

Equity in Open STEM Courses - Generating Assessment Questions that Promote Critical Thinking and Diverse Student Voices

1. YouTube Video

- a. [Here is the video for this session](#)

2. Notes to supplement the video

A. Keys to success

Clarity: Compare the two questions below:

- Contrast allele, genotype and gene locus.
- Contrast allele, genotype and gene locus. What is similar, dissimilar between them? Is one a part of the other? Please compare in addition to defining each term in your own words.

Expectations: Compare the two questions below:

- Contrast allele, genotype and gene locus. What is similar, dissimilar between them? Is one a part of the other? Please compare in addition to defining each term in your own words.
- Contrast allele, genotype and gene locus. What is similar, dissimilar between them? Is one a part of the other? Please compare in addition to defining each term in your own words. Suggesting 3 sentences/fragments, 8 pts.

B. Why and how-type questions.

Asking what/ where/ which questions are fine but get to a deeper level with follow up questions. Notice that the first question alone is just anatomy and memorization. It takes a few more questions to get to a place of critical thinking.

- 1. A person is listening to a song on the radio in a language they fluently understand. Please answer the questions below about this scenario: 1. Which lobe does this information travel to first (from the thalamus)? 2. What is the function of this area (#1). Please use 2 fragments to answer. 2. In order for the person to



interpret the song there are at least 2 more areas (in the cerebrum) that are needed. Please list these 2 areas and their functions. 3. What if the person wants to sing along? What are 3 more areas that would be involved in this process of deciding to sing and then using skeletal muscle to sing the song? List the areas and why you believe they are needed. At least 3 fragments and 10 pts.

C. Compare and contrast Questions

If you ask students to compare and contrast terms on the homework, you can easily ask them to compare different sets of terms on an assessment. This is certainly a way to allow students' voices on your assessment. Consider allowing slang on your test or ask the students to explain terms like they are telling a friend not taking a science class.

D. Fix it and rewrite the sentence.

This is a nice way to cover a large amount of content (multiple choice questions often do) without taking the voice away from the student. They will need to fix any problems in the statements and they have the flexibility to write in their own words.

E. Opinion based questions that are probing.

Opinion questions should require the student to use material from the class in a new way.

- My suggestion in the video was applying succession (primary and secondary) to something novel like asking about human disturbances in the Pacific Northwest. You would need to make sure that all students know what is meant by human disturbances and that all live or have knowledge of the area before asking this question.

