

Natural Selection Activity - PAP

Directions: Natural Selection – selects the most fit to survive.

1. Pick up a bag of beads; this represents the original population (72) of the *Coloris caput* (Latin for colored bead) organism.
2. Carefully empty the bag and record the necessary information for the original population in the first two columns (A & B) of the data table below. Calculate the percentage of each color (#of color/total # of beads) in column C.
3. Get a piece of fabric from your teacher (if not provided with one) and spread it out on your table. Take your bag of *Coloris caput* and dump your beads (carefully so they don't go everywhere) on your fabric. Spread them around.
4. One person in the group needs to be the timer. Another person is the predator (Beadus collectorus). The timer will say "GO" and give the predator 15 seconds to "eat" as many prey as possible. The predator uses one hand to pick up one bead at a time and set it in a designated spot on the table before going after another bead. When the timer says "STOP" the predator can't collect any more beads. Remember: Predators feed on the ones that are easy to see. **PICK UP THE BEADS THAT STAND OUT.**
5. Carefully slide your remaining beads off the fabric. These are your survivors! Each survivor will have one offspring. So, count each bead twice and record the data in column D on the table below. Spread all of the beads on your piece of fabric again.
6. Repeat step # 4 and # 5 allowing only 10 seconds to eat for round 2, then again allowing only 5 seconds to eat for round 3 (fill in columns E and F)
7. Slide the remaining beads off the fabric. This is your final population after natural selection. You should have columns A – F filled in. Calculate the percentage of survivors using your final population and record in column G.

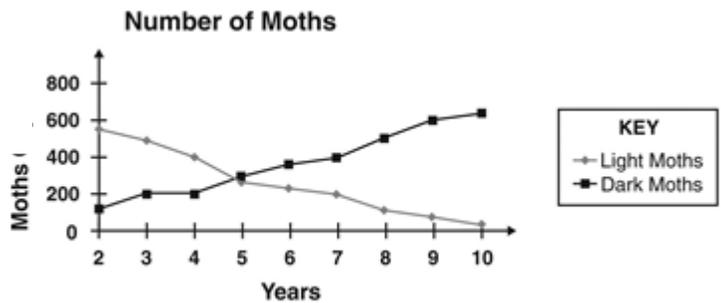
Data Table:

A	B	C	D	E	F	G
Color of bead from original population	# of each color from original population	% of each color from original population	# of each color after natural selection round 1 (X2)	# of each color after natural selection round 2 (X2)	# of each color after natural selection round 3 (X2)	% of each color after natural selection (use column F only)
	Total # of beads in original population =	Your percentages should add up to 100%			Total # of beads after natural selection=	Your percentages should add up to 100%

8. Return your beads to the bag. Return your fabric to the bag.

Complete the Post Lab Questions.

1. This lab modeled “natural selection”. Define *natural selection* in your own words:
2. What colors in the original population decreased or are NOT represented in the population after natural selection? Why do you think this is?
3. Why is Natural Selection NOT a random event?
4. The organisms that adapted the best survived. How will this genetically affect future offspring of these organisms?
5. Look at the graph below. Which moth is being naturally selected for? _____



Question: Does natural selection affect the phenotype (physical characteristics) of a population?

Claim <i>an answer to the question based on the data</i>
Evidence <i>summary of the data or observations</i>
Reasoning <i>background knowledge and science that supports the claim based on the evidence</i>