

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.

- 1.
- 2.
- 3.

### 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
  - \_\_\_\_\_

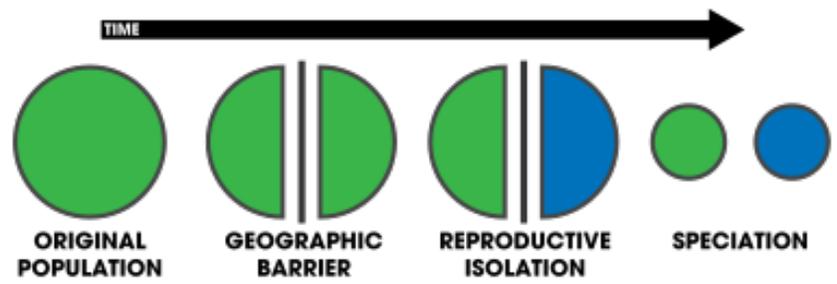


#### What is it about mountains?

- 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*

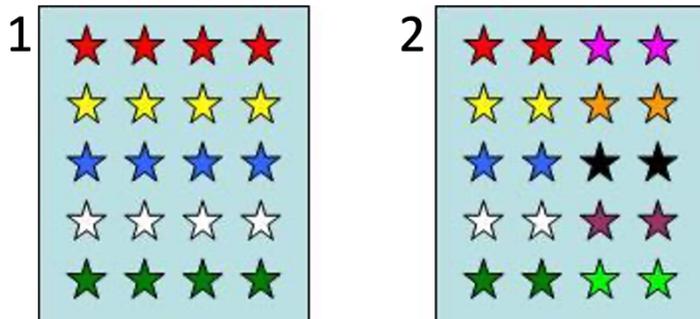
Can you name a few other amphibians? \_\_\_\_\_

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

1



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

1



2



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