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Variation Experiment; Rules & Setup



You (and your group) are a predator species and will be hunting your favorite prey, the sneaky jellybean. This prey species has a lot of variation, they can be many colors: red, blue, brown, dark green and light green. Your predator species will be named by your feeding adaptation: chop sticks, plastic spoons, plastic knives, plastic forks, or tweezers. A small cup represents your mouth. You will be hunting your prey in 1-minute trials. For 1 minute, you must gather as many jellybeans as possible, using ONLY your feeding adaptation. Put the captured jellybeans in your cup. DO NOT eat them!! At the end of 1 minute, everyone must count the number of jellybeans they captured. You will write down how many you captured. The predator species with the most jellybeans will have shown biological fitness and will grow in population size. One more individual will be added to the winning species from the predator species that captured the least amount of prey. Predators will hunt prey a total number of four times. Each time we will count up the number of prey caught to see how population numbers will change.

Variation Experiment: Make Your Hypotheses

1. Before you begin, a hypothesis must be made. Which predator species will be most successful?

2. Which prey color will be most successful (which color will be the HARDEST to find)?

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3. Which predator will be LEAST successful (who will have the HARDEST time capturing prey)?

4. Which prey color will be LEAST successful (which color will be the EASIEST to find)?

Variation Experiment:
Collect Your Data

	# Of red	# Of blue	# Of yellow	# Of dark green	# Of light green	Total
Trial 1						
Trail 2						
Trail 3						
Trail 4						

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Variation Experiment: Results

1. Which prey color was least successful (which one was the EASIEST to find)? Why?

2. Which prey color was most successful (which one was the HARDEST to find)? Why?

3. Which predator species had the most fitness? Why?

4. Which predator species might go extinct and why?

5. How do your hypotheses compare with the results of you data?

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Variation Experiment: Class Results

	# Of red	# Of blue	# Of yellow	# Of dark green	# Of light green	Total
Tweezers						
Chopsticks						
Knives						
Spoons						
Forks						
Total						



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Variation Experiment: Discussion Questions

1. If some colors of the jellybean population are really successful (good camouflage) and some colors are not successful, what color or colors do you think the jellybean population might be in couple thousand years? Think about how natural selection acted on the giraffe population millions of year ago (short necks vs. long necks).

2. Why can't the plastic knife predator population change to be better adapted at catching jellybeans?

3. What would happen to this jellybean population if the grass were a different color, like the color red?

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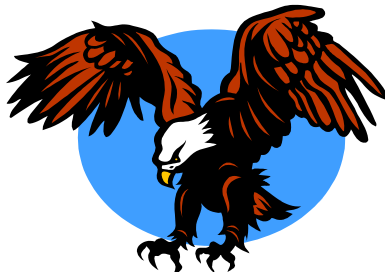
Variation Experiment: Test

Vocabulary Match-up: Connect the word with its definition.

Part 1.

Vocabulary Words

- 1) Variation
- 2) Predator
- 3) Adaptative trait
- 4) Prey
- 5) Extinct
- 6) Population
- 7) Species
- 8) Natural Selection



Definitions

- A) A group of animals that can reproduce together in the wild.
- B) When an animal is the food of another animal.
- C) Differences in traits of animals in the same species. For example, humans are all the same animal, but they have different eye color and hair color.
- D) A group of animals that live in the same area.
- E) An animal that hunts and eats other animals.
- F) A trait that helps an animal either eats, defend/camouflage, or reproduces.
- G) This is one way animal species change over time. When this happens, animals with adaptive traits survive, and animals without adaptive traits die.

Part 2.

- 1) Which animal is the predator and which one is the prey?

- 2) What adaptations of the predator will help it catch and eat its food (list three)?

- 3) What adaptations of the prey will help it hide or get away (list two)?

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Variation Game: Poster Setup

To make a scientific poster, you need five sections to explain your experiment.

1) Introduction: In four complete sentences, write down what question you were trying to answer and your hypotheses.

2) Background: In six sentences, write down the definition of adaptation and two examples of animal adaptations. Then write what the definition of variation is and why it is important to natural selection.

3) Materials and Methods: In four sentences, explain the experiment.

4) Results: Copy the table with the class results and give it a title.

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5) Conclusions: Were your hypotheses supported? Why or Why not? (4 sentences)
