

## Mirbin: Species Interactions Project

Your poster-board will need the following:

1. Each animal must be labeled as a carnivore, omnivore, herbivore, scavenger, or decomposer (plants are Producers -they do not have to be labeled).
2. Each animal and plant must be labeled as specialized or generalized.
3. Relationships between the animals and plants must be labeled as parasitic, mutual or commensual.
4. Food Web: An arrow must be drawn in the direction the energy is flowing. For example, if a fox eats a kangaroo rat, the energy is moving from the kangaroo rat to the fox. So the arrow will start from the kangaroo rat and point towards the fox.
5. On the poster-board, indicate the biome or describe the habitat using illustrations or words.
6. Each animal and plant should have a number written next to it. **On a separate piece of paper** write a description of each animal and plant next to the corresponding number. The description must include:
  - What the animal eats
  - If it's a carnivore, omnivore, herbivore, scavenger or decomposer
  - If and why humans use the animal or plant, or if humans use its habitat
  - And problems that result from human interaction with the plant/animal
7. Environmental characteristics must also be discussed **on the separate sheet of paper**. Examples include factors such as:
  - Full-sun
  - Shaded forest canopy
  - Biome name
  - Temperature (Hot or cold)
  - Flat, hills, mountains, canyons
  - Moisture (humid or dry)
  - Precipitation (Rain, snow)
  - Water (rivers, streams, creeks, lakes, ponds, pools, no water, etc...)

Please take your time with this project. Ask your teacher or classroom volunteers and peers for help. Or you can ask your parents or teacher to email [mudfacelv@excite.com](mailto:mudfacelv@excite.com) with your question.

Choose one of the following two scenarios for creating your species interaction poster-board. The plants and creatures you create must be original!

### Scenario 1:

You must create a <sup>\*1</sup> specialized mammal that depends on a <sup>\*2</sup> specialized plant for a source of food (which could be the leaves, bark, fruit/berries, roots, seeds, flowers...). A specialized plant means that it can only grow in a specific region or area or the plant is pollinated by only one insect or animal (ask your teacher for more examples).

You must create at least <sup>\*3</sup> <sup>\*4</sup> two generalized creatures that are mammal, reptile, amphibian, bird, rodent, marsupial (ex: Koala Bear), primate (ex: Gorilla) or fish. They must eat or use either the *specialized mammal* or the *specialized plant* or both.

You must create at least one other <sup>\*5</sup> generalized plant that is found in your habitat.

There must be at least one parasitic relationship (one benefits, the other is harmed), one mutual relationship (both benefit) and one commensal relationship (one benefits, the other neither benefits nor is harmed). Label these relationships on the poster-board. For this you may have to create an additional animal or plant not listed in the scenario requirements.

Humans harvest the fruit of the specialized plant, which leaves fewer seeds lessening the chances of a new plant growing. So, the specialized plants reproduce less each year. **Discuss what will happen to the other components of this ecosystem.**

Please keep in mind, when creating your plants and animals, that specialized adapt over time to specific environments while generalists adapt to be versatile and survive in almost any environment. You may want to include their adaptations in your habitat description and discussion on the separate piece of paper.

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### Scenario 2:

You must create a <sup>\*1</sup> specialized rodent that depends on a <sup>\*2</sup> specialized fish for a source of food (which could be the fish, young fish or fish eggs). The *specialized fish* must depend on a <sup>\*3</sup> specialized food source (ex: another fish or algae or fish eggs).

You must create at least <sup>\*4</sup> one generalized creature that is a mammal, reptile, amphibian, bird, rodent, marsupial (ex: Koala Bear), primate (ex: Gorilla) or fish. They must eat or use the *specialized rodent* as a part of their diet.

You must create at least one other <sup>\*5</sup> generalized plant that is found in your habitat and that is eaten by the *generalized creature*.

Humans are polluting the water that the specialized fish lives in. This pollution makes the fish lay fewer eggs than a healthy fish would. **Discuss how this will affect the other components of the ecosystem.**

There must be at least one parasitic relationship (one benefits, the other is harmed), one mutual relationship (both benefit) and one commensal relationship (one benefits, the other neither benefits nor is harmed). Label these relationships on the poster-board. For this you may have to create an additional animal or plant not listed in the scenario requirements.

Please keep in mind, when creating your plants and animals, that specialized adapt over time to specific environments while generalists adapt to be versatile and survive in almost any environment. You may want to include their adaptations in your habitat description and discussion on the separate piece of paper.