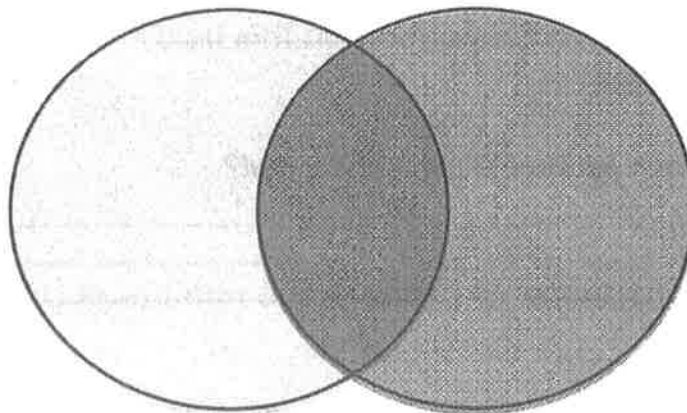


What's a Trait?

Part 1. Student Lab Protocol & Student Guide Cracking the Codes

Finding Your Match

- ① Based on your understanding of DNA base pairing, find your “match”... If you are DNA, find your mRNA match, and vice versa. Once you think you have found your match, check in with your teacher.
- ② Once you have found your match, align them on the board at the front of the room.
 - [a] On the board you will see some cards. Which do you think are DNA? Which do you think are mRNA? What are some differences you notice between the DNA cards and the mRNA cards? Complete the Venn Diagram below.



- ③ Now, as a class, let's go to "<http://www.attotron.com/cybertory/analysis/trans.htm>" to see how this DNA sequence can become a protein.
 - [a] How many boxes are on the screen? What is the title above each box?

4 Complete the table below by entering the DNA sequences.

DNA bases	# of DNA bases	# of RNA bases	# of Amino Acids
GA			
GACAT			
GACATAGAC			
GACATAGACGGCCACT			

- When you typed in your DNA nucleotide sequence, what is the name of the button you press to make something appear in the box to the right?
- What happened when you press the button to the right of the RNA box? How many letters appear in this field? What do you think these letters represent?
- What is the relationship between the number of DNA nucleotides and RNA bases?
- What is the relationship between the number of DNA nucleotides and Amino Acids?
- What is the minimum number of bases that yields one amino acid?