

# Tree Tender Socratic Seminar Teacher Notes

The main themes of the film are understanding what the tree of life is, how humans have both designed it and benefit from it, ecosystem services, and the sixth mass extinction we are currently causing. Assign your students to write three questions they could use to facilitate discussion during the Socratic Seminar. Below are some guiding questions you may use as examples to help the students to develop their questions or to ask during the Socratic Seminar in between students' questions to get a concept across that you would like discussed. However, you may not end up needing the following questions if your students write very thought-provoking questions that lead a full discussion. Some questions provided and asked by the students will be a simple, while others could begin a longer conversation. All questions appropriate to the lesson are valid and participation is the key learning tool here. Try and have all students talk at least three times during the seminar.

## **Tree of Life Questions**

1. What is the Tree of Life and how do we benefit from it?
2. How do scientists make or modify the Tree?
3. How is the Tree designed to help us better understand evolutionary history and ancestral connections?
4. How are all the taxonomic groups be related? (Use those within a single Kingdom and the Kingdoms themselves, such as Plantae and Protista)
5. Describe the endosymbiotic theory.
6. How can humans use the Tree to better understand organisms?

## **Ecosystem Services Questions**

1. What are ecosystem services?
2. Give some examples of how humans benefit from these service.
3. How have humans destroyed ecosystem services?
4. How do you think this might affect us and other organisms in the future?

## **Humans and the Planet Questions**

1. We are currently facing the 6<sup>th</sup> Mass Extinction. What have we done to speed up the process?
2. Some scientists believe we will soon pass the point of aiding our planet when it comes to climate change. Do you agree or disagree? Explain.
3. Predict what would happen if our population continued to grow, surpassing 10 billion people.
4. How has our society changed over the last 100 years that have increased this rate of planet abuse (ex: single use items, new technology, consumerism changes, etc.).
5. Technology changes have really changed how we function in the world, and how much energy and material is used in manufacturing new technology. What are some pros and cons to our changes in technology over the years?
6. How might wealth affect our planet carbon footprint?

7. What societal changes could help lower our carbon footprint? (Ex: redistribution of wealth, education improvement, health care).
8. List some causes of the current extinction event and discuss. Can the class agree on the biggest one?
9. Why do informed people continue living an environmentally destructive life? Are there ways you would try to influence behavior?
10. Imagine you're designing a city. What are ways you could plan for incorporating natural ecosystems, conservation, and a more environmentally friendly lifestyle into the city?
11. What do we need to do to tackle these issues at any level (home, school, city, world)?
12. What do we need to change in government to slow the loss of biodiversity?
13. What would happen if a whole level of the food chain went extinct? (Teacher: feel free to choose a level from decomposers, producers, and consumers, or have students discuss freely)
14. How can we help? What are steps we can take to hopefully make a difference?
15. If we continue as is, how might (manufacturing, energy, economy, health, etc.) change?
16. Design sustainable agriculture, technology, or disposal based on what you know