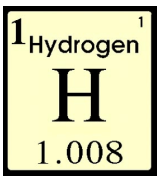


**Traveling Hydrogen Lab: The Water Cycle; SB4b**

Hydrogen is an element that is found in both the living portion of our planet and the inorganic parts of the Earth system. The Water cycle, also known as the hydrogen or hydrological cycle, is one of five major biogeochemical cycles. As you have already learned, these abiotic factors influence life. Hydrogen moves slowly through the cycle and is stored in reservoirs such as the atmosphere, living organisms, soils, oceans and glaciers along its way. The purpose of this lab is to play the role of hydrogen atoms traveling through the water cycle and to understand the importance of hydrogen to biotic factors in ecosystems.

**Instructions:** **1.**Obtain a passport and choose any reservoir. **2.** Read the directions at the station and roll the die. **3.** Stamp your passport and fill out the "where I'm going" and "how am I getting there" **4.** Continue around the room following the directions for your roll of the die. **5**. Enjoy your journey!

**Questions:**

1) Did you visit any stations more than once? Why is that a realistic and probable scenario?

2) Will your journey as a hydrogen element ever end? Justify your response.

3) Was everyone's journey the same? Please explain your response.

4) How is the movement of **matter, nutrients and chemicals** (i.e., hydrogen, nitrogen and carbon) different from the movement of **energy** in an ecosystem?

5) Which of the Hydrogen cycle reservoirs do you think is the largest?

6) Write a short paragraph about your trip through the water cycle. Include information about (1) where you went, and (2) how you got to each destination.

7) Draw a diagram specifically documenting your journey through the hydrological cycle (use the one on page 798 to help you).

8) How does transpiration impact the water cycle? Describe how the population density of autotrophic organisms could impact this process.

9) Would you classify water as a density dependent or density independent factor & why?

10) Is water a limited or non-limited natural resource? Justify your response.

11) Is there a starting point to the water cycle? Is there an ending point? Explain.

**STAPLE PASSPORT TO THE <u>BACK</u> OF YOUR LAB WRITE-UP**