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The Cost of Reproduction in Bean Beetles

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The principle of allocation states that life histories of organisms are based on a series of trade-offs designed to maximize the overall fitness of an individual. In other words, if organisms use energy for one function such as reproduction then the amount of energy available for other functions is reduced. In juveniles of a species, energy is divided between survival and growth. Once the organism reaches sexual maturity however, those same energy resources must now be divided among survival, growth and reproduction. For many organisms, the cost of reproduction comes in the form of reduced longevity. The bean beetle, *Callosobruchus maculatus* is an ideal organism for examining reproductive costs because it only feeds during the larval stage. This lack of feeding as an adult means that the beetle will have a finite amount of energy resources to draw on as it completes its lifecycle, making it an ideal organism for students to explore the costs of reproduction. All of the handouts, instructors notes and sample data from this mini workshop are now available for download from the bean beetle website at http://www.beanbeetles.org/protocols/reproduction_costs/synopsis.html