

Life Cycles and the Flow of Energy (food chains)

Field Studies Information

Next Generation Sunshine State Standards – Science

- SC.3.L. 15.1 Classify animals into major groups according to their physical characteristics and behaviors.
- SC.3.L. 15.2 Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and moss that produce spores, according to their physical characteristics.
- SC.3.L. 17.2 Recognize that plants use energy from the sun, air and water to make their own food.
- SC.4. L. 16.4 Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and non-flowering seed bearing plants.
- SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants and or other animals, the energy stored in the food source is passed to them.
- SC.4.L.17.3 Trace the flow of energy from the Sun as it is transferred along the food chain through the produces to the consumers.
- SC.4.L. 17.4 Recognize ways that plants and animals, including humans, can impact the environment
- SC.5.L. 15.1 Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.
- SC.5.L. 15.2 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycle variations, animals behaviors and physical characteristics.



*The Nature of Science standards are embedded throughout the program in 1) the STEM activities we provide, 2) the data collection, and 3) group data analysis (in classroom setting). Computer Science standards can be made by using data from the field studies program.



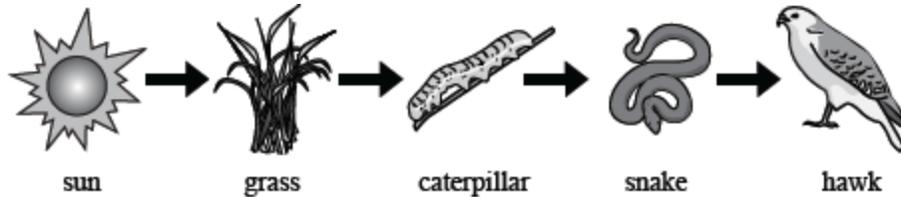
Name _____

Field Studies: PRE/POST Test

(circle)

Questions 1 – 4 are about food chains. Choose the **BEST** response to each multiple choice question.

1. Serena's teacher asked her to make a diagram of a food chain on the classroom tablet. She gathered pictures and made the diagram shown below.



Serena's Food Chain Diagram

What do the arrows in the diagram represent?

- A. How energy is transferred between living things
 - B. The size of the populations involved in the food chain
 - C. How energy transfers from consumer to producer
 - D. The life cycles of the living things involved in the food chain
2. A flower is a living thing. How would a flower be categorized?
 - A. A flower is in the plant kingdom and is a consumer.
 - B. A flower is in the plant kingdom and is a producer.
 - C. A flower is in the animal kingdom and is a consumer.
 - D. A flower is in the animal kingdom and is a producer.
 3. Producers are living things that
 - A. Get their energy from the ground to get food.
 - B. Get their energy from the air to get their food.
 - C. Get their energy from other plants to make their own food.
 - D. Get their energy from the Sun to make their own food.
 4. What role does the Sun play in a food chain?
 - A. The Sun provides energy for the grass.
 - B. The Sun heats up the hawk.
 - C. The Sun provides energy for the hawk only.
 - D. The caterpillar eats the grass and the Sun to get its energy.

Questions 5 – 6 are about life cycles of living things. Choose the BEST response to each multiple choice question.

5. The Florida panther is an endangered species living primarily in and around the Everglades. Cows, raccoons, black bears and bobcats also live in Florida. The diet of these animals enables them to eat different things. A drawing of a Florida panther and a chart comparing the diets of these animals are shown below.



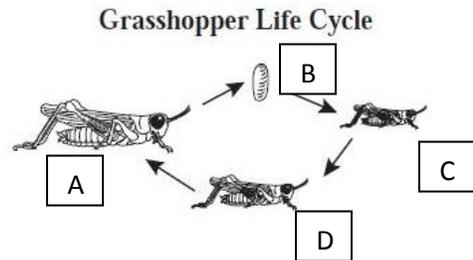
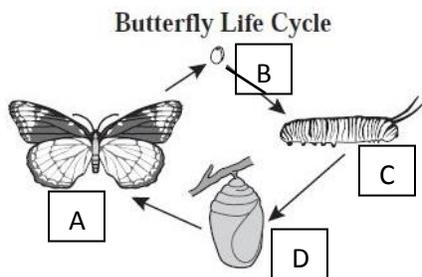
FLORIDA ANIMALS

Animal	Diet
Black bear	nuts, acorns, insects
Bobcat	mice, reptiles, birds
Cow	corn, grass, hay
Florida panther	deer, raccoons, armadillos
Raccoon	fruit, acorns, frogs, fish

Using information in the chart, which of the other animals has a diet that is most similar to that of the Florida panther?



6. The life cycle of both butterflies and grasshoppers starts at the same stage. The pictures below show the life cycle of both living things.

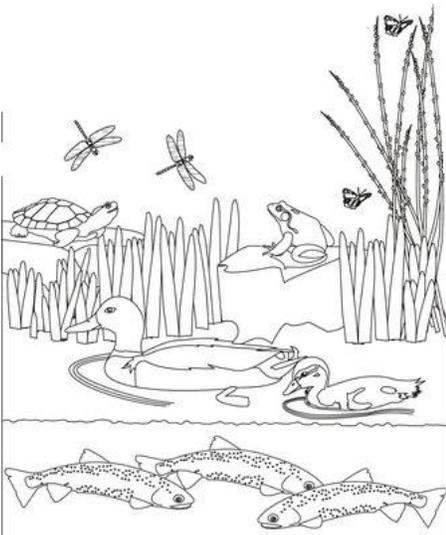


Which of the following is the beginning stage of the life cycle for both the butterfly and the grasshopper?

- A B C D

Questions 7 – 10 are about humans' impact on the environment. Choose the **BEST** response to each multiple choice answer.

7. Marcus is going to visit the Peace River/Lake Hancock Watershed with his class. He knows that the Peace River Watershed is made up of miles of wetlands. He also knows that humans have changed a big portion of the Peace River Watershed. Which of the following is the **MOST** important reason the Peace River Watershed is an important wetland system.
- A. The Peace River Watershed provides numerous undiscovered fossils for scientists to study.
 - B. The Peace River Watershed is the only place in Florida that the Florida panther can live.
 - C. The water in the Peace River Watershed is important to humpback whales.
 - D. The Peace River Watershed provides a habitat for several species and acts as a filter for the water that flows through it.
8. What are some ways that humans can positively impact their watershed?
- A. Reduce, reuse and recycle packing materials
 - B. Limit the amount of water used in their household
 - C. Plant trees
 - D. All of the above
9. Which type of waste contributes to the polluting of our water?
- A. Dog waste
 - B. Recycling
 - C. Over fertilization of lawns
 - D. A and C
10. A'kierra has planned a day to go dip netting with some friends and her mom. After a short bike ride to the freshwater pond, they walk over to the water's edge and are shocked to see someone else's trash all over the area that they were going to dip net from! As a group they decide to clean up some of the mess safely. One of A'kierra's friends, Jason, has brought some gloves and a plastic bag. Together, they clean up an area of the pond. What impact does cleaning up the area have on the pond?



- A. The removal of trash allows the sun to shine on the pond better.
- B. The removal of trash allows for a healthy habitat for all living things.
- C. The removal of trash could get the group in trouble.
- D. The removal of trash makes it harder to dip net.

ANSWER KEY

1. A
2. B
3. D
4. A
5. B - BOBCAT
6. B
7. D
8. D
9. D
10. B