

The Web of Biodiversity



Show the links between different species in an ecosystem and why more diversity equals a stronger system

EQUIPMENT:

- **Notecards / paper (one for each child)**
- **A ball of string / yarn**
- **Scissors**
- **Labels from one of the ecosystem webs***
- **Ball (optional)**

HOW IT WORKS

- 1.** Make labels for each child from the ecosystem web and attach to their shirts so everyone can clearly see the labels.
- 2.** Sit in a circle and go around, having each child say who they are and help explain what the species is, if necessary.
- 3.** Starting with the “predator” in the system, give the child the ball of string. Have that child identify a species that it would eat and throw the ball of string to that child, holding onto the end of the string.
- 3.** Have that child throw the ball of string to their food source (again, holding on to the string), and continue until the ball of string reaches a child which is a “plant”.
- 4.** Have the child throw the ball of string to an animal which would eat them and who isn’t already “attached” to the string. For example, if the deer threw the ball to the acorn, because deer eat acorns, then the acorn could throw the ball to the beetle, because beetles also eat acorns.
- 5.** Have the child throw the ball of string to an animal which would eat them and who isn’t already “attached” to the string. For example, if the deer threw the ball to the acorn, because deer eat acorns, then the acorn could throw the ball to the beetle, because beetles also eat acorns.
- 6.** Work back up the chain until you get back to the predator, and then go back down again to make a web. You can make as many paths as you like, going up and down the food chain, because many of the species will overlap and link. Make sure each child is included at least once.
- 7.** Once everyone is linked, go around the circle and talk about how each of the children are connected to one another (you don’t have to talk about everyone if time / attention spans are running short).

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8. Pick one or two children and cut their strings, “removing” them from the ecosystem. Point out to the children how their own strings are affected when someone else is removed. This is to show how if one species is made extinct in a system, it effects more species and can possibly lead to the extinction of someone else. For example, if one of the species is only connected to one other and the food source is removed, that species will have nothing left to eat, so it is also made extinct. Note: it’s not a perfect model, because it’s difficult to show what happens if predators are removed from the system, e.g. population explosions. It will work better if you remove herbivores / prey / plants. Also, scavengers and decomposers are omitted from all sample webs.

9. Ask the children what they could do to make the system stronger (replant native plants, reintroduce animals). Tie the strings back together to show restoration to the system (It’s not necessary to go into too much detail about how complicated this can be!)

10. Optional: place an inflatable beachball or other soft ball on top of the web to symbolize how ecosystems can be strong even if some strings are cut, but that there is a ‘breaking point’ - when too many strings are cut, the whole thing can come crashing down.

TERMINOLOGY

Predator - an animal that hunts other animals for food

Top predator - animal not hunted by any other animal (excluding humans)

Prey - animals that are hunted as food by other animals

Producer - plants that produce their own food (through photosynthesis, for example) Primary

(1st) consumer - animal that eats producers

Secondary (2nd) consumer - animal that eats an animal that eats producers

Tertiary (3rd) consumer - animal that eats a secondary consumer

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Biodiversity Webs (examples, feel free to make your own up!)

Species	Role	What eats it?
WOODLAND Acorn (oak tree) Bramble berries Beetle Blackbird Squirrel Deer Wolf	Producer Producer Primary consumer 1st / 2nd consumer Primary consumer Primary consumer Top predator	Beetle, deer, squirrel Blackbird, deer Blackbird Wolf Wolf Wolf
GRASSLANDS Grass Wildflower Bee Rabbit Wren Fox	Producer Producer Primary consumer Primary consumer 1st / 2nd consumer Top predator	Wren, rabbit Rabbit, bee Wren Fox Fox
OCEAN Phytoplankton Zooplankton Herring Seal Blue Whale Killer Whale	Producer Primary consumer Secondary consumer 3rd consumer / predator Primary consumer Top predator	Zooplankton, Blue whale Herring Seal, killer whale
OCEAN Phytoplankton Zooplankton Herring Seal Blue Whale Killer Whale	Producer Producer Primary consumer Primary consumer Predator Top predator	Monkey, sloth Monkey, sloth Boa Constrictor, Tiger Boa Constrictor, Tiger

Other Examples:

Grass -> Grasshopper -> Toad -> Grass-snake -> Buzzard

Algae -> Mosquito larva -> Dragonfly larva -> Small fish -> Large fish -> Heron

Leaf -> Aphid -> Ladybird -> Spider -> Mouse -> Fox