

Name: _____

Period: _____

Protein Synthesis Instruction Manual

Assembly instruction manuals provide the details needed to construct some finished product. These highly visual instructions describe the pieces that are put together as well as the order in which the pieces are used to create the completed product.

In this assignment you will develop the assembly instructions for a protein. Your instruction manual will have three basic components:

- a parts check-list
- visual instructions
- written instructions

Below you will find descriptions of what to include in your protein synthesis instruction manual.

Manual Construction	v
<ul style="list-style-type: none"> • Make a book with two pieces of paper. 	
The Cover	
<ul style="list-style-type: none"> • Create an appropriate title • Include your name and period number • Create an image that illustrates protein synthesis (cannot be traced) 	
<ul style="list-style-type: none"> • Use at least 4 colors 	
Parts Checklist (page 1 and 2)	
<ul style="list-style-type: none"> • Title the page "Parts Checklist" • Draw and label the following structures: <ol style="list-style-type: none"> a. DNA with nitrogen bases b. mRNA (with codon) c. Nucleus d. Ribosome e. tRNA (with anticodon) f. Amino Acids 	
<ul style="list-style-type: none"> • Use at least 4 colors on each page 	
Assembly Instructions – Transcription (pgs. 3-4)	
<ul style="list-style-type: none"> • Title page 3 "Transcription Assembly Written Instructions" • Title page 4 "Transcription Visual Instructions" <ol style="list-style-type: none"> a. Begin with a code in DNA (at least 12 bases long). Transcribe the DNA into mRNA. Show the reader where in the cell this process occurs. b. Show the mRNA traveling to the cytoplasm. 	
<ul style="list-style-type: none"> • Use at least 4 colors • Multiple pictures drawn (step-by-step pictures) 	
Assembly Instructions—Translation (pgs. 5-6)	
<ul style="list-style-type: none"> • Title page 5 "Translation Assembly Written Instructions" • Title page 6 "Translation Visual Instructions" <ol style="list-style-type: none"> a. Show the reader where in the cell translation occurs. b. For translation be sure to include the ribosome, the mRNA, and tRNA. 	
<ul style="list-style-type: none"> • At least 4 amino acids created • Use at least 4 colors • Multiple pictures drawn (step-by-step pictures) 	

Name: _____

Period: _____

Category	Required Components	10 Points	5 Point	0 Points
<i>Cover</i>	Title, owner's name, cover art.	All components completed.	1-2 components missing.	No cover.
<i>Parts Checklist</i>	<i>The following parts are drawn and labeled:</i> a. DNA with bases b. mRNA (with codon) c. Nucleus d. Ribosome e. tRNA (with anticodon) f. Amino Acids	6 parts drawn and labeled.	5-3 parts drawn and labeled OR images drawn but not labeled.	0-2 parts drawn and labeled or no Parts Checklist attempted.
<i>Transcription</i>	Images of DNA being transcribed into mRNA and explanation (caption) describing events.	Multiple images of transcription and captions.	Images but no captions or captions but no images.	No images or captions describing transcription.
<i>Translation</i>	Images of mRNA being translated into amino acid chain using a ribosome and tRNA along with an explanation (caption) describing events.	Multiple images of translation and captions.	Images but no captions or captions but no images.	No images or captions describing translation.
Category	Required Components	5 points	3 points	0 points
Color	There are at least 4 colors used on each page	At least 4 colors on each page.	Some color used.	No color used.
Creativity/Quality		Above and beyond in creativity/quality.	Average creativity/quality.	Little or no creativity/quality.

Total: _____ / 50