

Practicing Primatology Activity Plan

An in-class activity for introductory anthropology courses. The activity can be adapted for synchronous on-line learning by using breakout rooms

Time: Approximately 20-30 minutes.

Intended Learning Outcomes

By the end of this activity, students should be able to

- Identify and describe elements of sexual dimorphism in gorillas;
- Apply selected evolutionary concepts to gorilla speciation at a basic level; and
- Work collaboratively to come to a consensus.

Required supplies

- Website or other online content with exemplars (see: <https://onlineacademiccommunity.uvic.ca/emcguire/gorilla-flip/>)
- Slideshow for instructions and micro-lecture
- Online or printed worksheet (see: <https://forms.gle/RHg2jZQJHW18xUk16>)
- Optional: casts of gorilla skulls

Steps

Begin with a micro-lecture on gorillas, reviewing key concepts as needed before having students engage in the tasks below. Important: avoid talking about sexual dimorphism in gorillas when reviewing this concept. (Maximum of 10 minutes.)

The tasks are presented via the worksheet as follows:

1. Get familiar with gorilla skulls (using the resources and question that asks for comparison with our own)
2. Compare male and female adult gorillas and decide which traits from the list would apply to males, females, either, or neither. I.e. which secondary traits are useful for making a sex estimation?
3. New information is presented in small pieces from an academic paper. Apply concepts from textbook reading to the new data. Asks students to remember, or look up, terms relating to evolution in order to select the correct response.
4. Four hypotheses are presented, all of which could be true based on the information provided. Students must discuss and come to an agreement on which is the strongest or most significant. This is a question that invites discussion and debate. When graded, what matters is not the choice made, but the justification for it.

End the activity, or begin the next session, with a review discussion that highlights common answers and flags the evolutionary concepts applicable in this activity. Be sure to reference the concepts and examples in subsequent classes if your evolution unit follows the flipped classroom activity as mine does.

Grading

I have used a variety of grading options requiring varying degrees of labour. The easiest is a simple participation mark (i.e. 1 mark for submitting any kind of answers). I have also used simple scales like exceeds expectations, meets expectations, does not meet expectations, followed by examples of good responses for students to compare their own work against. The most time consuming option is to individually grade each response. It can be valuable, but is not necessary for a low-stakes activity like this.

Variations

Other species can easily work with this activity, though great apes or monkeys with a high degree of sexual dimorphism would work best.

The article I have used most recently centres population decline and inbreeding (Xue et al., 2015). I chose this because I find my students sometimes have difficulties with understanding gene flow, genetic drift, and bottle-necking, so this sets up that later discussion effectively. You could choose any article that is meaningful for your course and connects between relevant modules. For example, I could have chosen an article about gorillas and communication (e.g. Bresciani et al., 2022) to link the primate and culture modules instead. To increase the complexity of the activity, you could also require pre-reading of the academic paper used.

Bresciani, C., Cordoni, G., & Palagi, E. (2022). Playing together, laughing together: rapid facial mimicry and social sensitivity in lowland gorillas. *Current Zoology*, 68(5), 560-569.

Xue, Y., Prado-Martinez, J., Sudmant, P. H., Narasimhan, V., Ayub, Q., Szpak, M., ... & Scally, A. (2015). Mountain gorilla genomes reveal the impact of long-term population decline and inbreeding. *Science*, 348(6231), 242-245. DOI: 10.1126/science.aaa3952