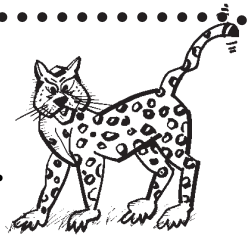
Activity Sheet 4: Grades 6-8

Domestic vs. Wild 

When humans domesticated cats and dogs, they not only chose animals that would be more sociable with people, they also selected for higher reproductive rates. **Domestic cats**, for example, can reproduce as young as 5-6 months of age and may breed twice a year. As a result a single pair of cats may result in a population as high as 2,048 cats in 2 1/2 years, assuming breeding at 6 months, 2 litters per year and 6 young per litter equally divided between male and female kittens. A pair of **African wildcats** would produce a population of about 18 in the same time given a later age for sexual maturity, breeding just once a year and a smaller litter of 4 kittens.

Complete the following table by using the formulas at the top of each column. Assume each population starts out with a total of two cats, one mature male and one mature female cat. Show your work in the space provided.

	Domestic Cat (Breed twice per year)		**African Wildcat** (Breed once per year)	
Time	New Kittens = ½ Total Cats x 6	Total Cats = New Kittens + Previous Total Cats	New Kittens = ½ Total Cats x 4	Total Cats = New Kittens + Previous Total Cats
Start	**0**	**2**	**0**	**2**
6 months	**1 x 6 = 6**	**6 + 2 = 8**		**2**
1 year				
1½ years				
2 years				
2½ years				
3 years				
3½ years				
4 years				

How does the difference in reproductive rate effect how we control the population of domestic cats? How does it effect the protection of the African wild cat?

As an extension activity, graph the domestic cat and African wild cat populations at 6 month intervals on a separate piece of paper. Determine the reproductive rate for both populations using y=mx+b.

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