NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CLASS PERIOD: \_\_\_\_\_\_

**STUDENT NOTES SHEET:**

**SPECIES, SPECIATION, AND HELLBENDER TAXONOMY**

**Part 1: What is a Species?**

*Summarize three key points from the video that we just watched*.



**Part** **2: Islands in the Sky**

**Appalachian salamander diversity**

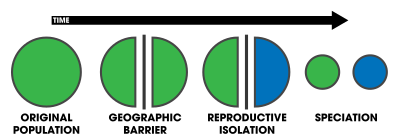
* More species of salamanders in Appalachia - \_\_\_\_\_\_\_ of all species – than in any other place in the world!
* Why do we live in such a hotspot? What is it about Appalachia that gives rise to so many species?
  + \_\_\_\_\_\_\_\_\_\_\_\_ - seasonal temperatures, \_\_\_\_\_\_\_\_\_\_\_\_, etc.
  + Elevation
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is it about mountains?**

* For salamanders, mountains are like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!

**This is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

* When two populations of the same species become separated by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Over long periods of time \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation), those populations accumulate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ differences



**The importance of biodiversity**

* If there are plenty of plants and animals, why should we worry about how many **different species** there are?
* Remember that different species fulfill \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in ecosystems – their ecological \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The more species there are, the more niches are being filled – the more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an ecosystem is (and the more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it provides to humans!)

**So, where do hellbenders fit in?**

**Kingdom**: Animalia

**Phylum:** Vertebrate

**Class**: Amphibia

**Order:** Caudata

**Family**: Cryptobranchidae

**Genus and species:** *Cryptobranchus alleganiensis*

Can you name a few other amphibians? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are hellbenders more closely related to lizards or frogs? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How do you know?

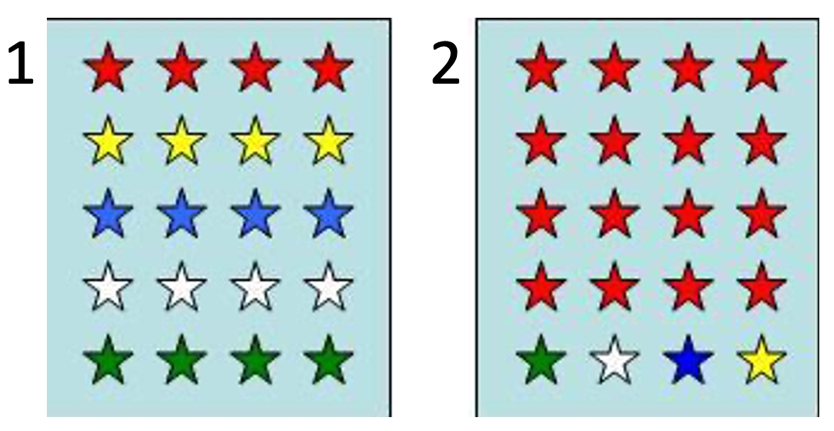
**How do we calculate diversity?** Let’s say we just go by how many different species there are in an area. Is this a good way to measure how “diverse” an area is? Why or why not?

**Species Richness**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = species richness

Which community has a higher species richness?

1 OR 2

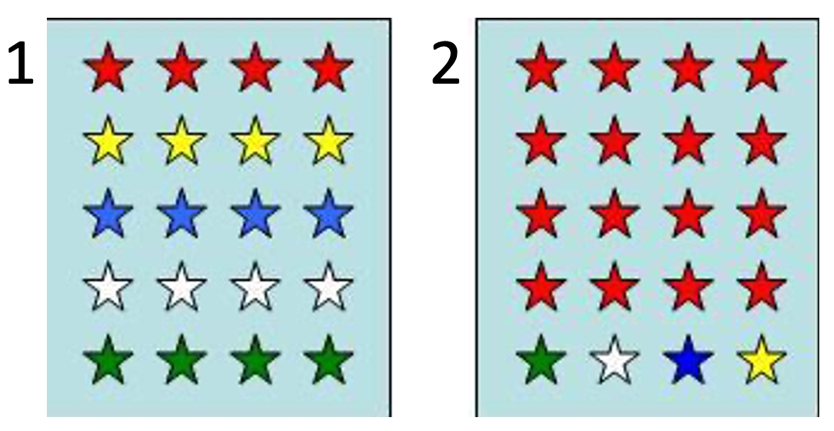
How about this one? 1 OR 2

But which one would you say is more diverse?

1 OR 2

**Species evenness**

* How “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” each species is (how many individuals of each species there are) = species evenness



Community \_\_\_\_\_ has a higher species evenness!