

**THE NATURAL SELECTION OF STICK-WORMS, or...
"YOU, TOO, CAN BE SELECTED, NATURALLY!"**

PROCEDURE: Today, you are all "sticky-birds", members of the species *Birdus stickus*, which, as every good biologist knows, are great connoisseurs of the common stick-worm, or *Stickit tooya* in the family Toothpickidae. These worms have a remarkable resemblance to the common toothpick in structure. But make no mistake about it, these skinny sticks of nutrition are actively sought out by all members of your species. Take a good look around you... those famished, beady-eyed birds are your competition. Yes, that's right! It's you or them! Go get 'em, sticky-bird!

You are a migrating bird, and today you are passing over Flammer's fertile farm on your way north for the Winter. That's right, NORTH! You're a weird bird. In the pasture, you spot the stick-worms waiting (sticking around). Lucky for you, whenever a stick-worm sees a sticky-bird, it freezes in fitful fear. This makes it very easy for you to pick it up with a minimum of effort. Although there is only one species of this worm, it is found in two color forms: tan and green (*Stickit tooya domesticus*, and *Stickit tooya chloris*, respectively).

Farmer Flammer favors these funny, frolicking stick-worms because they fill the fields with finely filled furrows which favor the flora and fauna of the fertile farm. So watch out! Gorge yourself with these delicacies, but be ready to make a hasty retreat in case farmer Flammer sees you.

When we fly out to the grassy pasture, wait along its side until a signal is given. Then start picking up stick-worms as fast as you can. You won't have much time because farmer Flammer and his friends will chase you nasty birds out of his perfect pasture. When he does, come flying back to your nest as fast as your little wings can carry you, and count your stick-worms by color.

On the work sheet provided below, record your totals and the class totals, as indicated. Then answer the questions.

WORKSHEET

DATA: No. of TAN stick-worms caught:...._____ (Total TAN caught by class:....._____)

No. of GREEN stick-worms caught:_____ (Total GREEN caught by class.._____)

Total number caught by you:....._____ (Total worms caught by class:..._____)

QUESTIONS: (answer on back of this sheet)

1. If the total population of worms not eaten today were allowed to be unmolested by the nasty sticky-birds, what would be the results in several years time (assuming the stick-worms were alive and sexy)?
2. Since a change in environment around living organisms can act as a stimulus for natural selection to occur faster, DESCRIBE the environment of the stick-worms and how the environment changed today.
3. Explain the COMPETITION that was set up today: A) between the sticky-birds, and B) between the stick-worms, both in terms of the following: 1) what were they competing for? 2) what survival advantages did some have? and 3) what weaknesses did other have?
4. Why was a time limit placed on the collecting of the worms?
5. What would be the most probable result of this experiment if it were repeated after the lawn was allowed to dry up and turn yellow?
6. How would Lamarck have explained the worms' adaptations over several years?
7. How would Darwin have explained the worms' adaptations over several years?
8. Briefly state Darwin's theory of natural selection.