



Adaptations Lesson 1: “The Solve”

Student Handout

I. Watch The Mosa Mack Mystery

Either on your own, in a small group or as a class (your teacher will let you know), watch Mosa Mack’s episode on Adaptations. Then, fill out the questions below. Include a time code in your answer as evidence of where you found your answer.

Name: _____

Date: _____

Episode Questions

1. What makes Caroline so different from her friends?
2. What mystery does Caroline call on Mosa to help her solve?
3. Describe what the environment looks like in 1890. What does Marvin say is causing this horrible air and turning the tree bark black?



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4. Why does the robin eat only the two white moths out of all the moths on the tree?

5. What does Mosa mean when she describes Marvin's dark wings as an "advantageous" trait?

6. Why is Marvin more likely to mate with other dark-winged moths?

7. When Mosa returns to the present, what does she notice is different than in 1890?

8. Solve the mystery: Why are there so many light-winged moths now when there used to be so many dark-winged moths in 1890?



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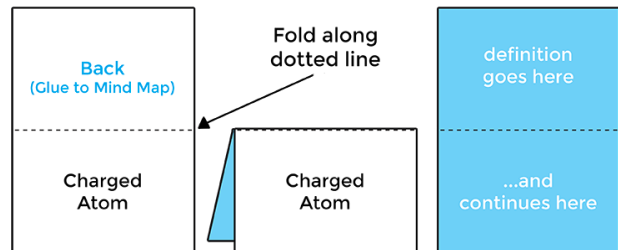
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II. Vocabulary Activity

Complete the activity by following the instructions below, or complete it [here online](#).

1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**. Do not cut the dotted lines.

2. Fold the cards along the dotted lines.



3. Write the definition of each term on the inside of the card using the definitions below.
4. Use the clues from the Vocabulary Mind Map to place the cards in the correct location. Explain your thinking to your group as you go.
5. When you're ready to glue or tape, raise your hand so your teacher can check your Mind Map.
6. Use glue or double-sided tape to connect the back of the vocabulary card to the correct place on the Mind Map.

7. Discuss with your group:
 - a. In the mind map, what happens to the moth that gets seen by the predator? What happens to the moth that camouflages?
 - b. What is the difference between a "trait" and an "advantageous trait"?
 - c. Make a prediction: Why do you think the population of moths has more white moths than black moths?

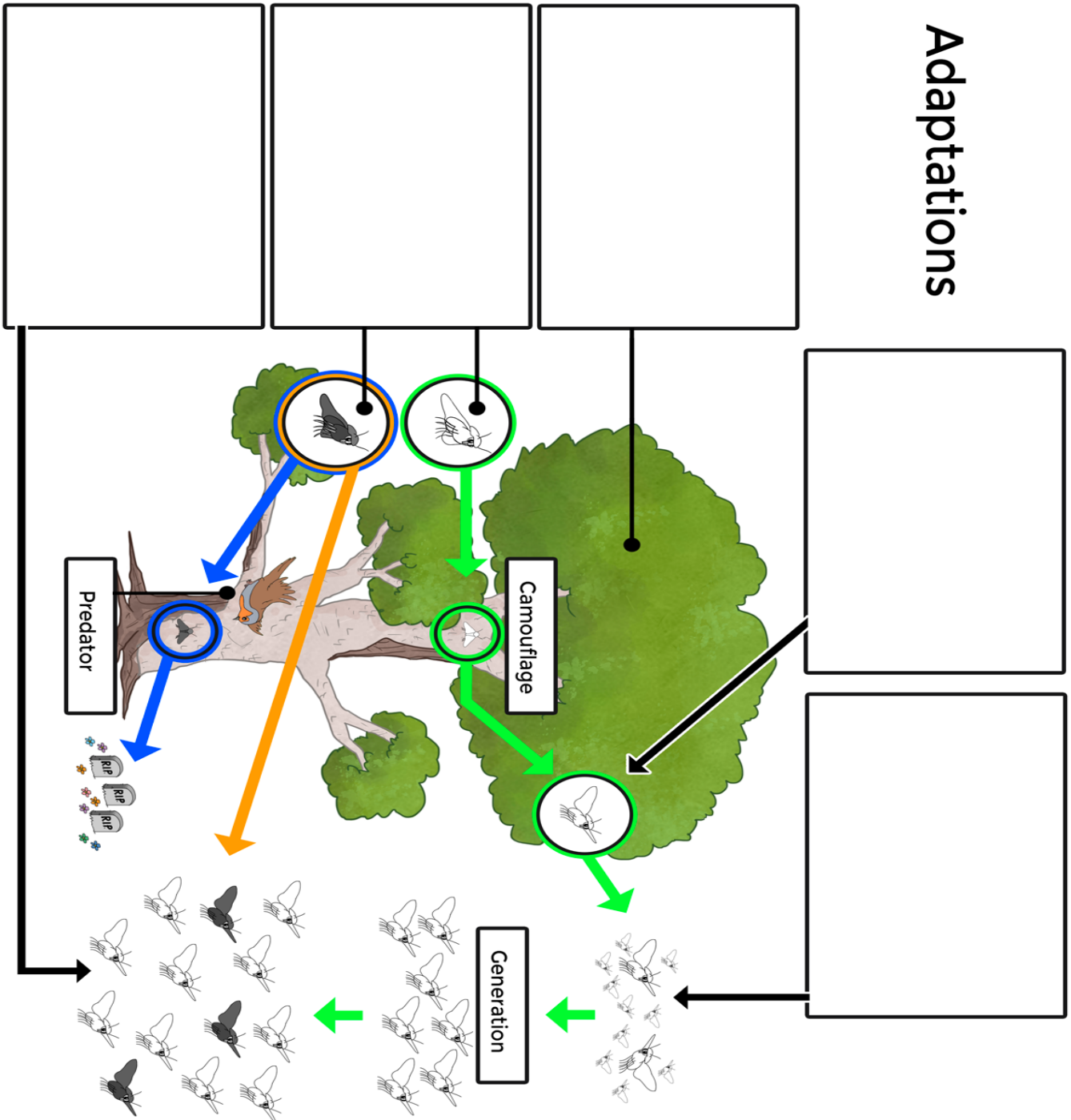




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Adaptations Mind Map:





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Vocabulary Cards

Advantageous
Trait

Reproduce/
Procreate

Environment

Trait

Population

Vocabulary

- **Advantageous Trait:** a characteristic that is beneficial to an organism's survival or reproduction
- **Environment:** the surroundings in which an organism lives
- **Population:** all the organisms in the same group of organisms
- **Reproduce/Procreate:** to produce one or more organisms
- **Trait:** a characteristic or feature of an organism



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III. Exit Ticket: Check for Understanding

Complete the exit ticket below or you can take the quiz online!

Name: _____

Date: _____

1. What is another word for a characteristic that an organism has?
 - a. Gene
 - b. Survival
 - c. Generation
 - d. Trait
2. Fill in the blank: A gene that helps an animal survive and _____ will get passed on to offspring.
 - a. Generate
 - b. Produce
 - c. Reproduce
 - d. Thrive
3. An advantageous trait that becomes more common in a population is also known as a _____.
 - a. Trait
 - b. Adaptation
 - c. Gene
 - d. Survival Strategy
4. What advantageous trait helped moths survive in 1890 during the industrial revolution?
 - a. Flight
 - b. Light Wings
 - c. Attraction to Light
 - d. Dark Wings
5. In the episode, the bird sees the dark moths against the white bark but leaves most of the white moths there. What is it called when organisms blend into their environment?
 - a. Sexual Selection
 - b. Camouflage
 - c. Feeding Adaptations
 - d. Predation



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6. The Mountain hare is made up of mostly white-furred hares with only a few dark-furred hares because they rely on snow for protection during the winter time. Due to global warming, there has been a decrease in snowfall, rarely leaving any snow on the ground. How do you think this might affect the population of Mountain hares?

- a. They will all remain with the same color fur.
- b. With less snowfall, all white-furred hares will die because all are now visible by predators.
- c. There will be more dark-furred hares because those hares survive longer in their dry environment to pass on their dark fur genes to their offspring.
- d. All hares will migrate to another area.