

## Lesson: PROTEIN SYNTHESIS FLOW CHART Comic Puzzle

### Honors Biology

**Directions:** **1)** Use the textbook and your reading guides to name each step and sub step in the blank boxes to the left. **2)** Add all **BOLDED** and UNDERLINED terms to your comic strip note template. **3)** Add the **NUM35R** of each step to your comic strip in all locations where depicted (*note that some steps are shown in more than one frame*). **4)** Record sequences highlighted in gray areas when instructed (using the depicted from comic).

	1. RNA polymerase attaches to <b>promoter</b> region on DNA
	2. RNA synthesis begins
	3. RNA strand grows longer
	4. Previously opened segments of DNA close as new ones open
	5. RNA polymerase reaches <b>terminator</b> region and detaches from DNA and RNA  Record INITIAL mRNA transcript here: _____
	6. A <b>G cap</b> and poly <b>A tail</b> are added to mRNA strand
	7. <b>Introns (x1)</b> are removed and leftover <b>exons (x2)</b> are spliced together  Record FINAL mRNA transcript here: _____
	8. mRNA leaves nucleus, enters cytoplasm, and attaches to a <b>ribosome</b> (at the <b>small ribosomal sub-unit</b> )
	9. An <b>initiator tRNA</b> brings the <b>amino acid</b> "methionine" into position on <b>mRNA strand</b> and <b>large ribosomal sib-unit</b> attaches, putting initiator tRNA in the <b>P site</b>
	10. A second tRNA with an <b>anticodon</b> complimentary to the next mRNA <b>codon</b> binds to <b>A site</b> on ribosome
	11. A <b>peptide bond (x3)</b> forms between the amino acid at the <b>P site</b> and the one at the <b>A site</b> .
	12. The tRNA at the <b>P site</b> breaks off from the mRNA and its amino acid and leaves the ribosome. The tRNA and amino acids in the P Site, moves to the <b>A site</b>
	13. The ribosome moves down the mRNA strand to the next codon and repeats steps 10-13 until...
	14. A <b>STOP codon</b> is reached, the mRNA, ribosomal sub-units, and <b>polypeptide chain</b> detach from one another Record final POLYPEPTIDE sequence of AA Here: (Abbreviations ok) _____ _____

- Lastly, Research a protein that is synthesized in the human body that you've never heard of and record below along with it's function: