

The following population simulation activities will show how quickly a small population of animals can multiply. Both white-tailed deer (a native species) and wild pigs (an invasive species) have relatively low mortality (death) rates when they have adequate food supplies and are not controlled by human intervention. After reading the information about wild pigs, what is your hypothesis on how quickly pig populations will grow compared to white-tailed deer?

**Hypothesis:**

**Population Simulation #1**  
**White-Tailed Deer**

Take your bag of tiles/paper and remove 10 tiles - 2 BLUE (males) and 8 RED (females). These represent the starting population of deer. At each time interval, randomly draw from the bag the number of new tiles that equal the females to add to your population. Tiles with a black X represent deer that have not survived, and those tiles will be set aside. All living females will continue to reproduce. Complete the simulation until you have reached a population of 100. How long did it take?

Year	Males	Females	Total Pop.
0	2	8	10
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

**Population Simulation #2**  
**Wild Pigs**

Add all the tiles back to the bag. Start with 5 tiles this round - 1 BLUE (male) and 4 RED (females). These represent the starting population of pigs. Follow the same instructions, but now **draw 4 new tiles for each female** every six months instead every year. Wild pigs average 2 litters per year of 4-6 piglets each. Complete the simulation until you reach a population of 100. How long did it take compared to the deer? Discuss why we may consider control measures.

Year	Males	Females	Total Pop.
0	1	4	5
.5			
1			
1.5			
2			
2.5			
3			
3.5			
4			
4.5			
5			

**MATH EXTENSIONS:**

1. Create graphs to represent both simulations.
2. What mortality rate (expressed by a percentage) will begin to decrease the wild pig population?

Use evidence and reasoning from the article to provide at least **TWO** claims to complete the following statement.

**The population of wild pigs in the United States continues to grow rapidly due to their:**

<b>Claim #1</b>	
<b>Evidence</b>	<b>Reasoning</b>
<b>Claim #2</b>	
<b>Evidence</b>	<b>Reasoning</b>

- 1. What environmental factors could positively or negatively affect the wild pig populations?**
  
- 2. What human intervention factors could positively or negatively affect the wild pig populations?**
  
- 3. Pretend you are a wildlife conservationist. Write an argument of whether a pig is an invasive species and how their presence affects other components of the ecosystem where they are present. Then propose a method or methods to control the population. How would you share this information? What groups of people will need to be involved?**