>

<p><u>The sailors change Dodo's ecosystem by bringing rats, pigs and monkeys on the island. The flightless bird (Dodo) couldn't fly to safer place.</u></p>	<p>Dodo birds become extinct</p> 
<p><u>Asexual reproduction produces the same offspring like their parents.</u></p>	<p>Plants are the same type and color as their parents.</p> 
<p>Plants use oxygen in the process called respiration.</p>	<p><u>At night plant uses oxygen and release carbon dioxide during respiration process.</u></p>

c. Identify three types of Tropism by looking at the diagrams below. Then explain each type.

<p>Diagram</p>			
<p>Type:</p>	<p><u>Gravitropism</u></p>	<p><u>Thigmotropism</u></p>	<p><u>Phototropism</u></p>
<p>Explain:</p>	<p><u>It is the growth of the part of plant because of the pull of gravity.</u></p>	<p><u>It is a plant's response to touching an object.</u></p>	<p><u>It's the plant's reaction to a source of light.</u></p>

d. What does energy pyramid shows?

Ans: Energy pyramid shows the amount of energy that flow through each level of food chain.

e. What does food chain shows?

Ans: A food chain shows the path of energy from any living thing to another.

f. How food chain and food pyramid are the same and how they are different?

Food chain	Same	Food pyramid
<u>A food chain shows the path of energy from any living thing to another.</u>	<u>Both are related with energy</u>	<u>Energy pyramid shows the amount of energy that flow through each level of food chain.</u>

Q4: ANALYSIS

a. i) Describe structural adaptations that help the hare avoid its predator.

Ans: Long and strong legs to run.
Long and sensitive ears to hear.

ii) Include how its color helps the hare survive?

Ans: Hare color helps it to survive as it camouflage with its environment.

b. Use table below as a reference of Monocot and Dicot plant's features:

i) Classify the plant on the right side as monocot or dicot.

Ans: Dicot

ii) Give two reasons for your classification.

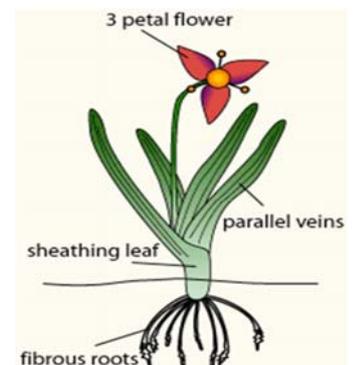
Ans: Net like veins in leaf, tap root, and flower having multiple of 5 petals.

iii) Classify the plant on the right side as monocot or dicot.

Ans: Monocot.

iv) Give two reasons for your classification.

Ans: Parallel veins in leaf, fibrous root, and flower is multiple of 3

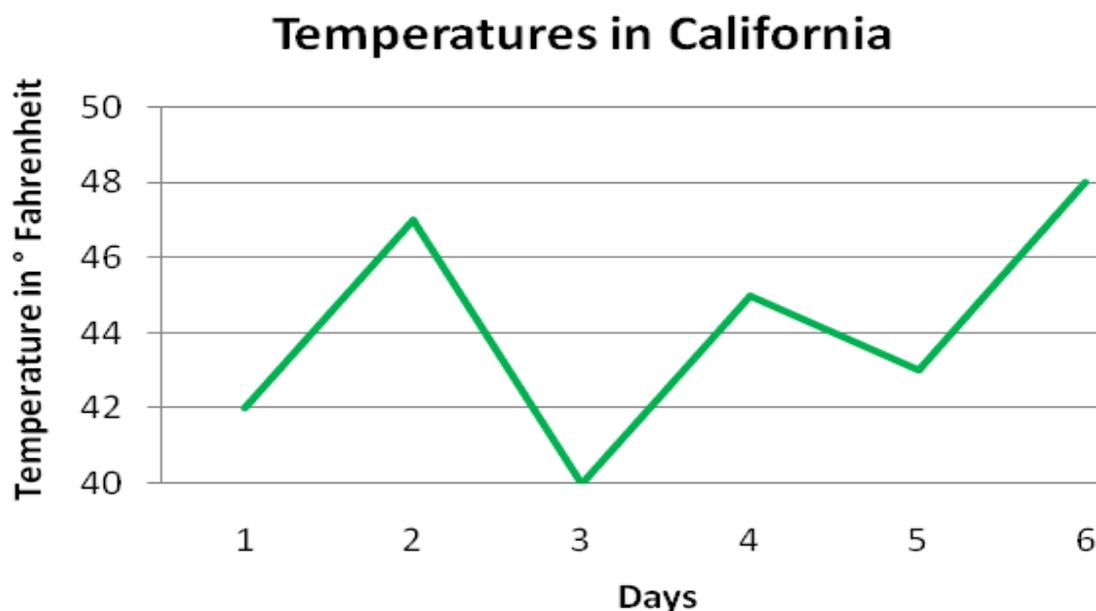


C. The graph below shows the population of bears in a city zoo. Study the line graph and answer the following questions.



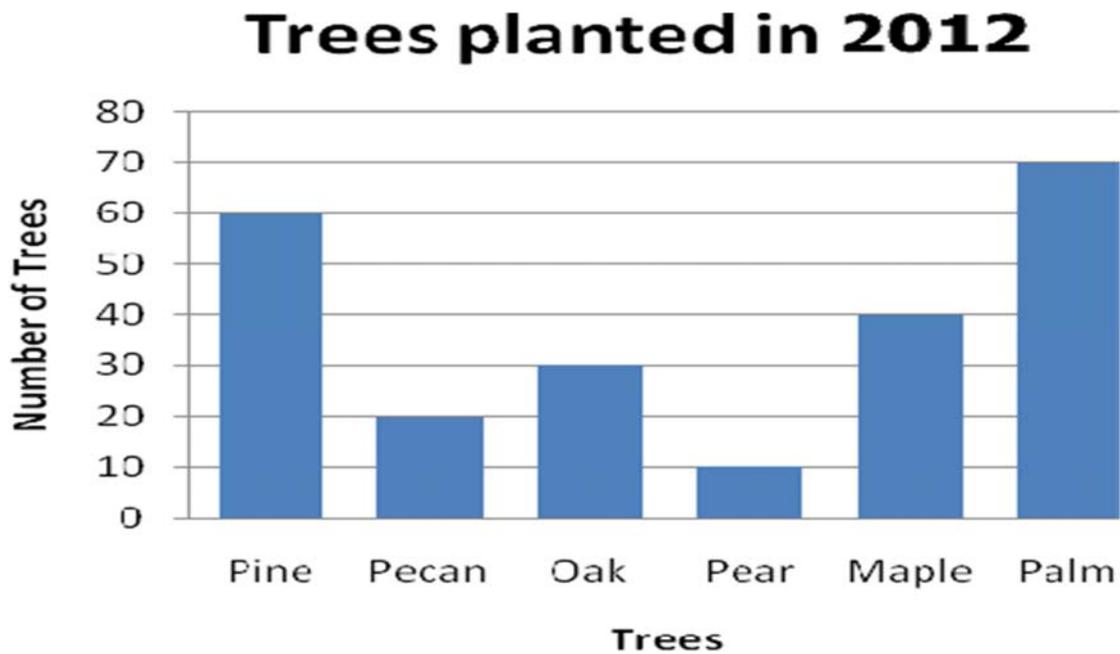
- i) Did the bear population increase or decrease between 1930 and 1970?
Ans: Decreases.
- ii) Did the bear population increase or decrease between 1910 and 1930?
Ans: Increases.
- iii) In which year were the numbers of bears 15?
Ans: 1970
- iv) In which year was the population of bears the greatest?
Ans: 1930

- d. The graph below shows daily temperatures for California, recorded for 6 days, in degrees Fahrenheit. Study the line graph and answer the following questions.



- i) On which day was the lowest temperature recorded?
 Ans: Day 3
- ii) What was the highest temperature recorded?
 Ans: 48 degree Fahrenheit.
- iii) What was the temperature recorded on day 4?
 Ans: 45 degree Fahrenheit.
- iv) Was the temperature lower or higher on day 4 than day 2?
 Ans: It was lower

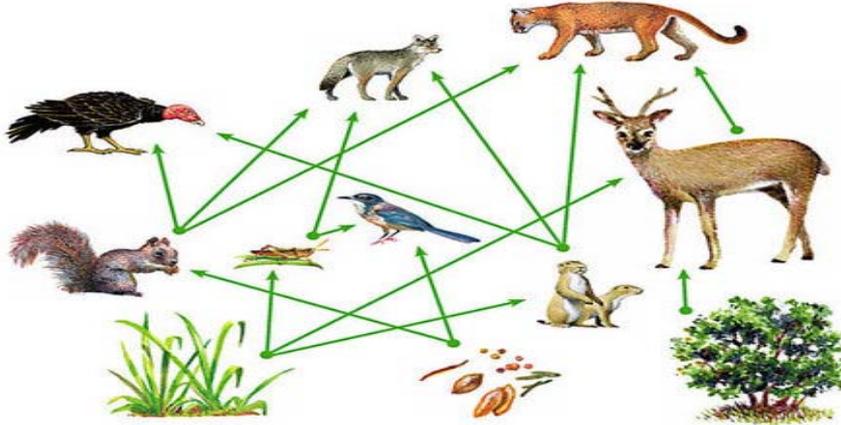
- e. The bar graph below shows the number of different types of trees planted in a city in year 2012. Study the bar graph and answer the following questions.



- i) How many trees were planted in the city altogether in 2012?
Ans: 60+20+30+10+40+70 = 230 trees
- ii) How many more Maple trees were planted than Oak trees?
Ans: 10 trees
- iii) How many Pear trees were planted?
Ans: 10 trees
- iv) How many less Pecan trees were planted than Oak trees?
Ans: 10 trees

Q5: SYNTHESIS/EVALUATION

1. Look at the food web below.



iv) Identify three different food chains.

Food chain 1: grass → grass hopper → fox
Food chain 2: Grass → deer → wild cat
Food chain 3: Grass → prairie dog → fox

v) In each of the chains, label each consumer as an herbivore, carnivore, or omnivore.

<p>Food chain 1: Herbivore: grass hopper Carnivore or omnivore: fox</p>
<p>Food chain 2: Herbivore: deer Carnivore or omnivore: wild cat</p>
<p>Food chain 3: Herbivore: prairie dog Carnivore or omnivore: fox</p>

vi) What role decomposers play in ecosystem? Explain by looking at the food web.

Ans: Decomposers break down dead animals and plants and return vital nutrients to the soil.