

***Jumping Spider Dances: Sexual Selection***  
(University of Arizona, [http://eebweb.arizona.edu/Animal\\_Behavior/spiders/spider0.htm](http://eebweb.arizona.edu/Animal_Behavior/spiders/spider0.htm))

If the events of the past eight months have shown us anything, it is that really great, easy-to-use, virtual resources are needed to ensure continuity in student learning. This last semester, teachers faced enormous struggles trying to get in all of the content they needed to cover while shifting from in-person to online learning. One of the largest difficulties with this change was finding alternative lab activities that cover the material that would otherwise be covered in class. Thanks to the internet and some very creative people, there are a plethora of virtual labs out there that can be used while the students are stuck at home.

One such lab activity is called *Jumping Spider Dances: Sexual Selection*. It is put out by the University of Arizona and takes the students through a simulation of sexual selection using jumping spiders as a model. The activity starts with a review of natural and sexual selection, describing the latter as being different from natural selection in that individuals differ in their ability to obtain matings, which means that individuals of the same sex affect each other's reproductive success and that members of one sex are competing against other members of the same sex, not against other individuals in the population.

The activity then goes on to discuss gamete size, reproductive rates, sex and operational sex ratios in a population of spiders, competition, and female choice. On this last note, the activity discusses and explains the importance of ornamentation in males, which is often needed to attract the female. Photographs of jumping spiders are shown to help exemplify the concept. This first section of the activity ends with an explanation and video of a courtship dance performed by the spiders. A self-scoring quiz assessing the information presented immediately follows, providing students a chance to check their learning.

The next section of *Jumping Spider Dances: Sexual Selection* delves into the idea of evolution and the formation of new species. It discusses, using authentic data from original research, how geography and the effects of climate change are causing speciation to occur in the jumping spiders. The authors describe an experiment in which they genetically tested spiders from different locations on the same and on different mountains. They found that populations are splitting into separate species. Sources of the data are cited, followed by a comprehensive summary of the entire activity.

*Dirty Dancing: Sexual Selection* is a web-based activity that requires nothing to be downloaded, which means it should work

on all devices. There is a disclaimer, however, that Netscape users may experience some differences as they move through the site. These are identified when the user reaches them. The site uses JavaScript as its programming language, which is good because Flash is being discontinued at the end of the year. The interface is somewhat simplistic, with text interspersed with line drawings, images, and some interactive simulations.

Sexual selection is part of the Advanced Placement Biology curriculum, so this site is perfect for AP teachers needing an alternative lab to replace the in-class activity. While it does not provide the same hands-on learning that would take place in the classroom, it does provide content that is challenging and really encourages higher thinking skills. Other students of biology will also benefit from using this site, as students see examples of sexual selection in nature all the time. The teacher may need to provide some additional information and guidance, but even students as young as middle school would enjoy seeing how and why mate selection occurs.

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