Unit 5 Discussion Example - Modeling Population Growth

Post 2: Reply to a Classmate

I will respond to my classmate that discussed the prairie dog population. Here is the trace table (I used Excel!)

n (years)	a_n (population)
0	100
1	300
2	900
3	2,700
4	8,100
5	24,300
6	72,900
7	218,700
8	656,100
9	1,968,300
10	5,904,900

If you look at the at population at year 2, there are now 900 prairie dogs in this space. That is maybe a little high and pushing the space limits, but perhaps it could accommodate the increase. However, by year 10, there is NO way that the space could accommodate that many prairie dogs! I'm sure both space and food would run out way before year 10!

A more accurate population growth model might include additional variables such as death rate – maybe subtracting out a certain percentage each year (each iteration).