

Name _____ Date _____ Per _____

Build-A-Bug Protein Synthesis Activity

Part 1: Your bug's DNA codes for proteins, which are made of amino acids. The proteins made by your bug's cells determine your bug's traits. Use the mRNA codon chart and your knowledge of transcription and translation to complete the chart below.

Part 2: Once you know the traits for your bug, cut out the correct parts and put the bug together and color it accordingly. You will also need to color your bug according to the traits it has.

Bug DNA Letter (A,B, C , D or E) _____

Your Bug's Name: _____

Gene	DNA Triplets	mRNA Codons	Amino Acid Chain	Trait
Head Size				
Thorax Size				
Abdomen Size				
Eye Color				
Wing Color				
Wing Length				
Leg Length				
Antenna				
Body Color				

Gene	Amino Acid Sequence (Protein)	Trait
Head Size	leucine/ alanine/ glutamic acid	small head
	leucine/ leucine/ glutamic acid	large head
Thorax Size	tryptophan/ aspartic acid/ glycine	short thorax
	proline/ alanine/ glycine	long thorax
Abdomen Size	valine/ phenylalanine/ tyrosine	short abdomen
	arginine/ phenylalanine/ histidine	long abdomen
Eye Color	isoleucine/ leucine/ leucine/ tyrosine/ Cysteine	red
	Cysteine/ isoleucine/ leucine/ leucine/ tyrosine	white
Wing Color	glycine/ glutamine/ serine/ alanine	yellow
	alanine/ serine/ glutamine/ aspartic acid	purple
	aspartic acid/ glutamine/ serine/ alanine	blue
Wing Length	isoleucine/ aspartic acid/ Cysteine	long wings
	isoleucine/ alanine/ Cysteine	short wings
Leg Length	threonine/ valine/ asparagine/ proline	long legs
	proline/ valine/ asparagine/ proline	short legs
Antenna	Cysteine/ serine/ threonine	present
	threonine/ Cysteine/ serine	absent
Body Color	histidine/ proline/ arginine	orange
	arginine/ proline/ histidine	brown
	histidine/ proline/ threonine	gray

Bug Parts

LARGE PARTS

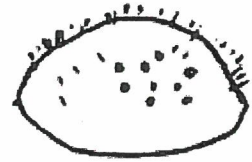
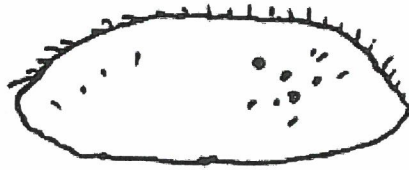
SMALL PARTS

Antennae

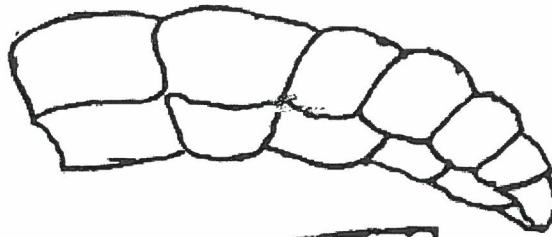
Head



Thorax



Abdomen



Wings



Legs

