

Topic: DNA to Me Lyrics

Summary: Students will write lyrics about DNA, protein synthesis, and phenotypes to their own made-up rap song.

Goals & Objectives: Students will be able to understand and explain the structure of DNA, that genes code for proteins, and proteins cause our traits.

NGSS Standards:

HS-LS-1.1: Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.

HS-LS-1.6: Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

HS-LS-3.1: Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

Time Length: 1 week supplemented with other curriculum.

Prerequisite Knowledge: This activity can be used to introduce to all of the concepts or be a review before introducing genetic variation / mutations.

Materials:

- Paper and pencils OR electronic device
- Dictionaries
- Optional - Example rap songs
- Optional - Background instrumental music for performance

Procedures:

1. Group the students into pairs of two.
2. Once the class has been introduced to a topic, they should write lyrics about that topic.
3. Students should work together on the rap lyrics, coming up with rhymes and explanations. Students should first come up with a first rough draft using keywords for the current topic. Then students should revise their lyrics so that it has more explanation of the scientific terms. All students must turn in a written version of the lyrics.
4. Repeat step three until all the information has been covered in class.
5. The day of the performance, students need to figure out who their proxy performer will be. Make sure the optional music and CD player are setup before the performance.

Editable DOCX File and Answer Key:
Available at www.ngsslifescience.com

DNA to Me Lyrics

Your group is going to write the music lyrics for a rap, or any other type of music, that explains or describe the structure of DNA, how that structure creates genes, how DNA genes codes for a protein, and how proteins cause of our physical traits. Your song has to be appropriate for school, may not contain double meaning words, and no negative / derogatory symbolism.

Lyrics

Raps are talk songs with a lot of rhyme. Most raps rhyme two lines at a time. Line one and line two rhymes with each other but not with other lines in the song. The two lines that rhyme are called a couplet. You can rhyme any word; it does not have to be the DNA vocabulary word.

Your rap lyrics needs to include all of the words below and must explain each of the phrases. The goal of the lyrics is to be educational and to explain or describe the meaning of the keywords, not just use them. You can put the keywords in any order.

- Section 1. DNA
 Chromosome
 Nucleic acid
 Double helix
 Nucleotide
 Phosphate sugar backbone
 Nitrogen bases
 A - T and C - G
- Section 2. Uracil (U)
 RNA
 Transcription
 A - U and C – G
 Nucleus
 Gene
- Section 3. Translation
 Ribosome
 Amino Acids
 Protein
 Protein Folds to become functional
 Physical Trait

Bad Lyric Example

Bad Example: I am going to rap about DNA, of which I know nothing about.

The reason why the example is bad is that it did not rhyme and did not explain about DNA.

Paper Format

When writing your lyrics, place your refrain first and title it refrain. Then list the lyrics. One vocabulary term equals all the words per line. Underline each vocabulary term once. There should be a total of 20 underlined vocabulary terms. Do not underline a term more than once.

Class Performance

In order to turn in your lyrics, you will perform your rap to the class. You must say the rap to a beat with your partner. You can also synchronize dance moves while delivering your rap. You can use background music but the volume must be low so everyone can concentrate on your lyrics. If you choose not to rap or sing your lyrics to the class, you may select a proxy to rap for you. There will be a 10-point reduction for the person not performing. Your rap is only turned in by it being performed in front of the class.

Limitations: The same proxy may only rap for one other group besides their own in the class.

Grading

All students need to turn in their own written copy of the lyrics.

	Beginning	Novice	Proficient	Advanced	Points
Section 1	Lyrics explain very little science in detail OR 3+ more keywords are missing.	Lyrics explain some science OR 1-2 keywords are missing OR some lyrics are not understandable.	Lyrics explain science but not in detail OR a keyword was not underlined.	Lyrics explain science in detail; all keywords are used, lyrics are appropriate, understandable, and underlined.	
Section 2					
Section 3					
	30 Points	35 Points	40 Points	50 Points	
Performance	Did not perform and used a proxy.	Hard to hear voice or not rapped to a beat.	Rapped to a beat but with little enthusiasm.	Projected voice, tried to rap to a beat with enthusiasm.	
	0 Points	5 Points	8 Points	10 Points	

Zero points for inappropriate song.