

Name	Round 1	Round 2	Round 3	Round 4	Round 5	Total points
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
subtotal						
Totals / species / round (after reproductions)						Final Total
Dead						Dead:
Runners						Runners:
Hoppers						Hoppers:

Protocol for using the Survivor game score sheet:

1. List student names in the "Name" column
2. In the line next to the student's name, write 1 or 2 for the number of resource points that student earned in a given round, or write 'x' or 'dead' if the student did not acquire resources during that round.
3. At the bottom of the sheet, list the total number for each species, after all reproductions/recruitments have taken place. These numbers will be used to graph the population changes after the simulation is complete.
4. Use the subtotal line to keep track of each student's cumulative points by summing points earned in the current round with the subtotal from the previous round. Remember that once a student earns 4 life points, s/he may reproduce, or recruit another student from the "abiotic factor zone" to his or her species. Once a student has used these 4 points, the subtotal begins again from 0. If a student has existing points but "dies" in a given round, s/he loses all points, and the subtotal begins again from 0.

“Survivor” natural selection game

Sample discussion questions (may be adjusted for varying levels of teaching)

1. What happened to the number of hoppers over time? What happened to the number of runners? Why do you think this happened?
2. How do you think the population will continue to change? Will the number of runners continue to grow exponentially? Discuss the fate of each species.
3. What were some of the different strategies employed in choosing resources? Did you always try to get the same color of resource?
4. What is the maximum combined number of hoppers or runners (i.e. Carrying capacity) that could be alive at the end of a given round? Why?
5. What do you think would happen if a predator were introduced? Discuss your reasons for your answer. Sketch a graph to illustrate your speculations. What other things besides predators might influence population growth?
6. What would happen if the people who were mutated into runners had instead been mutated into crawlers? What happens when a disadvantageous mutation is introduced into a population?
7. When does the new trait/individual become considered a species?
8. Assume this population of hoppers was geographically isolated, and has gone extinct due to being out-competed by the runners. There is an island where hoppers still flourish. What would happen if the new species, runners, were introduced onto this island? Are we certain that the same thing would happen as it did in the first encounter?
9. Devise a scenario in which the runner might be shown to actually be the ancestral species in this whole scenario.