

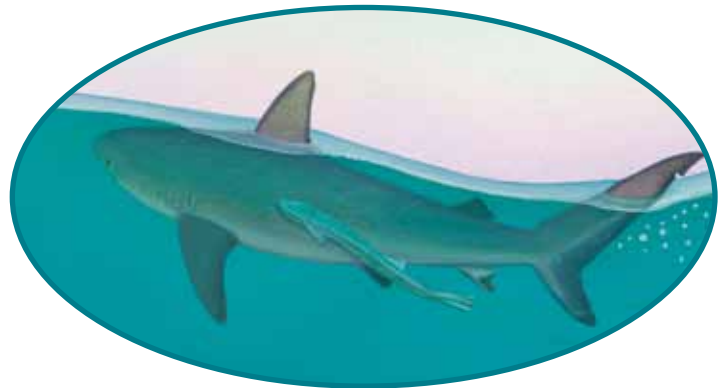
For Creative Minds

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Helping Partners

Living in the wild can be hard. Not all animals can survive by themselves. Many animals live in families or even larger groups (herds, flocks, pods, etc.). Some animals team up in a close partnership with other kinds of animals. These pairings are called symbiotic relationships. There are three types of these relationships:

- A “**win-win**” relationship (**mutualism**) means that the animals help each other and depend on each other to meet their own needs.
- In a “**win-stay the same**” relationship (**commensalism**), one animal benefits but the other one is not hurt or helped.
- One animal in a “**win-lose**” relationship (**parasitism**) wins by hurting the other animal. For example, a flea on a dog is a parasite. These insects guzzle blood to live. To get the blood, they attach themselves to dogs or other animals. The host dog or animals does not benefit at all. The parasites can pass germs that cause diseases.



What Type of Partners?



Mutualism: One partner eats bugs and parasites from the other animal partner. The one partner gets food and the other partner stays clean.

- When whales come to the surface for air, red phalaropes (a type of sea bird) eat parasites from their backs.
- Egyptian plovers are sometimes called “crocodile birds” based on observations that these plovers pluck bits of meat from the teeth of open-mouthed crocodiles. Scientists are still studying this relationship.
- Up to thirteen beetles cling to the Costa Rican cloud-forest mouse’s fur and face, eating fleas. When the mouse sleeps, the beetles eat bugs in the mouse’s burrow.
- Banded mongooses eat ticks from warthogs.
- Tickbirds eat ticks and flies from the backs of rhinoceroses.
- Sally lightfoot crabs eat algae from marine iguanas that live on the Galapagos Islands.
- At a “cleaning station,” wrasses eat parasites and algae from fish and eels. They might even swim into the mouth and gills of the fish being cleaned!

Mutualism: One partner uses the other one to scare away predators or to attract prey. The smaller partner eats food left over from the larger partner’s meal.

- The boxer crab holds a sea anemone in its pincers, waving it to scare away predators.
- Atlantic horse mackerel live between the tentacles of the Portuguese man-of-war. Somehow they avoid being stung and are protected from predators. The fish’s bright colors, as well as its small size, attract prey for the man-of-war.

Commensalism: One partner rides on the other partner without hurting the ride-giver.

- “Fake scorpions” (pseudoscorpions) catch a lift from flies and other insects by holding onto legs or abdomens.
- Remoras cling to sharks and a few barnacles hitch rides on sea turtles or whales.

Commensalism: One partner hides from predators without hurting their animal partner.

- Emperor shrimp avoid predators by hiding on the skin of sea cucumbers.

Parasitism: Some good relationships can turn bad.

- A few barnacles hitching a ride on a sea turtle may not hurt the sea turtle (commensalism) but too many barnacles may cause the sea turtle to not be able to swim as well, hurting the turtle.
- If tickbirds peck at and draw blood from backs of rhinoceroses, they end up hurting their “friends,” turning a mutualistic relationship into a parasitic relationship.

Match the Animal Partners

Find the animals partners that belong together.



barnacle



Sally lightfoot
crab



mackerel



red phalarope



fake scorpion



Portuguese
man-of-war



whale



sea turtle



fly



marine iguana



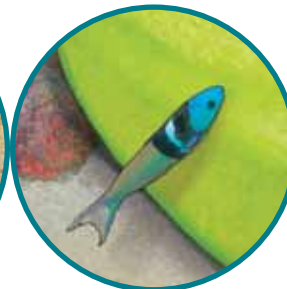
beetle



tickbird



mongoose



wrasse



emperor shrimp



eel



sea cucumber



rhinoceros



Costa Rican cloud-
forest mouse

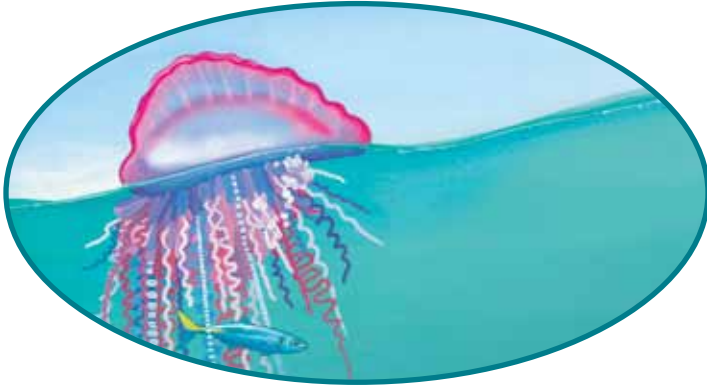


warthog

Answers: barnacle/sea turtle; Sally lightfoot crab/marine iguana; mackerel/Portuguese man-of-war; red phalarope/whale; fake scorpion/fly; beetle/Costa Rican cloud-forest mouse; mongoose/warthog; tickbird/Portuguese man-of-war; emperor shrimp/sea cucumber; wrasse/eel; rhinoceros; wrasse/eel; emperor shrimp/sea cucumber

Match the Habitat

Which animal partners live in the ocean and which live on land?



mackerel/Portuguese man-of-war



beetle/Costa Rican cloud-forest mouse



mongoose/warthog



emperor shrimp/sea cucumber



wrasse/eel



tickbird/rhinoceros

Answers: Ocean: mackerel/Portuguese man-of-war; emperor shrimp/sea cucumber; wrasse/eel;
Land: beetle/Costa Rican cloud-forest mouse (rainforest); banded mongoose/warthog (African savanna);
tickbird/rhinoceros (African savanna)