

*Survivor:  
Galapagos  
Island*



*Evolution Event*

"... can we doubt (remembering that many more individuals are born than can possibly survive) that individuals having any advantage, however slight, over others, would have the best chance of surviving and of procreating their kind? On the other hand, we feel sure that any variation in the least degree injurious would be rigidly destroyed. This preservation of favourable individual differences and variations, and the destruction of those which are injurious, I have called Natural Selection, or The Survival of the Fittest."

Charles Darwin "On the Origin of Species by Means of Natural Selection" 1859

Survivor; Galapagos Island is similar in format to "Instant Invention" except it is not entirely instant. The objective will be to create a device using only the materials provided that can capture food and transport it to the mouth of a hungry offspring. The team that delivers the most food receives the most points and has the "best chance of surviving and of procreating their kind". The team that provides the least amount of food loses and will be "rigidly destroyed".

To aid in the development of a strategy the following materials **may** be provided: balloon(s), elastic(s), plastic coffee stirrers, Popsicle stick(s), binder clip(s), paper clip(s), Styrofoam ball(s), pipe cleaner(s), stale mini-marshmallows, and heavy stock paper. There may be some additional **bonus** materials added the day of the event. In other words, if something is lying around the room and is no longer used it will become a bonus material.

The day of the event, North Shore Science League participants will be shown the "hungry offspring" and the food (prey). The "hungry offspring" will consist of a PVC pipe with a diameter no greater than 4 inches (10.16cm). The "food" may be **one** of the following: beans, candy (gummy worms would be a little too obvious), popcorn, rice, cereal, and small metal items. Most likely, the "food" will be mixed with non-food items. If the offspring is accidentally "fed" a non-food item a deduction will occur. The container holding the food might also present some interesting design challenges. Good luck and remember, sometimes Dar"win" and sometimes Dar"lose".

Devices must be operated by hand but cannot be directly attached to the hand. In other words, you may not attach (with tape, staples, paper clips etc) Popsicle sticks directly to your fingers. It's bad and you will not do better (score-wise) than any team that is not disqualified for not following these simple instructions.

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At the start of the event you will be shown the "Hungry Offspring" and told the dimensions of the beak's opening. You will also be shown the various containers (niches) filled with "food". The only food of value to the hungry offspring is kidney beans. ***A one-point deduction will be assessed for any item transferred to the offspring that is not a kidney bean.*** Each container / niche presents its own unique challenges. You will only be allowed to forage (obtain food) from one container. Consider the challenges of the container / niche you have chosen in the design of your device. You will be given 30 seconds to transfer food from the container to the birds beak.

At the signal you will begin to build a device that can capture food found in various containers and transfer it to the hungry offspring's beak. You will have approximately 30 minutes to complete the construction of your device. Use your time wisely. You will be given warnings at 10 minutes, 5 minutes, and 1 minute. You will not be allowed to alter your device once you are told to stop.

***You must use all the materials provided.*** All the materials do not need to be directly involved in the transfer of food to the offspring, but they must be part of the device in some way. Materials may have an ornamental use(the better to attract potential mates and give some external indication of internal health, my dear). Tape is an exception. You may use as much or as little tape as you need. You will not receive any additional tape. ***A 5 point deduction will occur for each unused item.*** You may modify materials (bend etc) but they must remain quantifiable, in other words, it must be obvious that there are 6 marshmallows in use even after they have been modified.

School Name \_\_\_\_\_

Materials		
<input type="checkbox"/> 3 Paper Clips	<input type="checkbox"/> 6 Stale Marshmallows	<input type="checkbox"/> 2 Pipe Cleaners
<input type="checkbox"/> 1 Styrofoam Ball	<input type="checkbox"/> 3 Popsicle Sticks	<input type="checkbox"/> 4 Elastics
<input type="checkbox"/> 2 Feathers	<input type="checkbox"/> 2 Google Eyes	<input type="checkbox"/> 2 Balloons
<input type="checkbox"/> 1 Drinking Straw	<input type="checkbox"/> 3 Coffee Stirrers	<input type="checkbox"/> 3 Red Hearts

Total # of Kidney Beans	Total # of Non- "Food" Items
Materials Deduction (if any)	Total Points Scored