

## THE HUMAN ROLE IN DOG EVOLUTION

BASED ON <http://www.nationalgeographic.com/xpeditions/lessons/08/g912/dogsevolution.html>

### Overview:

This lesson asks you to investigate and think carefully about the human role in the domestication and evolution of ancient and modern dog breeds. You will explore the relationship between wolves and dogs, the reasons why dogs have been bred, and the controversial wolf hybrid breed. Think of this project as a guided research paper that you will turn in.

### Instructions:

1. Take the online Wolves and Dogs: Fact and Fiction quiz:  
<http://www.pbs.org/wgbh/nova/wolves/wolfdog.html>  
After you have taken this quiz answer these questions in writing:
  - What is the genetic relationship between dogs and wolves? How closely is *Canis lupus* related to *Canis familiaris*?
  - Approximately how long ago were dogs domesticated?
  - Question number five states that there are many dog breeds "because dogs have undergone a number of changes due to natural selection—and have also changed drastically through artificial selection for hair color, size, and temperament." What does this mean? What is the difference between natural and artificial selection?
2. Learn about the distribution of and the subspecies of wolves. You can print a copy of this at [http://commons.wikimedia.org/wiki/File:Present\\_distribution\\_of\\_wolf\\_subspecies.gif](http://commons.wikimedia.org/wiki/File:Present_distribution_of_wolf_subspecies.gif)  
(But you must cite your source!) and describe the:
  - The variety of subspecies of wolves
  - The range of subspecies
  - The quantity of the subspecies
3. Read the first two paragraphs of the article: Wolf to Woof? The Evolution of Dogs at:  
[http://www7.nationalgeographic.com/ngm/data/2002/01/01/html/ft\\_20020101.1.html](http://www7.nationalgeographic.com/ngm/data/2002/01/01/html/ft_20020101.1.html)  
**Which of these two scenarios do you think is more likely and why?**
  - Scenario 1: "Humans adopted wolf pups and natural selection favored those less aggressive and better at begging for food."
  - Scenario 2: "Dogs domesticated themselves by adapting to a new niche—human refuse dumps. Scavenging canids that were less likely to flee from people survived in this niche, and succeeding generations became increasingly tame."
  - Describe in writing the two scenarios by which dogs may have become domesticated. Hypothesize how dogs could have become so different from wolves in terms of their appearance but retained the vast majority of wolves' genetic makeup.
4. Go to go to the Dog Breed Info Center and the American Kennel Club and link to these dog breeds: Scroll down each page and read about the origins of these breeds. List the countries or regions where these breeds were first developed.
  - *Older breeds*: Saluki, Afghan Hound, St. Bernard, Alaskan Malamute, Lhasa Apso
  - *Newer breeds*: Australian Shepherd, Pembroke Welsh Corgi, Miniature Poodle, Mountain Cur
5. Label a map ( you can print a world map out at <http://www.nationalgeographic.com/xpeditions/atlas/> ) with the locations where these dog breeds originated. Use different colors or patterns to differentiate between older and newer breeds.
6. Look at your map and consider the ways that human have altered dogs' geographical distribution and genetic makeup. Describe the reasons people have bred dogs throughout the centuries (e.g., for herding, hunting, and carrying loads in cold weather). Then discuss the reasons people continue to breed dogs today (e.g., for pets, show, and racing).
7. Read the Introduction and Background sections of the Animal Welfare Information Center's Wolf-Dog Hybrid article at <http://www.dogexpert.com/Miscellaneous/The%20Wolf-Dog%20Hybrid.pdf>
  - List the major issues and questions that this article will address concerning this controversial dog breed.
  - Describe the primary differences between wolf and dog genetics and behavior. How do these differences show up in wolf hybrids? Why are there different opinions as to whether wolf hybrids make good pets?
  - What has been the role of humans in the evolution of dog breeds?
  - How much should people get involved with the genetic mixing of dog species and breeds?
8. Include a bibliography in MLA format of the sources listed above. On the class website under “links” use the citation maker.