March 12, 2022
Earth May Be Hiding Thousands of Tree Species

Student Discussion Worksheet

Directions: Read the online *Science News* article "Earth may have 9,200 more tree species than previously thought" and skim the primary research article "The number of tree species on Earth" in the *Proceedings of the National Academy of Sciences.* Then discuss the following questions as instructed by your teacher. A version of the *Science News* article, "Earth may be hiding thousands of tree species," appears in the March 12, 2022 issue.

By the numbers

1. In your own words, summarize the main research findings presented in the *Science News* article. Make sure your summary includes quantitative data.

2. Study Figure 4 in the primary research article "The number of tree species on Earth." What does the figure depict according to the caption? Explain in your own words what the figure shows. Make sure to define terms that may be unfamiliar to you, using outside resources if necessary.

3. What type of diagram is shown in Figure 4? How many ellipses are there and what do they represent? What do the bolded and nonbolded values represent?

4. Describe how you can use the diagram to find the estimated number of tree species shared by each of two or more continents.

5. Which two continents share the most tree species? About how many species do the two continents share?

6. What percentage of all estimated tree species is shared by the five continents?

7. Study Table 1 in the primary research article and compare that information to what you learned from Figure 4. Which continent is the most diverse in terms of tree species? Explain your reasoning.

Branching out

1. Define the term biodiversity. Which terrestrial biome (desert, tropical forest, grassland, tundra, savanna, etc.) is the most biodiverse and why?

2. What characteristics make this biome appealing to many types of plants and animals? How does your answer relate to your answer for question No. 7 in the previous section?

3. Why is identifying and studying new species important? How can it aid scientists' knowledge of an ecosystem?

Extending estimations

In the research described in the article, researchers used data from the Global Forest Biodiversity Initiative and TREECHANGE databases to estimate the number of tree species that might remain unknown. This is an example of inductive reasoning, or observing patterns or trends to make a generalization. Give an example of a time when you've used inductive reasoning to make an estimation.