

Gene-to-Protein Genie: Advanced Apprentice Level and Journeyman Level

Congratulations on gaining access to these later levels of the Genie! Each of these levels reveals new genes for you to explore. Enjoy!

Using this sheet

- As you did in Case 6B, you can compare the DNA sequence for each allele, compare the amino acid sequences of their proteins, and find out how the different proteins affect each version of the trait.
- This activity assumes that you have already completed Case 6B and the Genie Organizer that accompanied it. If this is not the case, ask your teacher for a copy of the *Genie Guide for Students* to learn how to use the Genie.
- This sheet has been simplified to a set of tables in which you can keep track of what you learn about any gene in the Genie, whenever you visit it. There is a table for each chromosome and a row for each gene on them. You earn access to new genes as you complete more Cases in Geniverse.
- You'll fill in only as much as you explore. ***Follow the example in the first table.***

Chromosome #1				
Gene	List the Alleles for this gene	Difference in DNA Sequence	Difference in Amino Acid Sequence	Notes about protein function
Wings gene (Wnt1)	Wings No Wings	G A	No wings ends after 13 amino acids; wings has 7 more	This gene makes sure the right body parts develop in embryos. Drakes with a mutation in this gene never grow wings.

Organizer: All Genes, All Genie Levels

Chromosome #2				
Gene	List the Alleles for this gene	Difference in DNA Sequence	Difference in Amino Acid Sequence	Notes about protein function

Organizer: All Genes, All Genie Levels

Chromosome #3				
Gene	List the Alleles for this gene	Difference in DNA Sequence	Difference in Amino Acid Sequence	Notes about protein function