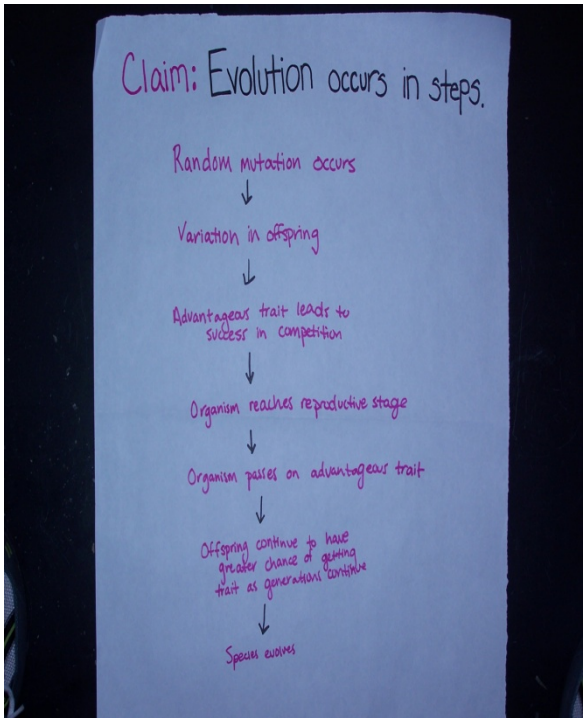
**Sample student work.**
This student was responding to the question: “Does evolution occur in steps?” This student work was ultimately uploaded to create a wiki, which was shared with and critiqued by all class members.

**Claim**
Evolution occurs in four simple steps. It begins with a genetic variation; the second step is overproduction, followed by the struggle for survival. The final step is a different survival and reproduction, which creates a new species.

**Initial model**




**Argument**
The four basic steps of evolution are

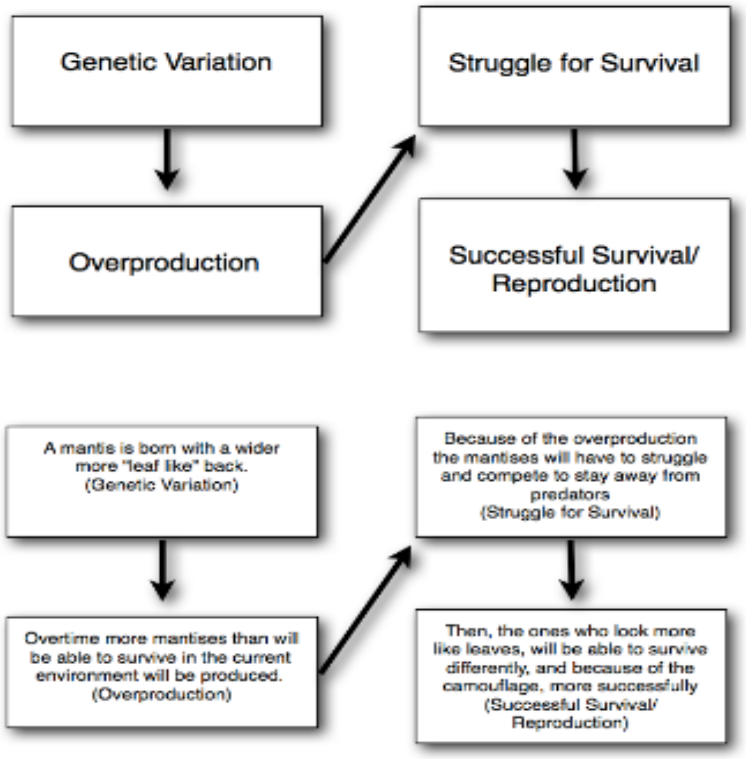
1. genetic variation,
2. overproduction,
3. struggle for survival, and
4. different/successful survival and reproduction.

Genetic variations occur through mutations and the recombination of genes through sexual reproduction—giving an individual a different trait than others within the population. If this population begins to have more offspring than the environment is able to support, the individuals within a population will be forced to compete for food, water, shelter, and protection from predators. If the genetic variation of an individual is proven to be beneficial and helps him or her obtain any of these things better than others in the population, he or she is more likely to survive long enough to reproduce; the offspring

will likely share this same genetic variation.

These four steps can be used and followed for any example of natural selection or evolution, from an insect's ability to camouflage and blend in better, to a bird's beak length that allows it to obtain more food.

**Final model (enriched with a real-world example)**




**Critique (from a student in a different group)**

1. Are the most important features—in terms of what causes this process—depicted in this model?
   *Yes, I think that this model has most of the important features, maybe a little bit more information on overproduction (do you mean that parents have lots of offspring to ensure survival and only the fit survive?).*
2. Would this model be useful to teach someone who had never studied this process before?
   *Yes, I think that this model, with a bit more explanation, could be very helpful in teaching the steps of evolution.*
3. What important features are included in this model?
   *The group that created the model makes sure to show that for the process to occur, the genetic variation has to lead to an advantageous trait, which is determined by how the offspring does in the struggle for existence.*
4. What do you think should be added to this model to make it better for someone who has never studied this process?

*I think that a little more explanation for each step would be helpful, but other than that it is really good.*