

Biology 12 – Project
DNA Replication & Protein Synthesis

Purpose:

To demonstrate your understanding of DNA replication & Protein synthesis using an artistic medium.

Possible Project Formats:

- 3D model
- Electronic animation (no powerpoint or other comparable software)
- Artistic Interpretation (Dance, song, etc)
- Video/Photography (series of photographs)
- Poetry or Creative Writing

Project cannot be a literal interpretation of the processes involved it must be abstract and/or analogous of the process

The following information must be included (TOPICS):

- Roles of DNA, mRNA, tRNA, rRNA
- Steps DNA replication (to include DNA helicase, DNA polymerase, Topoisomerase)
- Steps in transcription (to include DNA helicase, RNA polymerase, Topoisomerase)
- Steps in translation (to include A and P site of ribosome)
- Complementary nature of DNA, mRNA and tRNA (to include codon, anticodon and amino acid)

Project Check-ins & Assessment:

We will be checking in prior to the due date.

You will need to hand in tangible evidence that you have begun to plan and carry out your project. If you are doing a:

- video or photography, make a storyboard as evidence.
- dance, record a rehearsal or list of dance steps
- skit, write a script or record a rehearsal
- model or animation, do detailed sketches, or make a preliminary model
- poetry or writing, write a rough draft or a **detailed** outline.

You will be assessed at this check-in in the following way:

- 0: very little to no progress made – little to no work; no evidence of work on project
- 1-2: beginning to develop ideas – ideas not thoroughly articulated, concepts not fully understood

2-3: clear direction indicated, visual evidence of project demonstrated, ideas may not be completely and clearly articulated.

3-4: significant progress made, visual evidence of project demonstrated, ideas are completely and clearly articulated

Finished Product Assessment

	Beginning	Developing	Accomplished	Excellent
Completeness of Content	Content covered by project is very limited and incorporates less than half of the required information	Content covered by project is minimally satisfactory and incorporates half of the required information.	Content covered by project is considerable and incorporates most required information	Content covered by project is thorough and incorporates all required information.
Detail	Includes very little detail covered on various topics as instructed in class.	Includes some (approx. ½) details covered on various topics as instructed in class.	Includes most details (mainly the key details) covered on various topics as instructed in class.	Includes all details covered on various topics as instructed in class.
Accuracy of information	For each topic, there are considerable mistakes or inaccuracies made (4+ mistakes)	For each topic, there are several mistakes or inaccuracies made (2-3 mistakes)	For each topic, there are minimal mistakes or inaccuracies made (no more than 1/topic).	All information is correct.
Content & Concept (expression and organization of ideas)	Expresses and organizes ideas and info with limited effectiveness – disordered presentation, elements obscure the content or concept	Expresses and organizes ideas and information with some effectiveness – undeveloped or immature presentation, irrelevant elements	Expresses and organizes ideas and information with considerable effectiveness – content informs image or project; elements support concept or content	Expresses and organizes ideas and information in a highly effective image/project – elements clearly support and enhance concept or content
Creativity	Uses creative processes with limited effectiveness	Uses creative processes with some effectiveness	Uses creative processes with considerable effectiveness	Uses creative processes with a high degree of effectiveness
Viewer Reception	Viewer is confused or apathetic	Viewer understands pretty much what the attempt is, but is disappointed in its execution	Viewer accepts image/project and understands intent	Viewer is engaged in image/project. Content and concept is transformed by presentation